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### Financial Aid

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### Colleges and the Graduate School

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How to Use this Catalog

Your Washington State University Catalog provides you with information on a wide variety of important topics. This page shows how you can use the catalog easily.

General Information

- General Information iv-42

General Education Requirements and Courses 43-51

It is particularly important to understand WSU’s General Education Requirements (GERs), since you must fulfill them in order to graduate. This section lists all courses which fulfill particular GERs.

Note: Students pursuing degrees in the College of Liberal Arts and the College of Sciences have additional credit hour requirements for General Education and foreign language course work. Honors College students also have different requirements.

- General Education Requirements and Courses 43-51

Departments, Requirements, and Courses 53-281

The information in this section includes the following:

- Listings of faculty, descriptions of academic fields, and departmental requirements for majors and options, in alphabetical order by department name.

- A complete listing of courses needed for each degree. The requirements are shown in a semester-by-semester schedule of studies to help you in planning your course of studies. You will find majors organized by department. For instance, the Marketing degree program is found under the Departments of Business. Do note that departmental requirements are set at the time you certify in your major.

- A description of the courses offered by each department. Undergraduate courses are numbered from 100 through 499, 100- and 200-level courses are suggested for first- and second-year students, while 300- and 400-level courses are most appropriate for third- and fourth-year students. Graduate courses are numbered from 500 through 800, and professional courses are designated with the letter P following the course number.

- Understanding the Schedule of Studies

Here is an example and explanation of what you will see when you look at a schedule of studies:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
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<tbody>
<tr>
<td></td>
<td><strong>Biol 107 [B] Introductory Biology: Cell Biology and Genetics</strong> 4</td>
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(3-3) Prereq two semesters of chemistry or cc//; Biol 106. First semester of a one-year sequence for science majors. Continuation of Biol 106. Cellular and molecular biology including genetics.

- Understanding Course Descriptions

Below are examples of course descriptions with definitions for each part:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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<tr>
<td>HP 490 Instructional Practicum</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 6 hours. Same as MvtSt 490. S, F grading.</td>
</tr>
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</table>

You will find the complete description of this course in the Movement Studies course description section.

- Use the Index to find whatever you need!

Visit the Registrar’s Office Web site, www.registrar.wsu.edu, to search the online catalog or to access time schedule and registration information.

Keep in mind that all GER courses you choose must be outside your major department. So if you plan to be an architecture major, you cannot use Arch 202 [H] (GER) to satisfy your GER requirements, although anyone who is not an architecture major can.

(2) Footnotes are frequently used to give you more detailed information. In this case, the footnote will list the course you should take given your specific degree program.

(3) The College of Liberal Arts and the College of Sciences require you to take one year of a foreign language at the university level, if two years were not completed at the high school level.

Footnotes are frequently used to give you more detailed information. In this case, the footnote will list the course you should take given your specific degree program.

The course credit is variable; you choose the amount.

Prerequisites will be listed if there are courses you need to take before you enroll in this class.

Credit hours are shown here. This is a 4-credit course, with three hours in lecture and three hours in lab each week.

c// indicates that you may take the course at the same time you take the prerequisite.

Course grading is Satisfactory, Fail.
Plot Your Course!
Web-Based Course and Degree Tools

Want to explore how your courses will fit into a WSU degree program? Need to check your progress toward your degree or check how your course work would apply toward another degree? WSU students and transfer students can now easily access this information through one of the automated systems described below. These Web sites provide you with accurate information on courses and degree programs from the convenience of your computer.

FOR CURRENT WSU STUDENTS

The Degree Audit Reporting System (DARS)
The Degree Audit Reporting System (DARS) is an automated record that shows your progress toward completing an undergraduate degree in a particular major. DARS is one of several tools intended to help you understand what needs to be accomplished to complete your degree program. In concert with your advisor, you can use this report to keep track of your progress toward attaining a degree. The report does not replace the importance of academic advising, rather it promotes a more sophisticated approach to academic and career counseling.

An automated degree audit details the progress you are making toward your degree by itemizing degree requirements and by showing the completion status of each requirement on the report. In addition to allowing you and your advisor to see which requirements are incomplete, the report also shows which courses may be used to satisfy requirements; this will help you to choose the best courses to take in future semesters. The report also shows requirements for graduation that are not met by taking courses, such as completing the junior writing portfolio or maintaining a certain grade point average.

You may request Degree Audit reports over the web by following these links from the WSU homepage: www.wsu.edu/current-students; e InfoCenter; Academic Records; Check My Undergraduate Degree Progress. There is no charge for requesting the report and it may be sent directly to your e-mail address.

“What If?” Reports: You may also use the DARS system to check how your courses would fit into other degree programs. For instance, if you were majoring in business, you could explore how your coursework would fulfill the requirements for a B.A. in English with a Pre-Law option simply by choosing that degree program under the “What If” button on the degree audit Web site.

When you have applied for graduation, the Degree Audit serves as the final check for degree clearance.

For further information on DARS, contact your advisor or the Registrar’s Office.

FOR ALL STUDENTS

Transfer Course Equivalency Web Site
Go to: www.wsu.edu/advise/transfer-courses

The Transfer Course Equivalency Web site is an online tool that allows you to determine how a specific course will transfer to WSU, based on college or university courses that are in our database. You may access transfer course equivalencies in three different ways, either by the transfer course, a set of transfer courses, or by a single course work you’ve already taken applied to the requirements for a selected degree. You can return to this site at any time to add transfer course work or change your personal information. And you can explore as many degree programs as you wish.

Exploring Undergraduate Majors
Go to: www.wsu.edu/future-students/academics/index.html

Students seeking an undergraduate degree at WSU can select a major from more than 245 fields of study. You can explore these majors as well as focused areas of study within the major by visiting this Web site. The Web site also provides links to the colleges, the urban campuses, and to information about graduate programs.

WSU’s Online Catalog
Go to: catalog.wsu.edu

WSU’s online catalog contains the most up-to-date information about courses and degree requirements.
University Graduation Requirements

IMPORTANT: Students with Initial Postsecondary Enrollment prior to fall 1993 should consult with the Registrar’s Office.

University Honors College students do not complete GERs. Contact the Honors College for additional information.

General Education Requirements

Communication Proficiency [W] [C]
At least 3 must be Written [W]

• Engl 101 or 105 3 cr
• choose one ___________________________________________ 3 cr

World Civilization [A]

• GenEd 110 3 cr
• GenEd 111 3 cr

Mathematics Proficiency [N]

• choose one ___________________________________________ 3 or 4 cr

American Diversity [D]
Effective with Initial Postsecondary Enrollment Fall Semester 2000. Meets both the [D] requirement and another GER course designation.

• choose one ___________________________________________ 3 cr

Arts and Humanities [H][G]

• choose one ___________________________________________ 3 cr

Social Sciences [S][K]

• choose one ___________________________________________ 3 cr

Arts and Humanities [H][G] or Social Sciences [S][K]

• choose one ___________________________________________ 3 cr

Intercultural Studies [I][G][K]

• choose one ___________________________________________ 3 cr

Sciences [B][P][Q]
10 semester credits including 1 hour of lab (L). At least 3 credits must be Biological Sciences [B] and 3 credits must be Physical Sciences [P].

• choose one lab science (L) ______________________________ 4 cr
• choose one ___________________________________________ 3 or 4 cr
• choose one ___________________________________________ 3 or 4 cr

Upper-Division Requirements

All community college transfer students with an approved transferable degree will be held to these requirements:

Tier III Course (GER)
Effective with Initial Postsecondary Enrollment Fall Semester 1995.

• choose one ___________________________________________ 3 cr

University Writing Portfolio/Qualifying Exam
Complete before earning 60 credits and prior to taking Writing in the Major.

Writing in the Major [M]
Required for all majors. Consult your major department for details.

• choose one ___________________________________________
• choose one ___________________________________________

Upper-Division Coursework (300-400-level)
Complete 40 semester credits.

COLLEGE OF SCIENCES
COLLEGE OF LIBERAL ARTS

Additional graduation requirements

All students, including community college transfer students with an approved transferable AA degree from Washington, Oregon, Idaho, California, Arizona, Hawaii, or students pursuing a second bachelor's degree in the majors in these colleges will be held to the following requirements:

Foreign Language (same language)
Complete 2 years high school or 1 year of college in a foreign language.

Additional 6 semester credits of [H,G,I,S,K]
For a total of 18 semester credits in [H][G][I][S][K] courses.

• choose one [H,G,I,S,K] __________________________________ 3 cr

Additional 2 semester credits and 1 additional lab science
For a total of 12 semester credits of GER sciences and 2 lab (L) courses.

Minimum University Graduation Requirements: 120 total hours, 40 upper-division credit hours, and a 2.0 overall grade point average.

• “Initial Postsecondary Enrollment” is established by matriculation through a formal admission process, after high school graduation, to an accredited institution of higher education.
• An approved transferable AA degree from Washington, Oregon, Idaho, California, Arizona, or Hawaii completes all lower division GER requirements except for the additional requirements in the College of Liberal Arts and the College of Sciences.
• A complete description of the General Education program can be found in the WSU Catalog.
• [G] meets a GER in either Intercultural Studies or Arts and Humanities. [K] meets a GER in either Intercultural Studies or Social Sciences. (L) course includes a lab, [D] meets the American Diversity Requirement and another GER course designation.

Prepared by the Student Advising and Learning Center
General Education and Writing Proficiency Requirements

Past changes are summarized in the chart on the previous page. See the General Education Program section of the catalog for more detailed information.

General Education Program Requirements

WSU’s General Education Program has been converted from a simple system of distribution requirements into an integrated program which is organized vertically, allowing sequential study in depth from the freshman year to the junior or senior year. Distribution requirements in the Arts and Humanities, Social Sciences, and Sciences are now organized in three tiers, indicating in broad terms the academic level of the courses and the order in which they should be taken. In their junior or senior year, students will select an upper-division Tier III course which is intended to assist students’ integration of knowledge from various knowledge domains and to permit advanced study and research outside the major.

Please note that students in the College of Sciences and the College of Liberal Arts must fulfill additional requirements.

A. The Structure of the General Education Program

Students are required to take a minimum of 40 credit hours distributed among the categories listed below.

Tier I: 15 semester credit hours
World Civilizations [A] GenEd 110 and 111 6
Written Communication [W] 3
Mathematics Proficiency [N] 3
Sciences [Q] 3

Tier II: 22 semester credit hours
Communication Proficiency [W], [C] 3
Arts and Humanities2 [H], [G] 3
Social Sciences3 [S], [K] 3
Arts and Humanities/Social Sciences1 [H], [G], [S], [K] 3
Intercultural [I], [G], [K] 3
Sciences4 [B], [P] 7

Tier III: 3 semester credit hours
Tier III Course 3
American Diversity course D 3
total hours 40

1 A total of 9 hours of Arts and Humanities and Social Sciences with a minimum of 3 in either.
2 At least 3 hours in Biological Science and 3 hours in Physical Science plus 1 additional hour for three clock hours per week of laboratory.
3 To complete the General Education Requirements, students must choose one course that is also designated as an American Diversity D course. This course adds no credit hours to the General Education Requirements as American Diversity courses also fulfill GER requirements in another area.

American Diversity

D 3 Hours
Courses addressing American Diversity provide an overview of historical and contemporary issues in cultural diversity in the United States. The course work introduces students to one or more issues and engages them in critical inquiry relating to cultural differences and commonalities and their complex interactions in American society.

Writing Proficiency Requirements

WSU faculty, administration, and regents have identified writing proficiency as a priority at WSU. Accordingly, all students will satisfy specified requirements to meet WSU's writing proficiency standards for graduation. The requirements are outlined below:

1. Writing Experience within General Education
a. All students must satisfy the Communication Proficiency requirement by passing 6 hours of written and oral communication courses, including at least 3 in written communication [W] at Tier I, and 3 of either [W] or [C] at Tier II.
b. Prior to enrollment in freshman writing courses, all students must take a Writing Placement Examination for the purpose of placement in appropriate writing courses. These placements are mandatory. The Writing Placement Examination is administered during summer New Student Orientation, at the beginning of fall semester, and prior to spring registration. Examination results will place students in the core writing course, Engl 101, Introductory Writing (or Engl 198), or in Engl 101 plus one hour of Engl 102, Writing Tutorial. Students whose first language is not English may be placed in Engl 105, Composition for ESL Students, or Engl 104, Intermediate Grammar and Basic Skills ESL. In some instances, students may be exempted from Engl 101 on the basis of their performance in the Placement Examination.
c. General Education courses require student writing of various kinds, both formal and informal, in order to provide adequate instruction in writing skills and to provide a wide range of student experiences in writing for many purposes and audiences.

2. The University Writing Portfolio — Writing Assessment at Mid-Career
Successful performance on the University’s Junior Writing Portfolio is a requirement for graduation at WSU. Students may satisfy this requirement at any time between completing the Engl 101 requirement (or equivalent) and earning their sixty-first credit. Completing the Junior Portfolio involves submitting three papers from previously assigned class work plus two timed and proctored writing exercises. Students must complete the portfolio no later than the end of the first semester of upper-division standing (upon completion of 60 hours). The Writing Portfolio must be completed before a student enrolls in a course which satisfies the Writing in the Major requirement (see below). Visit juniorportfolio.wsu.edu.

3. Writing in the Major [M]
Two courses identified as writing in the major [M] must be included in course work taken to meet departmental requirements. Consult the requirements in the department in which you intend to major. Students are expected to complete the University Writing Portfolio before enrolling in an [M] course.

Transfer Students and General Education Requirements
Transfer students who have completed an approved Associate of Arts (AA) or Associate of Science (AS) degree at a Washington or Oregon community college are considered to have fulfilled the lower-division General Education Requirements. These students will still be responsible for meeting the other requirements for graduation, including those in the college and major departments. The University Writing Portfolio, two Writing in the Major [M] courses, and one Tier III [T] course are not lower-division requirements and therefore cannot be satisfied by the approved associate degree.
Academic Calendar

First Semester (Fall)

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<td>Labor Day holiday</td>
<td>Sept 5</td>
<td>Sept 4</td>
<td>Sept 3</td>
<td>Sept 1</td>
<td>Sept 7</td>
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<tr>
<td>Veterans’ Day holiday</td>
<td>Nov 11</td>
<td>Nov 10</td>
<td>Nov 12</td>
<td>Nov 10</td>
<td>Nov 11</td>
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<tr>
<td>Commencement</td>
<td>Dec 10</td>
<td>Dec 9</td>
<td>Dec 8</td>
<td>Dec 13</td>
<td>Dec 12</td>
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<td>Final Exams, Monday - Friday</td>
<td>Dec 12-16</td>
<td>Dec 11-15</td>
<td>Dec 10-14</td>
<td>Dec 15 - 19</td>
<td>Dec 14-18</td>
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<tr>
<td>Final grades due, 5:00 p.m.</td>
<td>Dec 20</td>
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<td>Dec 18</td>
<td>Dec 23</td>
<td>Dec 22</td>
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Second Semester (Spring)

| Classes begin | Jan 9 | Jan 8 | Jan 7 | Jan 12 | Jan 11 | Jan 10 |
| Martin Luther King Jr. Day holiday | Jan 16 | Jan 15 | Jan 21 | Jan 19 | Jan 18 | Jan 17 |
| Presidents Day holiday | Feb 20 | Feb 19 | Feb 18 | Feb 16 | Feb 15 | Feb 21 |
| Midsemester grades due, 5:00 pm. | Mar 1 | Feb 28 | Feb 27 | Mar 4 | Mar 3 | Mar 2 |
| Final Exams, Monday–Friday | May 4-8 | Apr 28-May 2 | Apr 24-May 4 | May 4-8 | May 3-7 | May 2-6 |
| Commencement | May 6 | May 5 | May 3 | May 9 | May 8 | May 7 |
| Final grades due, 5:00 p.m. | May 9 | May 8 | May 6 | May 12 | May 11 | May 10 |

Summer Session

| Early Session begins | May 8 | May 7 | May 5 | May 11 | May 10 | May 9 |
| Memorial Day holiday | May 29 | May 28 | May 26 | May 25 | May 24 | May 30 |
| Eight-Week Session begins | June 5 | June 4 | June 2 | June 8 | June 7 | June 6 |
| Late Six-Week Session begins | June 19 | June 18 | June 16 | June 22 | June 21 | June 20 |
| Independence Day holiday | July 4 | July 4 | July 3 | July 5 | July 4 | July 4 |
| Summer Session ends, Friday | July 28 | July 27 | July 25 | July 31 | July 30 | July 29 |
| Final grades due, 5:00 p.m. | Aug 1 | July 31 | July 29 | Aug 4 | Aug 3 | Aug 2 |

Please note: Faculty advising and preregistration for continuing students will be held prior to the end of the previous term.

Specialized Accreditations

Washington State University is accredited by the Northwest Commission on Colleges and Universities (NWCCCU), the regional accrediting association. The institution is a member of the National University Continuing Education Association and is listed in the official publications of the U.S. Office of Education and the State Department of Public Instruction.

Many departments and colleges are accredited by professional accrediting associations recognized by the Council on Postsecondary Accreditation. This information is included in the introductory material of the various departments and colleges, and an abbreviated list is printed below.

Accrediting Commission on Education for Health Services Administration
American Animal Hospital Association
American Assembly of Collegiate Schools of Business: The International Association for Management Education
American Association for Accreditation of Laboratory Animal Care
American Association of Colleges for Teacher Education
American Association of Veterinary Laboratory Diagnosticians
American Chemical Society
American Council for Construction Education
American Council on Pharmaceutical Education
American Dietetic Association
American Psychological Association
American Society of Landscape Architects
American Speech-Language-Hearing Association
American Veterinary Medical Association
Commission on Collegiate Nursing Education (pre-approval)
Computing Accreditation Commission of the Accreditation Board for Engineering and Technology
Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology
Foundation for Interior Design Education Research
National Architectural Accrediting Board
National Association for the Education of Young Children
National Association of Schools of Music
National Athletic Trainers Association
National Council for Accreditation of Teacher Education
National League for Nursing
National Recreation and Park Association
Northwest Commission on Colleges and Universities
Society for Range Management
Society of American Foresters
University Council for Educational Administration
Washington State Board of Education
Washington State Commission for Quality Assurance in Nursing
Officers of the University

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Libraries

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University Honors College

LEGAL COUNSEL
Antoinette Ursich
Division Chief
WSU Division of State Attorney General's Office
Washington State University

Washington State University is committed to providing quality education for undergraduate and graduate students within a caring community. The University’s motto—“World Class. Face to Face.”—reflects that commitment.

Considered one of the leading public research universities in America, WSU has 10 colleges and a Graduate School. WSU offers strong and varied academic programs. The liberal arts and sciences have an important place in the curriculum, along with business, education, architecture, pharmacy, nursing, and the traditional land-grant programs in agriculture, engineering, and veterinary medicine.

WSU offers some 245 fields of study including more than 150 majors plus many minors, options, and certificate programs. Bachelor's degrees are available in all major areas, with master's and doctoral degrees available in most. The undergraduate core curriculum, including world civilizations courses and writing requirements, is nationally recognized. WSU’s Honors College is one of the oldest and most respected all-university programs for academically talented students. WSU confers approximately 5,300 bachelor's, master's, professional, and doctoral degrees statewide in a typical year.

WSU programs include online coursework through Distance Degree Programs. The university offers a wide range of programs and degrees, including options for students who prefer to attend classes online. This allows students to complete their studies from anywhere with internet access at every seat, a cyber café, computer labs, and much more. Students enjoy using the Student Recreation Center and also taking part in one of the largest University-sponsored intramural programs in the nation.

Loyal fans, including students, faculty, staff, and alumni, cheer on the WSU Cougar women’s and men’s intercollegiate athletic teams, members of the Pac-10 Conference, in on-campus venues.

Degrees Granted

Academic Degrees

Accounting, M Acct
Agribusiness, BS, MA
Agricultural Economics, BS, MA, PhD
Agricultural Economics and Management, BS
Agricultural Technology and Management, BS
Agriculture, BS, MS
American Studies, BA, MA, PhD
Animal Sciences, BS, MS, PhD
Anthropology, BA, MA, PhD
Apparel, Merchandising, and Textiles, BA, MA
Architectural Studies, BS
Architecture, M Arch, MS
Asian Studies, BA
Audiology, Aud D
Biochemistry, BS, MS, PhD
Bioengineering, BS
Biological Systems Engineering, BS
Biological, MS, MS
Biotechnology, BS, MS
Botany, MS, PhD
Business Administration, BA, MBA, PhD
Chemical Engineering, BS, MS, PhD
Chemistry, BS, MS, PhD
Civil Engineering, BS, MS, PhD
Communication, BA, MA, PhD
Comparative Ethnic Studies, BA
Computer Engineering, BS, MS
Computer Science, BA, BS, MS, PhD
Construction Management, BS
Criminal Justice, BA, MA, PhD
Crop Science, BS, MS, PhD
Design, D Des
Digital Technology and Culture, BA
Economics, BA, MA, PhD
Education, BA, EdM, MA, MIT, EdD, PhD
Electrical and Computer Engineering, BS, MS
Electrical Engineering, BS, MS
Electronic Media and Cultures, BA
Engineering, MS
Engineering Management, MEngMgt
Engineering Science, PhD
English, BA, MA, PhD
Entomology, BS, MS, PhD
Environmental Engineering, MS
Environmental and Natural Resource Sciences, PhD
Environmental and Resource Economics and Management, BS
Environmental Science, BS, MS
Exercise Science, MS
Fine Arts, BA, BFA, MFA
Food Science and Human Nutrition, BS

Food Science, MS, PhD
Foreign Languages and Cultures, BA, MA
Genetics and Cell Biology, BS, MS, PhD
Geology, BS, MS, PhD
Human Development, BA, MA
Human Nutrition, MS
Humanities, BA
Individual Interdisciplinary, PhD
Integrated Cropping Systems, BS
Interior Design, BA, MA
Kinesiology, BS
Landscape Architecture, BLA, MS
Liberal Arts, B Lib A
Manufacturing Engineering, BS
Materials Science, PhD
Materials Science and Engineering, BS, MS
Mathematics, BS, MS, PhD
Mechanical Engineering, BS, MS, PhD
Microbiology, BS, MS, PhD
Molecular Plant Sciences, MS, PhD
Music, BA, B Mus, MA
Natural Resource Management, BS
Natural Resource Sciences, BS, MS
Natural Resources, MS
Neuroscience, BS, MS, PhD
Nursing, BS, M Nurs
Nutrition, PhD
Pharmaceutical and Toxicology, MS, PhD
Pharmacy, Pharm.D.
Philosophy, BA, MA
Physics, BS, MS, PhD
Plant Pathology, MS, PhD
Political Science, BA, MA, PhD
Psychology, BA, BS, MS, PhD
Public Affairs, BA, MPA
Regional Planning, MRP
Science, BS
Social Sciences, BA
Social Studies, BA
Sociology, BA, MA, PhD
Soil Science, BS, MS, PhD
Speech and Hearing Sciences, BA, MA
Sport Management, BA
Statistics, MS
Theatre Arts and Drama, BA
Veterinary Medicine, DVM
Veterinary Science, BS, MS, PhD
Women's Studies, BA
Zoology, BS, MS, PhD
The Libraries

www.wsulibs.wsu.edu

The Libraries system, with collections of more than 7 million items, is an integral part of WSU’s educational resources. The Libraries receive more than 29,000 serials publications, including scientific, scholarly, and select electronic resources available through the Libraries. Summit, a joint catalog that WSU shares with 31 other academic libraries in Washington and Oregon, provides an online requesting service for book delivery to library circulation desks. The Libraries provide Web access to a wide variety of electronic indexes and abstracts and thousands of full-text electronic books and journals. Reference librarians provide personal assistance and online reference to users of these electronic and traditional collections, offer instruction to students on use of library resources, work with teaching faculty to develop the collections, and provide access to materials from other libraries.

The Holland/New Library provides extensive collections in the social sciences, business, fine arts, and the humanities, as well as sophisticated services designed to assist students, faculty, and researchers in utilizing these resources. The Manuscripts, Archives, and Special Collections unit contains rich collections of unique primary resource materials including books, manuscripts, documents, and photographs to support study and research special fields, including Pacific Northwest history, modern British literature, regional publishing, veterinary history, agricultural history, wildlife and outdoor recreation, WSU history, and other subjects. The Media Materials & Reserves unit houses the media collection (videos, films, slides, audio tapes, and other media) for classroom instruction and checkout, as well as housing Course Reserves. Special media collections include the WSU-UI Regional Media Collection, the McCaw Classic Feature Films, Gnaedinger Historical Films, and the Pitzer Classic Radio Tapes.

The Owen Science and Engineering Library supports study and research in the pure and applied sciences with substantial traditional and electronic collections in these disciplines. It is conveniently located near most departments served by its collections.

The collections of the George W. Fischer Agricultural Sciences Library in Johnson Hall Annex emphasize support for plant and entomological sciences.

The biomedical collections and services offered by the Health Sciences Library, located in Wegner Hall, primarily support the instructional and research needs of the colleges of Veterinary Medicine and Pharmacy.

The George B. Brain Education Library in Cleveland Hall offers a wide range of materials and services to meet research and instructional needs from preschool through higher education and adult education.

The Architecture Library, which supports programs in the School of Architecture, is located in Carpenter Hall.

In addition, library facilities and services are available at the Spokane, Tri-Cities, and Vancouver campuses, and at the Intercollegiate College of Nursing (Spokane) and the WSU Energy Library (Olympia).

Library services for students enrolled in the Distance Degree Program are available via toll-free telephone and e-mail.

The WSU Libraries are open throughout the year, although hours vary during intersessions and holidays.

The Summer Session

www.summer.wsu.edu

Washington State University conducts a summer session for undergraduate, graduate, and visiting students as an integral part of its year-round operation. Credit earned during summer session is applied toward fulfillment of requirements for baccalaureate and advanced degrees in the same manner and subject to the same rules as credit earned during fall and spring semesters.

During summer session, courses are offered in most University departments to meet the needs of new freshmen and transfer students who wish to get an early start on their degree programs. Courses in a variety of academic areas are offered for continuing undergraduate and graduate students as well as for others qualified to pursue them. Emphasis is also placed on a program of advanced work for teachers and school administrators.

Shorter sessions, including early session courses varying from one to six weeks, special conferences, and institutes are also features of summer session.

The Summer Session Bulletin, published annually in March, is available upon request to the Summer Session Office, Washington State University, Pullman, WA 99164-1035.

The summer application and course listing is available on the Summer Session Web site.

Washington State University Foundation

WSU Foundation, PO Box 641925, Pullman, WA 99164-1925
wusufoundation.wsu.edu

Located in downtown Pullman, the WSU Foundation advances the teaching, research, and public service endeavors of Washington State University by generating private contributions to supplement the institution’s state and federal revenues for capital, operating, and student assistance funds. Since its creation in 1979, the Foundation has raised more than $729 million for the University’s highest priorities. Staffed by a team of professional development officers, the WSU Foundation administers all gifts in a business-like manner in accordance with the donor’s wishes. A Board of Governors governs the WSU Foundation and the voting membership is made up of a Board of Trustees. For more information, visit the Foundation’s Web site or e-mail foundation@wsu.edu. Mail inquiries may be addressed to WSU Foundation, PO Box 641925, Pullman, WA 99164-1925.
Student Life

Compton Union Building
www.cub.wsu.edu

The Compton Union Building is more than a building—it is an educational program of out-of-class activities designed to provide for the student’s personal, social, and cultural development; practice in leadership; and management and enjoyment of leisure activities. Compton Union is the campus community center. The union has facilities for student activities, conferences, and conversations. Food services include an espresso shop, fast food, international cuisine, and a full-service restaurant. Compton Union also offers meeting rooms, games area, hotel rooms for campus visitors, a movie theater, copy center, art gallery, student legal services, and a variety of shops including a U.S. Post Office, hair-styling salon, travel service, floral shop, credit union, and bank machines.

Other groups within Compton Union include Campus Involvement, the Associated Students of Washington State University (ASWSU), Residence Hall Association, Panhellenic/Intrafraternity Council, and Graduate and Professional Students Association (GPSA). Students can explore community service opportunities at the Community Service Learning Center ranging from one day to semester-long placement.

Scholastic Societies

Alpha Epsilon Rho. Alpha Epsilon Rho is a broadcasting honorary in the Edward R. Murrow School of Communication. Represented by the National Broadcasting Society, AERho is a nationwide organization made up of the very best students, faculty, and professional communicators in the broadcasting industry. Formed in 1943, it was the first national organization whose primary purpose was to bring communication students and professionals together. The WSU Chapter of AERho is involved in many activities, including sponsoring the end-of-the-year banquet for the School of Communication.

Golden Key. Golden Key National Honor Society was established in 1977 and chartered at WSU in 1987. The society is open to the top 15 percent of the junior and senior classes in all disciplines of study. Qualification is defined at WSU as those students with over 60 credit hours, 30 of which must be from WSU, who have attained a 3.4 cumulative gpa. Golden Key offers not only recognition for superior academic achievement, but opportunities for service and leadership. The WSU Golden Key Chapter annually recognizes the two outstanding academic advisors of the year at its annual induction reception.

Mortar Board. Mortar Board is a national honor society of college seniors recognized for their scholarship, outstanding and continual leadership, and dedicated service to the college or University community. It is a member’s willingness to continue to serve that differentiates Mortar Board from an honorary organization. Acceptance of membership indicates the person’s agreement to fulfill the responsibility for active participation in the chapter. Members must have at least a 3.0 cumulative grade point average to be considered for membership. Each spring, the chapter recognizes freshmen who earn at least a 3.5 gpa for the previous fall semester.

Omicron Delta Kappa. Omicron Delta Kappa is the national leadership honor society for juniors, seniors, graduate, and professional students. For eighty years, the society has recognized achievement and leadership in scholarship, athletics, campus and community service, social and religious activities, campus government, journalism, speech and the mass media, and the creative and performing arts. Students of any discipline who are in the top 35 percent academically are invited to apply for lifetime membership. Visit the Web site at www.odk.org.

Phi Delta Kappa. Phi Delta Kappa is an international professional fraternity for men and women in education. The membership is composed of recognized leaders in the profession and graduate students in education whose leadership potential has been identified. Members include classroom teachers, school administrators, college and University professors, and educational specialists of many types. In Phi Delta Kappa, they find a fellowship based on common interests and ideas devoted to the promotion of free public education. Membership is by chapter invitation.

Phi Kappa Phi. Phi Kappa Phi, the first national scholastic society to recognize superior scholarship in all fields of study, was established in 1897. The WSU chapter was founded in 1919. Students from all disciplines within the University are eligible for membership. Candidates are selected from the upper 10 percent of the senior class and the top 5 percent of the junior class each year. Graduate students are also eligible for membership.

Phi Sigma Iota. Phi Sigma Iota was founded in 1922 to recognize outstanding ability and high standards of excellence in the field of foreign languages. It is an international society, and, as such, promotes international communication and understanding. Candidates are selected from undergraduates majoring or minoring in a foreign language who maintain at least a 3.0 gpa. Graduate students are also eligible for membership.

Student Government

Undergraduate students at Washington State University are represented by 18 elected representatives who serve on the Associated Students of Washington State University (ASWSU) Senate. ASWSU is interested in a wide range of issues relating to the student’s life at WSU and is led by the student body president and vice president. The senate is directly involved in the allocation of ASWSU funds for programming and the establishment of operating procedures. Through the senate, ASWSU has developed a number of student committees and programs in the areas of education, entertainment, and recreation.

Graduate and professional students are members of the Graduate and Professional Students Association (GPSA). Five members of the GPSA represent their constituents on the Faculty Senate.

Student Publications

Student publications provide opportunities for students to express themselves, to serve the University community, and to gain experience in the production of a variety of printed self-supporting publications. The goal of each student publication is to provide information for students, staff, faculty, alumni, and other readers interested in Washington State University.

The Daily Evergreen is issued five times per week on campus during the nine months of the regular academic year. The Summer Evergreen is issued twice a week during summer session.

The Chinook is the University yearbook, issued each August.

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Through on-campus interviews, students can interview for internship and permanent employment with employers who recruit at WSU. Students registered with Career Services may also take advantage of the resume referral service to access employers who are interested in WSU students but not planning to come to campus. Career Services also maintains extensive current job and internship listings in partnership with MonsterTRAK Corporation. To access job and internship listings, register with us, and check services and upcoming events, visit our Web site.

Career Services offers placement/credential file services. Primarily used by education graduates or students applying to graduate or professional schools, placement/credential files hold letters of recommendation.

WSU Children’s Center
509-335-8847

WSU Children’s Center offers part or full-time child care and early education for children of WSU students, staff, and faculty. The Center is accredited by the National Academy for Early Childhood Programs, and is designed to meet child care needs of parents while providing intellectual, social, emotional, and physical development opportunities for children. Activities vary from quiet to active, group to individual, structured to unstructured. Children are grouped developmentally by age. Breakfast, lunch, and snacks are provided. The Center is licensed by the Washington Department of Social and Health Services for one hundred and seventy one children. It is open year round and hours of operation are Monday to Friday from 7:30 a.m. to 5:30 p.m.

Evening child care is also available to student, staff, and faculty families regardless of whether or not the child attends the day time program. Evening care operates during the academic year with hours of operation Monday to Thursday from 5:30-9:30 p.m.

The Center is also available to students for observation and participation for classes. Work-study jobs are also available.

Counseling and Testing Services

Lighty Building Room 280
www.counsel.wsu.edu
Counseling: 509-335-4511
Testing: 509-335-1744

Counseling Services offers psychological counseling and consultation to WSU-Pullman students. Professionally trained counselors are available to provide confidential assistance to students with personal, social, and academic concerns. Groups and workshops are offered to help students with personal development and to cope with such issues as stress, depression, social anxiety, and substance abuse. Crisis services, including the Sexual Assault Response Program, and consultation are available on a 24-hour basis. Call 509-335-4511 or stop by 280 Lighty for appointments or information.

Testing Services provides the University with a comprehensive testing program. National, state, and personal testing is available by appointment at 509-335-1744.

The Disability Resource Center

Administration Annex, Room 205
509-335-1566
www.wsu.edu/~drc

The Disability Resource Center (DRC) coordinates accommodations for students with disabilities in academic programs. Accommodations may include modified test taking, alternate format textbooks, sign language interpreters, and accessible transportation. Services available include all appropriate accommodations that provide equal access, alternative testing environments, the use of adaptive equipment, and referrals.

The center provides disability awareness training for WSU faculty, staff, and students. The center works cooperatively with all University programs to meet the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. The DRC promotes and encourages self-advocacy for students with disabilities.
Educational Telecommunications and Technology
www.ett.wsu.edu

Educational Telecommunications and Technology (ETT) is responsible for public broadcasting, interactive video services, Web-based audio and video applications, direct support of academic classrooms, and other telecommunications services. ETT traces its history back to a Morse code radio transmitter built by the mechanical engineering faculty more than 90 years ago. Edward R. Morrow first used a microphone at KWSC in the late 1920s. Televisión was demonstrated on the campus in 1939. WSU became one of the first universities to use interactive video instruction in 1980 and now operates one of the two or three largest such systems in the country.

Broadcasting: WSU operates 13 NPR-member radio stations and two PBS-member television stations serving significant audiences in Washington, Idaho, Oregon, and (radio only) British Columbia.

The public radio stations operate as Northwest Public Radio, eight of them as a “NPR and Classical Music” network and five as a “NPR News” network. All stations except KWSU(AM) operate 24-hour services. Both networks can also be heard on the Web at www.nwpr.org. Northwest Public Radio has studios in Pullman (main), Bellingham, Moscow, and Richland.

WSU has separate PBS memberships for its stations in the Tri-Cities and Pullman. KTNW, Ch. 31, Richland, has a full PBS membership and runs the main PBS program schedule. KWSU-TV, Ch. 10, Pullman, runs a selective mix of PBS programming and other educational programming. There are studios in Pullman (main) and Richland. KTNW also offers a digital signal of its service on Channel 38. This division also provides a substantial level of videostreaming services for the WSU community and operates the K-20 Education Network Eastern Washington satellite teleport. More information on WSU’s public television services are found at www.kwsu.org.

WHETS: The Washington Higher Education Telecommunication System (WHETS), www.whets.wsu.edu, operates interactive video classrooms statewide, interconnected with telecommunications facilities provided by the Washington K-20 Education Network. It also has dial-up ISDN access to most public universities, community colleges, or school districts in the state as well as out-of-state educational facilities and has Internet-based videoconferencing capabilities as well. WHETS was originally built to interconnect WSU’s campuses and courses may originate from all sites.

WHETS provides about 14,000 hours per year of usage, 90% of it for classes and the remainder for meetings, involving about 15,000 participants. There are nearly 8,000 enrollments and about 800 average annual FTE students involved in 290 WHETS courses.

Instructional Support Services: Instructional Support Services (ISS) provides high-quality, direct support of academic programs scheduled in WSU’s General University Classrooms by the Registrar’s Office. ISS has several units that provide academic support: Classroom Services, Media Equipment Checkout, In House self-service editing, design and planning for new and remodeled classrooms, and technical support. ISS provides these services to any catalog course. A tour of classrooms and ISS services is available at www.iss.wsu.edu.

Gay, Lesbian, Bisexual, and Allies Program and Center
Compton Union Building, Room B19A
509-335-6388
www.glba.wsu.edu

The WSU Gay, Lesbian, Bisexual, and Allies Program and Center educates, supports, and advocates for gay, lesbian, and bisexual faculty, staff, and students and their allies, challenging intolerance and discrimination and working to create equal access, opportunity, and inclusion at every level of the institution. The GLBA Program offers educational programming and presentations for classes, organizations, and living groups. The program actively supports research and curricular developments that integrate GLBT-related scholarship in the University. The Center’s library includes books, magazines, videos, and newspapers. The program provides a broad spectrum of referrals and information for the campus community, and a lounge that serves as a gathering space, meeting room, and study area.

Health and Wellness Services
On campus at 1125 NE Washington Ave.
509-335-3575
www.hws.wsu.edu

Medical Clinic
The fully accredited clinic provides primary health care to students. Every full-time student pays a fee with tuition that provides access to services that either require no additional payment at the time of service or are available at a reduced cost.

No Additional Cost Services:
- Unlimited appointments with board certified physicians and health care professionals
- 24-hour telephone nurse service
- Urgent care access
- Mental health services
- Women's clinic services
- HIV counseling & testing
- Nutrition counseling

Reduced Cost Services:
- Immunizations
- Massage therapy
- Emergency contraception
- Variety of birth control pills
- Medical and orthopedic supplies
- Variety of laboratory services

Located across Stadium Way from Stephenson Complex on the south end of campus, the clinic is open Monday through Friday with urgent care hours available on Saturday. Emergency care is available at Pullman Regional Hospital on Bishop Boulevard or call 911.

Pharmacy 509-335-5742

The full-service pharmacy is located inside the medical clinic and is open Monday through Friday.

Health Promotion 509-335-5759

The Health Promotion unit researches and provides education on health topics and lifestyle choices that are relevant to students. The HP unit is located in room 305B of the Administration Annex Building.

The Center for Human Rights
French Administration Building, Room 225
509-335-8288
www.chr.wsu.edu

The Center for Human Rights (CHR) seeks to integrate principles of equal employment opportunity, affirmative action, and fair and equitable treatment of all Washington State University (WSU) constituents into all academic and employment activities and practices throughout WSU. To meet that objective, CHR (1) provides leadership by enhancing the human rights education of all WSU students, faculty, and staff, and by developing innovative and interdisciplinary programs, trainings, and activities that will improve the effectiveness of human rights in the entire University community; (2) seeks to ensure that all WSU employment and recruitment practices comply with state and federal equal employment opportunity and affirmative action mandates; (3) assesses, develops, and implements WSU’s affirmative action plan in compliance with state and federal regulations; (4) reviews and investigates all complaints of discrimination and sexual harassment, and advises faculty, staff, and students on appropriate management of such issues; (5) aims to enhance WSU’s academic and organizational effectiveness through proactive assessment of workplace and classroom climate issues, development and implementation of action plans, and climate monitoring; and (6) maintains a library of equal employment opportunity, affirmative action, human rights, discrimination, and sexual harassment information and resources. CHR works closely with professionals in the fields of law, human resources, and conflict resolution to address individual and University concerns, and acts as an information resource for state and federal agencies.
Information Technology Services (ITS)
ITS Graphics, PhoneDesk, and Administrative Accounts; Student Computing Services (SCS); Telecommunication Services

ITS Graphics

Information Technology Building, Room 2043
509-335-7586
ITGraphics@wsu.edu
www.wsu.edu/graphics

ITS Graphics provides centralized access to color printing and design services, including posters, photo quality prints, and 600 dpi color laser prints and overheads. Scanning services provide digital files from prints, slides, and negatives. ITS Graphics also provides CD-ROM burning and duplication of both small and bulk runs. Housing WSU’s only walk-in do-it-yourself 35mm studio, copy stand, and duplicator for the production of color slides, ITS Graphics is an ideal solution for presentation needs.

ITS PhoneDesk and Administrative Accounts

Information Technology Building 2088
509 335-3663
phonedesk@wsu.edu

The PhoneDesk provides telephone service and voice mail to all University residence halls, Yakama apartments, and administrative offices. Telephone troubleshooting and repair service is also available.

- **Residence Halls:** All residence halls phones come with an easy to use, quality voice mail system and a data connection. Voice mailboxes are created, modified, and deleted at our office in addition to troubleshooting problems with voice mail passwords, greetings, and set up. Long distance calls must be paid by a calling card, prepaid phone card, etc. Students may obtain telephone statements which include monthly and/or long distance charges via the Internet at: infotech.wsu.edu/communications/vermark/VL_ViewStudentBillingMainHTM.asp
- **Yakama Apartments:** Yakama apartments are wired directly to WSU’s telephone switch and service is provided by WSU. Ethernet, providing high speed, uninterrupted data communications is also an option. A contract must be completed by the student in our office for phone, voice mail, and/or ethernet service. Phone instruments must be supplied by the student. Statements may be found at the URL above.
- **Other University Apartments:** WSU does not provide phone or data service in the WSU owned apartments. Residents are required to contact Verizon directly (800-483-4100). With Verizon, a resident has their choice of long distance carrier and to connect to that carrier using the carrier-provided toll free number. Long distance calls may not be billed back to the phone. Each room is also provided with a standard 10MB data connection that provides high speed access to WSU data services and the Internet, for each of the residents in the room.
- **Yakama Apartments:** The Yakama apartments are wired directly to WSU’s telephone switch and must use WSU services. The phones come with the option of voice mail service. Occupants have the option to acquire long distance services from their favorite long distance carrier and to connect to that carrier using the carrier-provided toll free number or have direct dial long distance. The standard offering in the Yakama apartments is analog and each resident is responsible for providing their own telephone instrument. Each apartment is provided with an optional 10MB data connection that provides high speed access to WSU data services and the Internet.
- **Other University Apartments:** WSU does not provide phone or data service in the WSU owned apartments (other than Yakama as stated above). Residents are asked to contact Verizon for phone service and a local internet service provider for data service. First Step Research also provides wireless data service to most of the WSU apartments and can be contacted for availability.

The Office of Multicultural Student Services

CUB 51
509-335-7852
www.wsu.edu/multicultural

The Office of Multicultural Student Services offers culturally relevant services and programs to support the successful transition, persistence, achievement, and graduation of multicultural students attending Washington State University. Other goals are to expand cultural awareness, to celebrate our differences and similarities, and to heighten the appreciation of cultural and racial diversity within the University and Pullman communities.

The unit is comprised of an Administrative area and Retention Services, including four multicultural student centers (African American, Asian American and Pacific Islander, Chicano/o Latina/o, and Native American) and the Academic Enrichment Center.

Each Center has a retention counselor, a half-time program assistant, a graduate assistant, and a group of student mentors and interns. The retention counselors serve as academic advisors, advocate for students, assist in problem solving, direct and develop programs, make referrals to other departments and services on campus, and provide information on scholarships, internships, careers, and graduate programs. These student centers offer a number of services such as social support, a study area, and a gathering place for student organizations.

The Academic Enrichment Center offers free access to a computer lab, tutoring services, and workshop series to support students’ academic goals.
Museums and Collections

The Museum of Anthropology
College Hall, Room 110
509-335-3936
libarts.wsu.edu/anthro

The museum of Anthropology is one of the major repositories for archaeologi- cal collections in the Northwest. Most of these collections are from federal and state lands in eastern Washington and the Cedar Mesa Region of Utah. The collections represent important research and teaching resources for WSU as well as others. The collections are also important to the local American Indian tribes. These collections are maintained under partnership agreements with a number of federal agencies and are integral to the teaching, research, and service functions of WSU’s Department of Anthropology. The museum also has a small, but important, collection of ethnographic materials from around the world. There is an exhibit area on the first floor of College Hall. The permanent exhibits explore human evolution, biological diversity, and the prehistoric people of the lower Snake River region. Different short-term and traveling exhibits focusing on special topics are hosted each year. The exhibit area is open 9 am to 4 pm every day that classes are in session. Group tours may be scheduled two weeks in advance by calling. Individuals interested in working with the research collections should call 509-335-4314.

The Museum of Art
Fine Arts, Room 6077
509-335-1910
www.wsu.edu/artmuse

The Museum of Art was established in 1974 around a core collection of American paintings assembled by former WSU President E. O. Holland and former WSU Regent Charles Orton. Dedicated to serving the educational purposes of WSU and the people of Washington, the museum presents changing exhibitions ranging from fine arts and fine craft to architecture and design. Exhibitions originated by the museum staff have toured the nation. The museum also offers a wide variety of outreach programs including docent tours, symposia, films, and other special events.

The museum’s collection of American nineteenth- and twentieth-century paintings, drawings, and prints has grown in the past years through donations and important gifts from collectors and alumni in the Northwest. Aspects of this permanent collection are seen in special exhibitions throughout the year.

The exhibition gallery of the Museum of Art is open and free to the public seven days a week from September through July. The gallery is closed for University holidays and in order to install new exhibitions. For more information on hours and exhibitions, call 509-335-1910. Docent tours for groups are available with advance reservation and free of charge. An active Friends of the Museum association supports museum programs through fundraising events, memberships, and volunteer work.

Conner Museum
Abelson Hall, Room 101
509-335-3515
www.sci.wsu.edu/cm

The Charles R. Conner Museum, located on the first floor of Abelson Hall, exhibits fishes, amphibians, reptiles, a dinosaur skeleton, and several hundred mounted birds and mammals, including deer, antelope, mountain sheep, mountain goat, moose, caribou, cougar, and small species. The displays are open to the public from 8:00 a.m. to 5:00 p.m. every day except University holidays.

The museum also maintains a separate research collection of about 65,000 specimens of birds, mammals, reptiles, and amphibians, including skins, skeletons, specimens preserved in alcohol and formalin, and tissue samples. These collections are used for teaching and research in anatomy, systematics, evolution, biogeography, ecology, and conservation, and are loaned throughout the world for research purposes. The collection is located in Abelson Hall, Room 101, and is available to qualified workers.

Culver Memorial, Jacklin, and McCaw Geological collections

Webster Hall, Room 122
www.wsu.edu:8080/~geology

The Culver Memorial houses the Jacklin Petrified Wood Collection. This spectacular collection contains more than 2,000 cut and polished specimens of petrified wood from all major localities in the western United States. It is the largest display of its kind in the western United States. Included in the collection is a large selection of cut and polished agate, geodes, and dinosaur bone. In a darkroom to the left, the McCaw Collections of 150 beautiful specimens are displayed under different wavelengths of fluorescent light. In the foyer of the first floor of Webster Hall are additional specimens of the Jacklin Collection and the Culver Collection, which includes over 100 classic rock and mineral specimens from localities throughout the world, along with some vertebrate fossils.

All three collections may be viewed Monday through Friday, 8:00 a.m. to 5:00 p.m. Group tours may be arranged by calling the Department of Geology at 509-335-3009.

Drucker Collection
509-335-3823

The Minnie Barstow Drucker Memorial Collection of Oriental Art consists of oriental furniture, accessories, art, textiles, and costumes. The collection was given to the University in 1944 by the late Arthur Eilert Drucker in memory of his wife. The Chinese, Korean, and Japanese artifacts were collected during the years the Druckers made the Orient their home. The collection is currently in storage. Questions about it should be directed to the Department of Apparel, Merchandising, Design, and Textiles.

The Historic Textiles and Costume Collection
509-335-3823

The Historic Textiles and Costume Collection contains approximately 3,000 items of women’s, children’s, and men’s clothing and costume accessories from 1835 to the present, and quilts and woven coverlets. It also contains a number of ethnic textiles and costumes from around the world. The collection is maintained by the Department of Apparel, Merchandising, Design, and Textiles and is currently in storage pending new facilities.

James Entomological Collection

Food Science and Human Nutrition Building, Room 157
509-335-3394
entomology.wsu.edu

One of the largest insect collections in the Pacific Northwest, the Maurice T. James Collection houses over one million insect specimens and an extensive working library. Adult and immature stages of all insect groups and many related arthropods are represented with particular strengths in the flies, beetles, and butterflies. Primarily of regional significance, the collection also includes considerable material from the New World tropics, eastern North America, and Asia. The collection functions essentially as a research facility by providing specimens on loan to recognized scientists worldwide, by offering identification services to University extension entomologists, and by serving as a repository of type specimens and other materials. Public tours and interpretive presentations for groups can be arranged in advance by phone.

Jewett Observatory and University Planetarium
509-335-1698
astro.wsu.edu

The James Richard Jewett Observatory is the gift of Mr. and Mrs. George F. Jewett of Spokane and is named in honor of Mr. Jewett’s father, a former professor of ancient languages at Harvard University. The observatory houses a 12-inch refractor with a visual lens and a 25-foot revolving dome.

The University Planetarium is located in Sloan Hall, Room 231. Information about open house and group tours of either the observatory or the planetarium can be obtained by contacting the Department of Physics and Astronomy at 509-335-1698.
Mycological Herbarium
mycology.wsu.edu

The Mycological Herbarium of Washington State University is housed in, and maintained, by the Department of Plant Pathology, third floor, Johnson Hall. The herbarium was founded by Frederick D. Heald, the first chairman of the department, in 1915 and now contains more than 70,000 specimens of fungi. Included are representative materials of all the major groups, from the slime molds and true molds to the larger, fleshy mushrooms. The parasitic fungi of northwestern North America have been emphasized; however, through exchange and purchase, representative materials of all groups from all over the world have been incorporated. Loans are freely available to individuals associated with recognized botanical institutions anywhere in the world. Specialists wishing to utilize the facilities of the Mycological Herbarium are welcome and are asked only to inform the Department of Plant Pathology, 509-335-9541, of their desires in advance so that members of the department may be of maximum assistance to them.

Ownbey Herbarium
Heald Hall, Room G-9
509-335-3250
www.wsu.edu/~wsherb

The Marion Ownbey Herbarium is an internationally recognized resource for research, teaching, and service. The herbarium houses about 363,000 preserved plant specimens, primarily from the Pacific Northwest but including worldwide collections. In addition to native vascular plants and weeds, the herbarium contains mosses, liverworts, lichens, and special collections of seeds and cultivated plants. The herbarium is open daily to the public; call 509-335-3250 for hours. Staff provide assistance to persons wanting to identify and learn about plants. Facilities include a small reference library, reprint and slide collections, computers, and special botanical indices. Our Web site includes local plant lists and educational programs.

Smith Soil Monolith Collection
Johnson Hall Room 114
509-335-1859

The Henry W. Smith Soil Monolith Collection contains more than 150 preserved soil profiles, some as much as eight feet in length, representing soils from all of the geographic regions in the state of Washington and ten of the 12 soil orders in Soil Taxonomy. Soils that are particularly well represented in the collection are those of the Palouse region and those from eastern and central Washington that contain layers of volcanic ash from the many prehistoric and historic eruptions of volcanoes in the Cascade region. The collection is the work of Henry W. Smith, emeritus professor of soils at Washington State University. The soil monoliths constitute a very valuable resource for both teaching and research within the Department of Crop and Soil Sciences. The collection is located in Johnson Hall, Room 114, and may be viewed from an observation window any time the building is open. Persons or groups interested in touring the collection should contact Alan Busacca at 509-335-1859. Additional information about the Soil Science program can be viewed at css.wsu.edu/.

Worthman Veterinary Anatomy Teaching Museum
Wegner Hall, Room 270
509-335-5701

The Robert P. Worthman Veterinary Anatomy Teaching Museum features several hundred dried and skeletal preparations of large and small domestic animals. Veterinary students use the labeled, dissected specimens to supplement both basic and advanced anatomical studies. Freeze-dried specimens, demonstrating various surgical approaches used in veterinary medicine, are included in this collection. Additionally, selected specimens of birds and wild species are displayed.

The only one of its kind in the nation, this museum provides a unique learning environment. It is used extensively for teaching classes in anatomy, radiology, and surgery, and it serves as a valuable research tool for faculty, residents, and students.

The collection may be viewed from 8:00 a.m. to 5:00 p.m. Group tours may be arranged by calling 509-335-5701

Music and Theatre

Music Office:
Kimbrough Hall, Room 260
509-335-3898

Theatre Office:
Daggy Hall, Room 320
509-335-7447
libarts.wsu.edu/musicandtheatre

The School of Music and Theatre Arts (SMTA) presents a varied program of concerts, recitals, plays, workshops, and master classes each year. These presentations given by faculty, students, and visiting artists are listed on the “Arts on the Palouse” calendar and in a monthly calendar of events which is available on the SMTA Web site at libarts.wsu.edu/musicandtheatre or by calling 509-335-6525, the SMTA events line.

The Music Program, in addition to the presentations listed above, supports several performance organizations with enrollment open to all WSU students by audition. Students interested in continuing their musical experience through enrollment in one of the ensembles are encouraged to contact the Music Program. Theatre presents a widely varied year-round program offering many opportunities for participation in six major productions in Daggy Hall theatres as well as many experimental and student-directed productions. Interested students should contact the Theatre Program for information regarding any aspect of the program: performance, technical, or management. Auditions are open to all members of the University and community. Participating WSU students are required to be enrolled in Applied Theatre Studies.

The Ombudsman Office
Wilson Hall, Room 2
509-335-1195
www.wsu.edu/~ombuds

The Ombudsman Office is a neutral and independent resource designated by the University to receive and informally investigate complaints, grievances, and suggestions. The office seeks prompt, equitable, and reasonable solutions to personal and organizational problems and supplements rather than replaces other regular University appeal and grievance procedures. Students, faculty, and staff may contact the office for confidential information and assistance from 9:00-4:00.

Speech and Hearing Clinic
Daggy Hall, Room 133
509-335-1509
www.libarts.wsu.edu/speechhearing

The Speech and Hearing Clinic provides complete evaluative and rehabilitative services to students with speech, language, or hearing problems. Included are communication disorders involving articulation of speech sounds, stuttering, voice pitch and quality, and speech and language problems resulting from brain injury or neuromuscular disability. Students with auditory processing disorders and learning disabilities may receive special help at the clinic. Speechreading and auditory training, as well as evaluations for fitting of hearing aids and assistive listening devices, are conducted.
Student Advising and Learning Center (SALC)

Lighty Building, Room 260
509-335-6000, or 888-978-7252
www.salc.wsu.edu

The Student Advising and Learning Center provides students with responsive and timely services, programs, and academic advising prior to and after enrolling at the University, facilitating their enrollment, retention, academic success, and progress to graduation. Students with questions on academic programs, degree requirements, certification into majors, services available, or students in need of help with study skills or advising should call the Center. The Center faculty and staff are responsible for coordination of:

- Academic advising.
- The Freshman Seminar Program and Learning Communities.
- The Transfer Center and providing assistance to transfer students.
- Assistance with study skills.
- Tutoring in a wide range of subjects.
- Academic reinstatement.
- Washington Education Foundation/Achievers Scholars.
- National Student Exchange.

Students are assigned an advisor by the SALC upon entrance to the University. Students may also be referred to the SALC at any time by faculty members, counselors, and others for any of the services it provides.

Student Recreation Center

Student Recreation Center, Room 250
509-335-5753
www.urec.wsu.edu

The Student Recreation Center on the Pullman campus of Washington State University is primarily dedicated to serving the full range of indoor and outdoor recreational needs and interests of WSU students during their free time. The Center’s facilities and programs are designed and administered to deliver this service to all students regardless of physical ability and experience.

Drop-in, open-time recreation is the primary intended use of the center, which offers 160,000 square feet of state-of-the-art recreational and fitness equipment including a pool; spa with cascading waterfall; elevated 1/8-mile track; sport court for indoor soccer and roller hockey; volleyball, basketball, and badminton courts; racquetball/squash courts; free weight and cardio fitness training; indoor lounges with sitting areas, games, fireplace, outdoor sundeck, and other amenities.

The newest addition to the Student Recreation Center, the SRC Backyard, is available to fulfill any student's desire to get outdoors and play! The Backyard encompasses three full outdoor basketball courts and four sand volleyball courts, and is lighted so play is open into the evening. The SRC Backyard is located directly behind the Student Recreation Center, and equipment is available for checkout inside the building.

The Student Recreation Center is also a fully-accessible gathering place for students, enriching their social life and enhancing the sense of community and wellness at Washington State University. The Center provides areas throughout the facility where students can socialize whether or not they are engaged in recreational activities.

Students taking 7 credits or more are automatic members of the SRC through a fee paid with tuition. Students with fewer than 7 credits can purchase memberships online at urec.wsu.edu or at the SRC during operating hours.

Student Support Services TRiO Program

Lighty Building, Room 260
509-335-7324
www.sssp.wsu.edu

Student Support Services Program (SSS) at Washington State University is a federally funded college academic assistance TRiO program. The program is designed to provide comprehensive academic support services on a one-to-one basis, developed for a student's personal, academic, and social success. Services include: academic advising, college orientation, college success workshops, career/personal counseling, tutoring, mentoring, study skills training, financial aid assistance, technological support, scholarship opportunities, cultural enrichment activities, and referral services.

To be eligible a student must be a U.S. citizen or permanent resident, be enrolled or accepted for enrollment at WSU, and meet one or more of the following criteria:

- First generation college student (neither parent has received a baccalaureate degree);
- Student is from a historically limited income family (according to prescribed federal guidelines); or
- Student has a documented disability.

Students are accepted on a “first-come, first-serve basis.” All services are provided at no cost to participants. Interested students must submit a completed “Initial Information Form” to the SSS office located in Lighty 260, Student Advising and Learning Center (SALC).

Transfer Center

Lighty Building, Room 260
509-335-6000, or 888-978-7252
salc.wsu.edu/transfer

The Transfer Center serves transfer students in a variety of ways:

- Provides incoming transfer students with a clearly identified point of contact to begin the transfer process and ensure a smooth transition to WSU.
- Provides transfer students with responsive and timely programs, services, and academic advice prior to and after enrolling that facilitates their enrollment, retention, and progress to graduation.
- Connects transfer students with academic departments and other campus offices and resources.
- Provides preliminary academic advising for transfer students seeking admission to WSU.
- Assists transfer students in developing academic strategies to successfully achieve their academic goals.

Women's Resource Center

Wilson Hall, Room 8
509-335-6849
www.wsu.edu/~wrc

The Women’s Resource Center acts as an advocate for diversity by supporting the perspectives of women in institutional goal setting and programming. The purpose of the center is to facilitate a supportive and welcoming environment for women of all races, classes, ages, ethnic origins, and sexual orientations.

The Women’s Resource Center provides specialized programs and services which address the unique concerns and needs of women. The Women’s Transfer Program is coordinated by the center. Support services for women student organizations are provided, as well as individual referral services to University and community agencies.

For additional information, visit our Web site. The Women’s Resource Center is open from 8:00 a.m. to 5:00 p.m., Monday through Friday.
Educational Enhancement

Cooperative Courses with the University of Idaho
Cooperative courses between Washington State University and the University of Idaho provide enriched educational opportunities for students of both universities and allow better utilization of supporting resources such as libraries and laboratories. The sharing of faculty and facilities fosters the exchange of ideas and enhances academic ties between the two communities.

Approved cooperative courses are listed in the departmental section of this catalog and include the University of Idaho (UI) equivalent course prefix and number within the course description. Courses are identified as (1) cooperative course taught by UI, open to WSU students, (2) cooperative course taught by WSU, open to UI students, and (3) cooperative course taught jointly by WSU and UI.

Cooperative courses taught by the University of Idaho are footnoted with an “i” in the Time Schedule. WSU students desiring to enroll in cooperative courses taught by UI will register for the course at WSU but attend class at UI in accordance with the dates and times listed in the WSU Time Schedule. Students will follow the regular WSU registration procedure and will be charged according to the WSU fee structure. Upon completion of the course, the credit and grade will be recorded on the student’s official WSU transcript.

Extended University Services
Van Doren Hall, Room 106
509-335-5454
www.eus.wsu.edu

Extended University Services (EUS) is a multi-faceted organization that provides leadership for academic outreach at Washington State University. EUS collaborates with colleges and administrative units to develop and deliver high-quality academic, educational, and professional programs, to provide comprehensive support services for students and faculty, and to offer professional training and conference services to academically motivated adults throughout Washington and beyond. Visit our Web site at www.eus.wsu.edu.

Distance Degree Programs (DDP): DDP supports WSU colleges and departments in delivering bachelor’s and master’s degrees and professional certificates to adult learners in Washington State and throughout North America and the world by distance learning technologies. Staff work with faculty to develop distance courses and to support them during course delivery. A complete set of services is provided to students enrolled in distance courses, including admissions, financial aid, technical support, and advising. Call 1-800-222-4978 or visit our Web site at www.distance.wsu.edu for complete information about programs, courses, and services.

Conferences and Professional Programs (CAPPs): This division plans and conducts noncredit programs, including seminars, short courses, workshops, and professional conferences at sites throughout the state of Washington and beyond. CAPPs also manages the development and delivery of non-credit online certificate programs and training for individuals, businesses, and nonprofit organizations. Offices are located in Pullman and Puyallup. The division draws upon the instructional resources of the University and outside content experts to meet dynamic and varied professional continuing education and training needs. Clients include business and industrial firms, government agencies, schools, professional associations, and others interested in increasing their knowledge and professional competencies. Call 1-800-942-4978 or visit our Web site at www.capps.wsu.edu for information about available programs.

International Programs
Bryan Hall, Room 206
509-335-2541
www.ip.wsu.edu

International Programs (IP) at Washington State University has the overall responsibility for promoting, supporting, and coordinating the University’s international activities. As the land-grant institution for the state of Washington, internationalization of its curricula and programs is an established priority. Internationalization is the incorporation of appropriate international content, materials, activities, and understandings into the teaching, research, and public service/outreach programs to enhance their relevance in an increasingly interdependent world.

International Programs at WSU is organized into three programmatic areas to serve its University-wide responsibilities.

IP/Office of International Students and Scholars (OISS)
Bryan Hall, Room 108
509-335-4508

Assists international students and visiting faculty at WSU with the immigration requirements and academic and social adjustments necessary for a successful educational, research, and cultural experience at WSU.

IP/International Research & Development (IPR&D)
Bryan Hall, Room 206
509-335-2980
www.ip.wsu.edu

IPR&D has administrative responsibility for the establishment, facilitation, and coordination of University research, economic development, and inter-institutional projects in developing and industrialized countries.

IP/Intensive American Language Center (IALC)
McAllister Hall, Room 116
509-335-6675
ialc.wsu.edu

The Intensive American Language Center provides concentrated English language training for non-native speakers of English who are preparing for University studies or who seek to improve their English for professional or personal purposes. Classes meet four to five hours per day, five days per week for eight-week sessions. There are five eight-week sessions per year. Sessions run concurrently with WSU’s academic calendar. Thus, students who wish to enter WSU and who are otherwise eligible for admission can move directly to University studies upon successful completion of the Language Center curriculum.

The Language Center also offers English courses for non-native speakers who are enrolled at WSU and would like additional language support, and it provides international teaching assistant testing for the Graduate School.

The Language Center provides non-university credit classes in reading, speaking, pronunciation, composition, grammar, listening, various special interest courses, and Test of English as a Foreign Language (TOEFL) preparation. Advanced students concentrate on academic studies.
For Sophomores and Above and Transfer Students

to college life easier because there is a solid academic focus that is enhanced
study groups, and social networks. Freshman Focus makes the transition
the same floor in their residence halls. Students form classroom connections,
rolled in two General Education courses with other freshman students who live
335-6471.

WSU Writing Programs, Center for Undergraduate Education, Room 303, 509-335-5488.

opportunity to improve their ability to write in a student-centered group tutorial
of the research library, are also encouraged to enroll. Contact Library Instruction
edinary School may attend the Intensive American Language Center. Students may
enroll full- or part-time, depending on their visa status. The Language Center
also negotiates special courses or programs with domestic and foreign agencies
and departments on a contract basis. To apply or to obtain more information,
contact the Intensive American Language Center.

Learning Enrichment Opportunities

Several departments at Washington State University work closely together to of-
fer support to students as they develop their research and writing abilities—key
components of a WSU education. From the freshman to senior year, students
may take advantage of all or part of these learning enrichment courses and
services:

For Freshmen

Writing Tutorial—Engl 102, a one-credit course, offers students an opportunity
to improve their ability to write in a student-centered group tutorial setting. The
tutorial is usually connected to freshman writing courses. Contact WSU Writing Programs, Center for Undergraduate Education, Room 303, 509-335-6471.

The Freshman Seminar—Students who enroll in the two-credit Freshman Seminar through GenEd 104 participate in activities and projects that introduce
them to researching, writing, thinking, and using technologies at the college
level as they make the transition to the University. The seminar students are
also enrolled together in a general education requirement course, forming ad-
tional support within a learning community. Contact the Student Advising and Learning Center, Lighty Building Room 260, 509-335-7212, www.salc.wsu.
edu/freshman.

The Teniwe Program—Groups of students who participate in this program
enroll in several courses together and live in the same residence hall. Students in the Teniwe (Nez Perce for “talk”) Program are encouraged to discuss how they
learn, including their research and writing processes, and what they learn in the
courses they take together. Contact Department of Residence Life, McCarten
Administrative Suite, Streit-Perham Hall, 509-335-1227.

Freshman Focus —A new residential program where students are co-
enrolled in two General Education courses with other freshman students who live
on the same floor in their residence halls. Students form classroom connections,
instant study groups, and social networks. Freshman Focus makes the transition
to college life easier because there is a solid academic focus that is enhanced
by interaction of residence hall peers. Contact Student Advising and Learning Center, Lighty 260, 509-335-6000.

For All Students

The University Writing Center—Throughout their careers at WSU, students
may take advantage of the assistance of writing tutors in the Writing Center, Center for Undergraduate Education, Room 303, on a walk-in basis, as well as through an online Web site, owl.wsu.edu. Contact WSU Writing Programs, Center for Undergraduate Education, Room 303, 509-335-5488.

Peer Tutoring—Peer tutors are available to assist WSU students in a wide
range of courses. Students seeking tutoring for any subject pay a fee for one
to one and small group tutoring through the Student Advising and Learning Center. The SALC maintains a list of where students can obtain free tutoring
for particular subjects. Students should contact their instructors and/or TAs for
academic assistance. A variety of free learning strategies workshops are also available throughout the year. Contact the Student Advising and Learning Center, Lighty Building, Room 260, 509-335-9603.

Service Learning—Students in academic courses across the curriculum are provided with opportunities to learn through engagement in community-based service. Curricular and co-curricular service learning experiences such as child and youth mentoring and environmental restoration projects inform classroom learning, enhance civic awareness, promote personal growth, and foster skill development. Contact the Community Service Learning Center, Compton Union Building (CUB), Room B-19B, 509-335-7708, csclc@wsu.edu, csclc.wsu.edu.

Student Support Services Program (SSS)—SSS is a federally funded TRiO program that serves first-generation, low-income, and/or disabled stu-
dents. Services include: Academic/financial advising, workshops, counseling,
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ment activities, technical support, and referrals. Interested students should
Research Facilities

Laboratory for Atmospheric Research
www.ce.wsu.edu/LAR

The Laboratory for Atmospheric Research provides a recognized center for atmospheric research at Washington State University. The laboratory, which is administered through the Department of Civil and Environmental Engineering, provides students with graduate training in the atmospheric sciences. Students are encouraged to participate in the various grant-supported research projects of the laboratory. Since atmospheric research requires an interdisciplinary approach, both the faculty within the laboratory and those who work cooperatively on joint research programs have diverse disciplinary backgrounds.

Laboratory for Biotechnology and Bioanalysis
Fulmer Hall, Room 537
509-335-1174 or 509-335-8670

The Laboratory for Biotechnology and Bioanalysis (LBB) is a campus-wide research service center that provides a number of important analyses including DNA and protein sequencing. The goal of the LBB is to provide equipment and expertise for support of research that utilizes costly and state-of-the-art equipment in the disciplines of biology and chemistry. LBB-1, equipment and trained personnel are available for DNA array construction and analysis. LBB-2 is primarily set up for analysis of small molecules. Mass spectrometry for biological or synthetic agents is available through LBB-2. LBB is located in several rooms in Fulmer Hall.

Electron Microscopy Center
Abelson Hall, Room 133
509-335-3025

The Electron Microscopy Center (EMC) is a research and training facility for the study of biological and non-biological materials. The EMC provides electron microscopy and light microscopy equipment for observation and analysis of a diverse array of specimens. Students, faculty, and staff can access the EMC for formal and informal training, and for conducting research through flexible conditions designed to ensure success in acquiring and analyzing specimen images. The center offers courses in electron microscopy for graduate and undergraduate students each semester. The EMC maintains a TEM, STEM, SEM, confocal microscope, and various light microscopes. Three of the electron microscopes also have EDX analyzers for elemental analysis. All necessary ancillary equipment, computers for image processing and analysis, and three photographic darkrooms are also maintained for student and faculty use. The center provides project consultation and has a skilled staff capable of assisting students and faculty in a wide range of research projects. Faculty and students are welcome to visit the EMC located on the ground floor of Science Hall. Inquiries about services and courses offered or class tours of the facilities can be made by calling the EMC.

Environmental Research Center
Troy 305
509-335-8538

The Environmental Research Center is an all-University research unit. The center is the focal point for University development of interdisciplinary research on problems related to the environment. It provides an organizational and administrative structure to accommodate interdisciplinary environmental research projects which cut across departmental and college boundaries.

The center is closely integrated with the academic Program in Environmental Science and Regional Planning, and students are encouraged to participate in the research projects carried out through it. In order to stimulate an awareness of environmental problems and contributions the University can make in solving them, the center acts as an information source for faculty and students of the University and for citizens of the state. It also assists in securing financial support for research projects involving faculty and students and acts as a liaison unit for inter-university and other cooperative activities dealing with environmental matters.

The center provides some direct support for graduate students and has sponsored a number of conferences and seminars on regional environmental problems.

GeoAnalytical Laboratory
Webster Hall, Room 1228
509-335-1626
www.wsu.edu/~geology/Pages/Services/Geolab.html

The GeoAnalytical Laboratory is a service center within the Geology Department which provides analytical services, primarily for geological research, but also for research in inorganic chemistry and applications of many fields in material and environmental sciences. The laboratory comprises an automated Cameca electron microprobe for quantitative elemental micro-analysis and element mapping; a Siemens X-ray powder diffractometer for phase identification; an automated ThermoElectron ARL X-ray fluorescence spectrometer and HP inductively coupled plasma mass spectrometer (ICP-MS) for major, trace, and rare earth elemental analysis; and a Finnigan-MAT gas source mass spectrometer for oxygen, carbon, and hydrogen isotope ratio determinations. Recent additions include a high resolution Thermo-Finnigan ICP-MS for ultra low trace element analysis, a multicollector Thermo-Finnigan ICP-MS for radiogenic and stable isotope ratios and a clean room for sample preparation. Most of our services and equipment are available to other departments and other institutions for a reasonable fee.

Information Technology
www.wsu.edu/IT

Information Technology Services (ITServices) is a central organization that provides voice, data, and video communications for WSU students, faculty, and staff on the Pullman and urban campuses. These services are a crucial part of WSU's research and instructional environment.

ITServices provides a gigabit data backbone connecting academic, administrative, and residential housing on the Pullman campus. Internet and Internet2 access is achieved over an Or3 connection on the Washington State K-20 Educational Telecommunications Network. This network also connects WSU's urban campuses and research centers throughout the state. Continuing efforts include enhancing the capabilities of Washington State University networks through the use of new technologies including wireless access, video conferencing, and increasing network capacity to meet growing demands.

The distributed digital telephone switch network provides telephone and voice mail services for WSU's Pullman and urban campuses and some research centers around the state.

The IMPACT Center
Hulbert Hall, Room 123
509-335-6653
impact.wsu.edu

IMPACT is the acronym for the International Marketing Program for Agricultural Commodities and Trade established in the College of Agricultural, Human, and Natural Resource Sciences in June 1985.

The IMPACT Center funds interdisciplinary research, extension, and teaching to assist the state in exporting its agricultural products. Its major thrusts...
are in uncovering marketing opportunities, developing strategies to exploit those opportunities, solving economic and technical impediments to current agricultural exports, and finding alternative products or processes with export market potential.

The IMPACT Center receives its funding from state, federal, and private sources. Its programs are closely integrated with those of the Department of Agriculture and of WSU’s College of Agricultural, Human, and Natural Resource Sciences. In carrying out its mission, the IMPACT Center funds faculty and staff for both long- and short-term assignments. Personnel are housed in the appropriate academic department or outlying station. While the IMPACT Center gives assistance to departments in providing graduate-level courses in international agricultural marketing, it does not offer graduate programs.

Nuclear Radiation Center
509-335-8641
www.wsu.edu/~nrcc

The Nuclear Radiation Center (NRC) is an education, research, and service facility supporting the entire University. The center has a one-megawatt TRIGA reactor, a cobalt-60 irradiation unit, and numerous state-of-the-art radiation detectors and counting systems.

The center supports undergraduate and graduate education, with both facilities and instruction. Graduate students in engineering, physics, chemistry, geology, anthropology, food science, animal science, veterinary science, and other fields may conduct their thesis research at the NRC.

Trace element analysis using neutron activation analysis (NAA) is routinely available at the center. This technique is applicable to analytical chemistry, geology, material science, biomedical research, environmental science, physics, and other areas. Consultation is available to investigators with elemental analysis needs.

Radiation detection and analysis is practical for many radionuclides. Gamma ray spectroscopy, using Ge(Li), LEP or NaI(Tl) detector systems, and isotopic identification are available. Liquid scintillation and alpha-beta counting equipment is available as well.

Neutron irradiation service is provided by the NRC’s one-megawatt fission reactor. The reactor also supports other research projects. Gamma irradiation services are offered on the cobalt-60 unit.

The NRC provides laboratory space for radiochemistry researchers and other projects and programs. A wide range of services and capabilities make the Nuclear Radiation Center ideally suited to support elemental analysis or radiation-related studies at Washington State University. Tours of the reactor facility can be arranged by calling 509-335-8641.

Social and Economic Sciences Research Center (SESRC)
Wilson Hall, Room 133
509-335-1511
www.sesrc.wsu.edu

The Social and Economic Sciences Research Center (SESRC) provides high quality social, economic, and behavioral science research services to the students, faculty, and administration at WSU, and the citizens and agencies of the state.

The SESRC has three main goals: (1) to conduct research in the social, behavioral, and economic sciences that is responsive to the needs and concerns of the state, region, and local communities; (2) to provide telephone, mail, internet, and face-to-face survey capabilities to University faculty for conducting research; and (3) to provide research training for both undergraduate and graduate students in the social sciences.

The SESRC research facilities include a networked telephone interviewing laboratory of 60 computers with modems, interview stations with telephone headsets, computer assisted telephone interview (CATI) software, and printers, scanners, and other mail questionnaire and data entry processing equipment. This facility is located at the WSU Research Park and is staffed by over 150 students and non-student interviewers, several supervisors, research managers, and programmers. Another 20 interview stations are located in Wilson Hall and are used for cognitive interviewing, development of internet questionnaires, and other research activities.

The SESRC professional staff provide assistance in all phases of survey research, and have experience and capabilities for conducting telephone, mail, e-mail, Internet, and face-to-face interview surveys, focus groups, data entry of written questionnaires, statistical analysis of survey data, and preparation of research proposals and project reports. Faculty and students from WSU’s social, behavioral, economic, and educational disciplines participate in SESRC projects. Collaboration with other research centers and departments at WSU lends a strong interdisciplinary emphasis to the work of the SESRC.

State of Washington Water Research Center
Albrook Lab, Room 202B
509-335-5531
www.swwrc.wsu.edu

Federal legislation establishing the State of Washington Water Research Center, along with the 54 other water research centers and institutes throughout the United States and territories, outlines three major directives:

1. support of research in multi-disciplinary and interdisciplinary water-related studies;
2. assistance in the education and training of undergraduate and graduate students toward degrees in water-related professions through active participation in research projects; and
3. dissemination of results of research and other current information on water-related issues through the distribution of technical and popular publications and through the sponsorship of conferences, seminars, workshops, and other outreach activities.

The State of Washington Water Research Center was established in 1964 as a joint agency of Washington State University and the University of Washington with the directorate located in Pullman, at the land-grant University. Programs and policies of the center are determined by the director with the assistance of program directors and the Joint Scientific Committee, composed of faculty members from the state’s universities and representatives from state and federal agencies. Washington State University, the University of Washington, The Evergreen State College, and the three regional universities have all participated in the center’s program through specific research projects, making the center a truly statewide activity.

The center has fostered extensive research on Washington’s water-related problems. Much of this research is also of regional and/or national significance. To date, nearly 450 projects have been funded through the center and completed with technical reports and journal articles distributed to the professional community and appropriate agencies. Over 1,000 undergraduate and graduate students have been assisted in meeting their educational goals through their work on these projects to become the water scientists and engineers of today and tomorrow.

The research projects in the center, supported by the federal cooperative program and other grants, may be basic or applied in nature, depending upon the interests of the sponsor. The center does not maintain a regular scientific or engineering staff, but instead coordinates team activities and provides funds to individual investigators through departments and research units of the state’s universities.

Further information regarding the program may be obtained by writing the Director, State of Washington Water Research Center, Washington State University, PO Box 643002, Pullman, WA 99164-3002, or by calling 509-335-5531.

WSU Center for NMR Spectroscopy
Fulmer Hall, Room B3
509-335-3005
nmr.chem.wsu.edu

The WSU Center for NMR Spectroscopy is a central University facility, currently with four NMR spectrometers: a Varian Mercury 300 routine liquids NMR spectrometer, a Bruker Avance DRX-400 solid-state NMR spectrometer, a Varian Inova gradient liquids NMR spectrometer, and a Bruker Avance DRX-600 liquid-state and solid-state NMR spectrometer. The Center is managed by a Ph.D.-level facility manager, whose specialist knowledge is in liquids NMR, and an assistant manager, whose specialist knowledge is in solids NMR. Electronics support is provided by the College of Sciences Technical Services. The Center also has several Silicon Graphics, Sun, and Linux workstations for off-line data analysis.
Admission

Lighty Building, Room 370
888-468-6978 or 509-335-5586
www.wsu.edu/future-students/admission/

General Information

Admission to Washington State University is granted without regard to race/ethnicity, color, creed, religion, national origin, gender, sexual orientation, age, marital status, disabled veteran or Vietnam-era veteran status, disability, or use of a service animal. Admission to the University is granted to eligible applicants prior to registration but not after the tenth day of classes for each semester.

The following information relates to admission of new students only. It is not applicable to students previously enrolled in Washington State University during the regular school year.

It is the policy of Washington State University to admit all applicants if the total evidence (e.g., academic records, test results, recommendations, and interviews) indicates a reasonable probability of success. The total number of new students admitted for any one semester or in any specific department or program will be based on the number of students for whom facilities can be made available.

Applications are available at www.wsu.edu/future-students/admission/apply.html, or from the Office of Admissions, PO Box 641067, Pullman, WA 99164-1067.

Any freshman applicant planning to compete in intercollegiate athletics must submit scores on the College Board Scholastic Aptitude Test (SAT) to meet National Collegiate Athletic Association (NCAA) regulations.

The University reserves a limited number of spaces in the incoming class for students with exceptional talent or potential, as determined by the departmental/college representative making the recommendation. Departmental representatives should contact the Director of Admissions for information.

Students who fail to meet the published admission requirements may contact the Office of Admissions for further information. Exceptions to the admission requirements may be made only by the Admissions Subcommittee.

Retention of Students

The grade point average for freshmen entering from high school in fall semester 2004 was 3.46. Of the 3,108 freshmen who entered in fall semester 2004, 2,965 were enrolled in spring 2005.

Freshman Admission Requirements

To be considered for admission to Washington State University, an applicant must be a high school graduate or its equivalent, or have completed a more advanced credential from an accredited college or University—e.g., an associate of arts or associate of science degree.

Freshman applicants will be considered for admission on the basis of their academic records, which include transcripts, test scores (SAT or ACT), a personal statement, and other relevant materials as requested. Beginning with the freshman applicants for fall 2006, the writing component for either the Scholastic Aptitude Test or American College Test will be required for those students graduating from high school during the 2005-2006 school year. The high school transcript must show completion of no less than the following course work in grades 9-12:

English: Four years (of which must be composition and literature).
Mathematics: Three years college preparatory mathematics (one year of geometry and two years of algebra including an introductory component of trigonometry). Additional mathematics is strongly recommended.
Science: Two years (including at least one year of laboratory science: biology, chemistry, or physics).
Social Science: Three years (including at least one year of history).
Foreign Language: Two years of a single foreign language (or approved sign language).
Fine Arts: One year of fine, visual, or performing arts, or one additional year of academic elective.

Beginning with the freshman applicants for fall semester 2008, an algebra-based lab science and four years of college preparatory mathematics will be required, pending approval by the Higher Education Coordinating Board.

It is strongly recommended for students planning to major in science or science-related fields to complete at least three years of science (including at least two years of laboratory science).

Applicants who have not graduated from high school at the time of application must maintain a satisfactory record, complete all required courses specified for admission to WSU, and provide evidence of graduation, higher credential such as an associate of arts or associate of science degree, or completion of the GED prior to enrollment.

Freshman applicants over 25 years of age should contact the Office of Admissions concerning requirements for re-entry students.

Graduates of unaccredited high schools should write to the Director of Admissions for further information.

Transfer Admission Requirements

Transfer applicants who have successfully completed a transferable associate’s degree from a regionally accredited post-secondary institution at the time of application will be admitted as space allows.

Transfer applicants without a transferable associate’s degree, but with at least 27 semester (40 quarter) hours of transferable college credit from a regionally accredited post-secondary institution normally will be admitted as space allows provided they have at least a 2.5 cumulative grade point average. Applicants with fewer than 27 semester (40 quarter) hours of transferable credit will be considered for admission if they also meet the freshman admission requirements.

For fall semester, qualified students who apply with a complete application packet by January 31 will be offered admission until the class is filled. For spring semester, qualified students who apply by October 1 will be offered admission on a space available basis until the class is filled.

A complete application includes the application form, an official transcript provided in a sealed envelope, SAT or ACT score report from the testing agency, personal statement, and nonrefundable application fee. Students may apply online at www.wsu.edu/future-students/admission/apply.html.

Students who have applied to the University may apply to WSU’s Honors College if they have shown unusual scholastic ability and intellectual achievement in high school. Application materials may be obtained from the Honors College Web site at www.wsu.edu/honors. Transfer and international students may apply to the Honors College on an individual basis after eligibility has been determined. Questions should be directed to the University Honors College, PO Box 642012, Pullman, WA 99164-2012, or call 509-335-4505.

Transfer Credit Policy

College-level work completed at institutions which are regionally accredited is given appropriate credit upon transfer to Washington State University.

The maximum transfer credit allowed from accredited two-year community or junior colleges, or from CLEP, AP, IB, or military credit shall be 73 semester (110 quarter) hours toward a baccalaureate degree irrespective of when those credits were earned. The maximum allowable credit toward a four-year degree from a four-year institution or from a combination of all institutions shall be 90 semester (135 quarter) hours of credit, of which no more than 73 semester credits may be lower division hours of credit. For a five-year degree program the maximum credit allowed for transfer from a four-year institution or a com-
Admission Requirements at another regionally accredited Washington baccalaureate institution to students who have completed all of the lower-division General Education Requirements at another regionally accredited Washington baccalaureate institution, provided the sending institution so certifies.

Associate Degree Transfer

Students who have completed a Direct Transfer Associate (A.A.) degree at a Washington community college, including a course pattern which approximates the General Education Requirements (GERs) for graduation from Washington State University, as determined by the Office of Admissions at Washington State University, will be considered to have fulfilled the lower-division General Education Requirements for graduation. The Associate of Arts—Oregon transfer degree from an Oregon community college guarantees completion of the lower-division General Education Requirements, but does not guarantee junior standing. Certain approved associate’s degrees from Arizona, California, Hawaii, and Idaho may also be considered to have fulfilled the lower division GERs for graduation, but do not guarantee junior status (60 semester credits). For details on specific degrees consult the Office of Admissions. In all cases, students will also be required to meet the upper-division General Education Requirements as well as any departmental and college graduation requirements.

Students who have completed the Associate of Science Transfer Degree (A.S.T.) from a Washington community college will receive the same priority consideration for admission to the baccalaureate institution as they would for completing the direct transfer associate degree and will be given junior status. Additional general education and college graduation requirements, as required by Washington State University, must be met prior to the completion of a baccalaureate degree. Students are responsible for checking specific major requirements in the year prior to transferring.

Washington State University recognizes academic credits earned at other collegiate institutions which are essentially equivalent in academic level and content to work offered at WSU. Toward this end, the University subscribes to the “Policy on Inter-College Transfer and Articulation Among Washington Public Colleges and Universities” endorsed by the public colleges and universities of Washington and the State Board for Community and Technical Colleges and published by the Higher Education Coordinating Board. The policy deals with the rights and responsibilities of students and the review and appeal process in transfer credit disputes.

Students who have completed at least 70 quarter credit hours toward completion of an approved A.A. degree may complete the Direct Transfer Associate (A.A.) degrees from a Washington or Oregon two-year college after their initial enrollment at WSU.

Transfer students are encouraged to contact the Office of Admissions, 888-468-6978 or 509-335-5586, with any questions regarding the transfer of credit or access transfer articulation information at www.wsu.edu/advise/transfer-courses or www.wsu.edu/transfer/TRACS, or the Transfer Center at 509-335-5171.

Adult Student Admission

Washington State University recognizes that students who have been away from the classroom for extended periods of time may have special needs. Therefore, in accordance with the policies set forth by the Higher Education Coordinating Board, applications from students who are 25 years of age or over may be considered for admission on the basis of alternative criteria. Students are encouraged to contact the Office of Admissions for details.

Early Admission

Students wishing to gain early admission (prior to graduation from high school) to Washington State University need to submit the following: 1. A written statement giving the reason(s) early admission is being requested; 2. An official transcript showing all high school work completed to date. A minimum grade point average of 3.5 is required. If the student has taken the G.E.D. prior to the expected date of high school graduation, a minimum score of 62 is required. Official high school transcripts showing completed work must also be submitted. Applicants must meet the minimum requirements for High School Core as required by Washington State University; 3. Official results from the Scholastic Achievement Test (SAT), or the American College Test (ACT); 4. At least two letters of recommendation, one from the principal or guidance counselor, and one from a teacher who knows the student’s academic capabilities. These letters should give specific reasons why the student would benefit more from attending WSU, rather than completing high school; 5. A letter of recommendation from the student’s parent or guardian supporting his or her application for early admission; and 6. Completion of WSU application and payment of application fee.

Admission to WSU Spokane, WSU Tri-Cities, and WSU Vancouver

The WSU Spokane, Tri-Cities, and Vancouver campuses offer a variety of undergraduate and graduate degree programs. All three campuses have graduate education; WSU Tri-Cities and WSU Vancouver also offer baccalaureate degrees.

WSU Tri-Cities and WSU Vancouver provide upper-division undergraduate education for individuals in those urban areas. Students need to complete their lower-division course work before enrolling at these campuses. In some instances, students are allowed to attend concurrently. Contact the campus directly for more information about this policy as well as specific admission requirements.

Academic programs offered and campus addresses are listed under “Spokane, Tri-Cities, and Vancouver Campuses” in this catalog. Applications may be obtained from each campus or at its Web site. A complete application includes the application form, official transcripts provided in a sealed envelope from each college or University attended showing work completed at the time of application, and the nonrefundable application fee. Applications will not be considered or processed after the tenth day of classes for any semester. Final and complete transcripts to date must be submitted prior to the student’s initial enrollment.

The policies regarding the transfer of credit are described within the Transfer Admission Requirements as explained above.

Former Students Returning (FSR) Not Enrolled the Previous Academic Semester

Students formerly enrolled at Washington State University and who have been absent for only one semester (excluding summer sessions) may enroll without reapplying for admission.

Students absent for more than one semester are required to submit a FSR Application prior to enrollment. Preference will be given to applications received by January 31 for fall semester and October 1 for spring semester. Applications submitted after the tenth day of classes will not be considered.

FSR applicants will be granted direct admission if they are in good academic standing. FSR applicants whose previous academic record at Washington State University is unsatisfactory will be required to follow established academic reinstatement procedures prior to admission.

FSR applicants who have attended other institutions since their last enrollment at Washington State University are required to submit an official transcript directly from each institution attended. Applicants are required to have at least a combined 2.0 (C) cumulative grade point average in transfer and WSU course work.

Apply at www.wsu.edu/future-students/admissions or contact the Office of Admissions for a FSR application.

International Student Admission Requirements

Washington State University encourages the application of qualified students from other nations to complement its cosmopolitan student community. Applicants must submit evidence of English proficiency (example: TOEFL or other recognized proficiency exam; see www.ip.wsu.edu/enroll/faq/index.html for list), evidence of adequate financial resources to meet the costs of the proposed study, an International Undergraduate Application for Admission along with application fee, and secondary and post-secondary transcripts of all completed course work. Please contact the Office of Admissions at 509-335-5586 or at www.wsu.edu/future-students/admissions for further information.
Whitman County High School Students Enrolling at Washington State University

For fall and spring semesters, local Whitman County high school students enroll through Running Start. For more information on the Running Start program, please contact the Registrar’s Office.

Limited Enrollment Programs

Since academic departments may establish additional requirements for admission or certification to specific programs, eligibility for admission to Washington State University does not ensure acceptance into any department or program as a certified major and degree candidate. Several academic programs, including but not necessarily limited to architecture, business administration, communication, computer science, construction management, economics, education, engineering, fine arts, hospitality business management, interior design, landscape architecture, mathematics, music, nursing, psychology, pharmacy, and veterinary medicine, are unable to accept all interested students. In these situations, and others which may arise in the future, the most highly qualified students will be selected up to the enrollment limits in the specific programs.

Students applying for admission to selective programs should contact the Office of Admissions regarding special requirements and application deadlines. For instance, applicants for veterinary medicine must apply by October 1; pharmacy by February 1; and nursing by February 15 for fall and September 15 for spring. Deadlines are subject to change.

Selection of a Major

Washington State University has nine colleges that grant undergraduate degrees. The colleges are divided into various departments that offer majors. A major is a set of courses that introduces you to an academic area of study in depth.

Entering freshman may identify an area of interest. The student is assigned an advisor in the major interest area by the Student Advising and Learning Center. This advisor can be changed if the student’s original interest should change. Students choosing not to specify a major interest area will be assigned to a general advisor.

An undergraduate may certify an academic major upon completion of 24 semester hours and 2.0 or better cumulative GPA for that major, with the approval of the department chair and notification to the Student Advising and Learning Center. Some departments have additional certification requirements and may require a higher minimum cumulative GPA than 2.0. Consult the departmental section of the catalog for special departmental requirements. Admission to Washington State University does not ensure acceptance into any department or program.

Students with advanced standing who transfer more than 24 semester hours may be certified upon admission as departmental majors unless they are uncertain about their majors or have not met departmental certification requirements. Transfer students who are not certified to a major are assigned to advisors in their areas of interest by the Student Advising and Learning Center.

Students interested in completing a minor or second major should consult the department concerned. Formal certification of a minor or second major is completed after the student has finished 60 semester hours. Approved minors are identified in the departmental section of this catalog.

Credit by Examination

Recognizing the natural ability and education experience of many of its applicants, Washington State University has developed a broad program of credit by examination.

Credit for College Board Advanced Placement (AP) examinations will be granted in an amount equal to the 100-200-level course or courses in the particular discipline tested, as approved by the specific academic department. The acceptable score for receiving credit is published in the appendix of the catalog under rule 15 for the year in which the AP examination is taken. The College Board College Level Examination Program (CLEP) may also yield credit. General and Subject Examinations will be granted credit as determined by the appropriate department. CLEP credit will vary depending on the calls for the 50th percentile or above.

If a student exceeds 60 semester hours of total credit, WSU will still allow for completion of any GERs that have been met through the CLEP examinations.

Advance Payment on Tuition and Fees

All undergraduate applicants, except former students returning, special students, contract students, and foreign students living outside the USA (except Canada), are required to submit a nonrefundable advance payment on tuition and fees in the amount of $200 prior to final admission. The advance payment will be requested of those applicants who are eligible for admission and should not be submitted until notice of eligibility is received by the applicant.

Graduate Admission Requirements

Applicants for admission to the Graduate School must meet the special requirements of the Graduate School and the particular program desired. For complete information, refer to the Graduate School listing in this catalog.
Financial Aid

Estimated 2005-2006 Undergraduate Expenses

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<th>Direct Costs</th>
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Note: The above costs are subject to change by the Board of Regents or through state legislative actions.

Other Costs

- Summer New Student Orientation Program: $125
- Security deposit required of those living in residence halls: $60
- Parking: Contact Parking Services for current rates.

Tuition and fees are due the first day of each term. Incoming students receive information about registration and orientation activities prior to coming to campus.

Suggested methods of payment are International Postal Money Orders or Checks, traveler’s checks, and bank money orders which are payable through a United States financial institution. Selected credit cards may be used to pay for anything on student accounts either in person or over the WSU Infonet. Other methods of payment may subject you to charges for expenses incurred by Washington State University to collect US funds.

Note: Your registration for courses at Washington State University constitutes a legal obligation to pay tuition and fees, subject to the University’s Refund Policy if you officially withdraw. You will be charged a $15.00 processing fee for any dishonored check drawn by you or others for your account.

Student Financial Assistance/Scholarships

Office of Student Financial Aid
Lighty Building, Room 380
509-335-9711
www.finaid.wsu.edu

Office of Scholarship Services
Lighty Building, Room 380
509-335-1059
www.finaid.wsu.edu/scholar

Federal assistance programs include Perkins Loans, subsidized and unsubsidized Stafford Loans and Parent Plus loans through the Federal Family Education Loan Program (FFELP), Pell Grants, Supplemental Educational Opportunity Grants, Federal College Work-Study employment, and Health Professions and Nursing Loans. State-sponsored programs include Tuition and Fee Waivers, State Work-Study employment and State Need Grants. University sources of aid include scholarships and institutional grants.

Students wishing to apply for any of the above aid programs at WSU must submit the Free Application for Federal Student Aid (FAFSA). These applications are available from all colleges and universities, public high schools, public libraries, and on the Web at www.fafsa.ed.gov. Be sure to list WSU as a school to receive your data. Our Federal School Code is 003800. Your application must be received by the Federal Processing Center by March 1 to receive priority processing. If you complete the application online, you must mail the signature page to the federal processor or use the PIN issued by the Department of Education for your application to be processed fully. Please allow 7-10 days for mail time for either the signature page or the paper FAFSA. If you miss the priority deadline, we encourage you to apply as soon as possible. After the March 1 deadline, processing and awarding is done on a date-received basis. Loans are available to all students regardless of income. Questions should be directed to the Office of Student Financial Aid.

A wide variety of scholarships are available to new and continuing students. These opportunities are available through the University-wide application, the student’s academic college or department, and through outside scholarship donors. Application requirements and due dates vary; questions should be directed to the Office of Scholarship Services.

Academic Progress: For financial aid purposes, full-time enrollment for an undergraduate student is 12 credit hours and part-time enrollment is considered to be 6-11 credit hours. For graduate students, full-time enrollment is 10 credit hours and part-time enrollment is considered to be 5-9 credit hours. Certain financial aid programs, such as State Need Grant, State Work-Study, and Tuition and Fee Waivers, require a student to be enrolled full-time. In order to maintain financial aid eligibility, students must meet Satisfactory Academic Progress (SAP) requirements for credit hour completion and grade point average (gpa). The complete SAP policy regarding credit hour completion, gpa, and degree completion time frame, is available at www.finaid.wsu.edu and the WSU Schedule of Classes each semester.

Loan Deferments: Deferments on Perkins Loans and Federal Family Education Loans require at least half-time enrollment. Five credit hours constitute half-time enrollment for a graduate student. Undergraduate students need to have at least six credit hours of enrollment.

Students with Disabilities

The state of Washington administers several programs of assistance to students with disabilities.

Blind students who are residents of the state of Washington may receive financial assistance under provisions of either RCW 28B.10.210 through 28B.10.220 or RCW 74.16.011 through 74.16.183. Inquiries concerning eligibility under this program should be addressed to Services for the Blind. Offices are located in Spokane, Yakima, Seattle, Vancouver, Tacoma, and Olympia. www.dshs.wa.gov, 800-552-7103.

Other students or prospective students who are residents and have a vocational handicap may be eligible for assistance through the vocational rehabilitation program administered by the state of Washington. Information concerning eligibility should be directed to the Department of Social and Health Services, Division of Vocational Rehabilitation, Olympia, WA 98504, 800-637-5627. www1.dshs.wa.gov/dvr.

Federal Veterans Benefits

French Administration Building, Room 346
509-335-1857
www.va.wsu.edu

The Veterans Affairs Office cooperates with the Veterans Administration in carrying out the provisions of the public laws established to give educational benefits to veterans and qualifying dependents of veterans whose death or permanent and total disability is service connected. Students should apply for admission to the University and for their VA benefits simultaneously. Application for benefits should be made to the WSU Veterans Affairs Office or on the Web at www.va.wsu.edu. There is currently at least a two-month delay between approval of the application and receipt of the first monthly benefits check for most students.

Veteran Students Called to Active Duty

Students activated or about to be activated for military duty need to contact the Veterans Affairs Office as soon as they receive notice of mobilization. If possible, please have a copy of your orders or a letter from the unit Commanding Officer available when contacting the office. Information is available in the Veterans Affairs Office, 509-335-1234, 509-335-1857.

Students Receiving Benefits

Students receiving benefits may be eligible for tutorial assistance or for Veterans work study. Information and application forms for all veterans programs may be obtained from the Veterans Affairs Office, French Administration Building, Room 346, Pullman, WA 99164-1035, or by calling 509-335-1234 or 509-335-1857.
Tuition Discount for Persian Gulf War Veterans from Washington State

Washington State Veterans who served in country during the Persian Gulf War in 1991 may be eligible for a 25% tuition discount. Contact the Veterans affairs Office, French Administration Room 346, or visit the WSU/VA Web site at www.va.wsu.edu for more information.

Vietnam Veterans Tuition Discount

Veterans who served in the Southeast Asia theater of operations between August 5, 1964, and May 7, 1975, may be eligible for a 25% tuition discount. Contact the Veterans' Affairs Office, French Administration Room 346, or visit the WSU/VA Web site at www.va.wsu.edu for more information.

Waiver of Fees for Children of Law Enforcement Officers and Firefighters

Students who are the children of law enforcement officers or firefighters who lost their lives or became totally disabled in the line of duty while employed by any public law enforcement agency or full-time or volunteer fire department in the state of Washington may be eligible for a partial tuition waiver. Washington law defines a totally disabled individual for waiver purposes as a person who has become permanently disabled for life by bodily injury or disease and is thereby prevented from performing any occupation or gainful pursuit. This waiver can not be used for self sustaining courses, i.e. DDP flex courses.

Persons claiming this exemption should apply in the Veterans Affairs Office, French Administration Room 346, and provide legal documentation of the death or disablement under the conditions prescribed for eligibility in RCW 28B.15.380.

WSU Tuition Fee Waiver Program

A fee waiver option is available for eligible individuals who wish to enroll for up to 6 credits per fall or spring semesters or 4 credits for summer. Individuals enrolling for more than the credit hour limits are not eligible for this program. This program is based on availability of space and facilities.

Eligible Individuals (some restrictions apply):

WSU Employees

- Classified staff holding half-time or greater appointments and having permanent status by the 10th day of classes (fall and spring semesters) or the 1st day of class for the summer sessions.
- Classified Staff on trial service appointments meeting the above criteria.
- Faculty and Administrative professional employees holding half time or greater appointments.

Others:

- Employees of other state of Washington agencies or higher education institutions meeting the WSU employee eligibility requirements are eligible for benefit for fall and spring semesters ONLY.
- USDA/ARS and ROTC faculty and staff employed at WSU locations who meet WSU employee eligibility requirements above are eligible on a space available basis.
- Washington National Guard active members are eligible for the benefit for fall and spring semesters ONLY.

Individuals Must be Admitted to WSU

Qualified individuals who wish to enroll under this program must follow regular admission procedures and present a completed staff/faculty registration authorization form beginning the first day of classes to the Registrar’s office or Summer Session office if for summer. Forms and instructions are available online at www.ronet.wsu.edu under RO Publications or at www.summer.wsu.edu under Faculty and Staff for summer session. Completed information on this fee waiver program can be found in the WSU Business Policies and Procedures Manual online at www.wsu.edu/%7Eforms/PDF/BPPM/60-00.pdf. (Fall and Spring: 60.70, and Summer: 60.73).

Fees

WSU charges each eligible individual a nonrefundable $5 administrative fee plus any special course and laboratory fees as well as any applicable late registration fees and late fee payment charges.

Other Restrictions

Individualized instruction such as independent study, distance degree and extended degree program courses, thesis, dissertation, research, internships, tutorials, self-sustaining courses (fall and spring semesters), private lessons, or practicums may not be taken under the fee waivers.

Audit Enrollments:

Auditing under the fee waiver is limited to two courses per semester. Laboratory courses may not be audited. The instructor’s signature is required for auditing and cannot be obtained prior to the first day of classes. For fall and spring semesters, applicants wishing to audit should report to the Registrar’s Office during the first week of classes to obtain the Permission to Audit form. Applicants wishing to use the fee waivers to audit summer courses should first check with the Summer Session Office within the Registrar’s Office to see if they qualify, as special conditions apply. Fee waiver students will be admitted to class on a space-available basis and are responsible for paying a $5 nonrefundable registration fee, plus any special course fees, or other fees as appropriate.

Waiver of Fees for Persons Age 60 and Over

Persons age 60 or over who are residents of the state of Washington may enroll in up to six audit hours per semester for fall and spring only, using a tuition fee waiver obtained at the Registrar’s Office. See Audit Enrollment information above for Fee Waiver Program.
Housing

Housing Services
Streit-Perham Administrative Office
509-335-7789
www.livingat.wsu.edu

Twenty-one residence halls, including co-educational, single-sex, and age-restricted halls, provide space for 4,500 students at the University. Additionally, 2,200 students reside in Greek chapter houses. Many of these living communities focus around particular academic, social, or international issues. These include Scholars and Honors Hall, Wellness Hall, and a Science, Engineering, and Math Hall, as well as an International House and halls designed specifically for the success of new students. Twenty-three (Inter) National Fraternities and 15 (Inter) National Sororities currently maintain chapters ranging in size from 40 to 110 people. Most sororities and fraternities maintain chapter houses.

Facilities for physically challenged students are also provided. Students living in residence halls, fraternities, and sororities elect their own officers, and each community affords many opportunities for leadership experience. The Residence Hall Association acts on behalf of the residence halls, as well as coordinates University-wide hall programming. Panhellenic and Interfraternity Council are the governing bodies for the Greek system and work together to promote scholarship and other programming activities. Residence hall information may be obtained online at www.livingat.wsu.edu or by writing to Housing Services, Streit-Perham Administrative Office, PO Box 641726, Pullman, WA 99164-1726. For information on sororities and fraternities, please write to Panhellenic and/or Interfraternity Council, Compton Union Building, PO Box 647204, Pullman, WA 99164-7204, or visit our Web site at www.wsu.edu/hdrl/Greek/greek.htm.

Housing Regulations

All single undergraduate freshmen under 20 years of age are required to live in organized living groups that are officially recognized by the University (residence halls, fraternities, and sororities) unless they are residing with parents or legal guardians. Exemptions are granted when students demonstrate to Student Affairs that (1) they have attended an institution of higher education as regularly enrolled students for at least two regular semesters or three regular quarters (30 semester hours), (2) they are living with immediate family in a family situation (mother and/or father, legal guardian, aunt or uncle, and grandparents qualify as immediate family), (3) they have secured a statement from a physician that residence in a living group would have detrimental effects on the student's physical health or emotional well-being, or (4) they would experience undue financial hardship.

Residence Halls and Dining Facilities

Washington State University can normally provide space in its residence halls for most beginning students who request it. The estimated cost of room and board per person, double occupancy with a level-two dining account for the 2005-2006 academic year, is $6,280. A $400 first payment, along with a $60 security deposit, is required at the time of application, unless the applicant is receiving more than $6,000 in financial aid.

A student desiring to cancel an advance room reservation and receive a refund of the first payment must notify Housing Reservations for Residence Halls, Streit-Perham Administrative Office prior to July 15. Once the applicant has been assigned to a hall, the security deposit is held to ensure occupancy of the space and then to guarantee against damage, breakage, and loss during the student's stay in the hall. The deposit is held until the individual permanently leaves the residence hall system.

Students residing in all but two of the residence halls purchase the Residence Dining Account for use in residence hall dining facilities. The dining facilities are managed by trained food service personnel and are operated on a nonprofit basis.

The Board of Regents establishes rules for the use of residence halls and other University housing. The University reserves the right to use the unassigned beds in any of the residence halls at any time.

Washington State University is not liable for the loss of money or valuables by any person, or for the loss of, or damage to, any resident's property, or personal injury sustained on the premises. It is urged that appropriate insurance be obtained prior to hall occupancy.

Family/Graduate Student Housing

The University maintains 663 unfurnished apartments (one-, two-, and three-bedroom) for families and 40 furnished studio apartments for unmarried graduate students. Furniture may be rented when available through the furniture rental program. Apartments are assigned from a waiting list based on the date the completed application and $60 refundable deposit are received. Units for use by handicapped students are available on a limited basis. Information and applications may be requested by calling Housing Reservations at 509-335-4577. Written requests may be mailed to: Housing Reservations, WSU Housing Services, PO Box 641726, Pullman, WA 99164-1726.

Single Student Apartments

The University operates 316 apartments that are available to unmarried students desiring apartment-type living. Sophomores and above are eligible for this type of housing. Apartments are rented only to groups of the same sex. Units are two-, three-, and four-bedroom and are completely furnished except for linen, kitchen utensils, cleaning equipment, and study lamps. Assignments are made from a waiting list based on the date a completed group application is received. Information and applications may be completed online at www.livingat.wsu.edu. Interested students may find potential roommates using our online bulletin board. Written requests may be mailed to: Housing Reservations, WSU Housing Services, PO Box 641726, Pullman, WA 99164-1726.
Tuition and Fees

Tax sources of the state finance the major portion of facilities and operation of the instructional programs, student services, and related activities. Students share in the costs by paying tuition, fees, and other charges as established by the Board of Regents.

Tuition, fees, and other charges are subject to change and are effective when established by the legislature of the state of Washington and adopted by the WSU Board of Regents. Please note that the tuition and fees shown below will be changed prior to the fall semester 2005. At the time of publication, the amount of the increases was unknown. The figures will be updated on the Web site, www.wsu.edu/studacct, as soon as new figures are available.

Payment of registration fees is due on or before the first day of the term.

CURRENT REGISTRATION FEES

<table>
<thead>
<tr>
<th>per semester</th>
<th>Undergraduate</th>
<th>Graduate</th>
<th>DVM</th>
</tr>
</thead>
<tbody>
<tr>
<td>FULL-TIME FEES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resident (10-18)</td>
<td>$2,577.00</td>
<td>$3,202.00</td>
<td>$6,327.00</td>
</tr>
<tr>
<td>Resident (19 hrs and above)</td>
<td>2,577.00+</td>
<td>3,202.00+</td>
<td>6,327.00+</td>
</tr>
<tr>
<td>Resident—DDP (10-18)</td>
<td>$2,577.00</td>
<td>$3,202.00</td>
<td>$6,327.00</td>
</tr>
<tr>
<td>Resident—WAMI</td>
<td>6,252.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonresident (10-18 hrs)</td>
<td>6,786.00</td>
<td>7,795.00</td>
<td>15,602.00</td>
</tr>
<tr>
<td>Nonresident (19 hrs and above)</td>
<td>6,786.00+</td>
<td>7,799.00+</td>
<td>15,606.00+</td>
</tr>
<tr>
<td>Nonresident—DDP (10-18 hrs)</td>
<td>6,786.00+</td>
<td>7,799.00+</td>
<td>15,606.00+</td>
</tr>
</tbody>
</table>

PART-TIME FEES per credit hour

(per credit hour; minimum charge: 2 credit hours)

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>DVM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>$258.00</td>
<td>$320.00</td>
</tr>
<tr>
<td>Nonresident</td>
<td>679.00</td>
<td>780.00</td>
</tr>
<tr>
<td>Nonresident—DDP</td>
<td>376.00</td>
<td>470.00</td>
</tr>
</tbody>
</table>

1 IMPORTANT NOTE: The credit hours listed in this table are for fee purposes only. Full-time enrollment for academic purposes (including financial aid, etc.) is 12 graded credit hours per semester. Tuition for students enrolled in 10-18 credit hours is capped at the amount listed above. Tax sources of the state finance the major portion of facilities and operation of the instructional programs, student services, and related activities. Students share in the costs by paying tuition, fees, and other charges as established by the Board of Regents.

ADVANCE PAYMENT (Due prior to final admission) $ 200.00

SPECIAL REGISTRATION FEES

| V M 601P and 602P | 3,052.00   |
| Graduation Leave Status | 25.00   |
| Auditing a Course | 244.00    |
| charge for each audit hour | 80.00 |
| (does not apply to full-fee-paying students) |        |
| Challenging a Course | 244.00    |
| charge for each challenge examination petition |        |
| (See Rule 15) |        |

Consult the Schedule of Classes for additional fees related to specific courses.

OTHER FEES AND CHARGES

| Admission application, undergraduate (nonrefundable) | 38.00 |
| Copyright | 45.00 |
| Cougar card, charge for replacement | 10.00 |
| Course withdrawal (after 30th day of the semester, per class) | 5.00 |
| Dishonored checks, service charge | 30.00 |
| Foreign Student Orientation (required of all new foreign students) | 25.00 |
| Graduate School application | 35.00 |
| Graduate School certificates | 25.00 |
| Graduation application, bachelor's degree | 35.75 |
| Graduation application, master's and doctor's degrees | 50.00 |

Late payment fee on unpaid tuition balances vary by date:

First Fee (fall: Sept. 6; spring: Jan. 23) 3%
Second Fee (fall: Sept. 23; spring: Feb 7) 5%
Third Fee (fall: Oct. 6; spring: Feb. 22) 7%

Late registration on or after the first day of the semester 25.00
Late registration after 10th day of semester 100.00
Math Placement Exam 15.00
Medical expense insurance (estimated annual cost)
(optional for all but foreign students) $1,250.00

Microfilming
(applicable to Ph.D. and Ed.D. degree candidates only) 75.00
Placement Bureau Credential Service
(fee assessed after graduation for each set of credentials) 5.00
Replacement Diploma 50.00
Sponsored Foreign Student Administrative Charge (each term) 300.00
Sports Pass—Academic Year (optional) 79.00
Student Petitions for Exceptions to Academic Calendar Deadlines 10.00
Student Recreation Center Fee 120.00
WSU Health and Wellness Services Fee (per semester) 102.00
(fee assessed to every student registered for 7 credits or more)
Teacher's Statutory Certification 37.00
Transcript (per copy)
Regular 4.58
Emergency/24 hrs and FAX 10.00
Transit Fee 7 credits or more 15.00
Transit Fee 6 credits or less 8.00
Undergraduate certificates 50.00
Veterinary Medicine application 60.00
Washington Student Loan (optional) 4.00
Writing Placement Exam 11.56

Note: Overdue accounts owed the University will prevent release of transcripts, diplomas, and enrollment. Registration is not complete until all of the student’s tuition and fees are paid.

Residency for Tuition-Paying Purposes

Residency for tuition and fee purposes is determined by the Washington State Legislature.

The administration of Washington State law regarding residency status shall be the responsibility of the Board of Regents. The Office of the Registrar is assigned the responsibility to represent the Board of Regents on questions of residency status for undergraduate and professional students. The Graduate School represents the Board of Regents for graduate students.

A student is a resident if (1) he or she is financially dependent on a parent(s) or legal guardian and (2) one parent or legal guardian maintains a bona fide domicile in the state of Washington. A student is a resident if (1) he or she is financially independent of his or her parent(s) or legal guardian and (2) he or she maintains a bona fide domicile in the state of Washington that is separate and distinct from an educational purpose. Washington State law provides that it is the student's burden to prove that he or she is a resident for tuition-paying purposes.

Financial dependence or independence shall be determined by the amount and source of a student's finances and whether or not the student has been claimed as a deduction on federal income tax forms in the calendar year immediately preceding the semester for which residency is sought. The term domicile means a person's true, fixed, and permanent home and place of habitation. Active duty U.S. military personnel stationed in Washington and their spouses and dependent children shall be classified resident.

Evidence to be considered in verifying Washington residency primarily for purposes other than education must have been in existence no less than 12 consecutive months and may include the following:

1. Registration of motor vehicles, motor homes, travel trailers, boats, or other personal property;
2. Driver’s license;
3. Employment records;
4. Income tax returns;
5. Voter registration;
Tuition and Fees

Once a student's residency classification has been determined, that classification will remain unchanged in the absence of written evidence justifying change during the time the student is in continuous enrollment.

Applications for change in residency status and all supporting evidence must be submitted to the Office of the Registrar or the Graduate School no later than 60 days after the student's registration has been completed. The burden of proof of residency status lies with the student.

If erroneous, untrue, or incorrect information submitted on an application results in an improper classification of resident or nonresident status or a final determination is reversed through the appeals process, Washington State University shall recover from the student or refund to the student, as the case may be, an amount equal to the total difference in tuition and fees had proper classification been made.

In accordance with RCW 28B.15.014, certain nonresidents may be exempt from paying the nonresident tuition and fee differential. To be eligible for an exemption a nonresident student must provide documented evidence that the student resides in the state of Washington and (1) holds a graduate service appointment involving not less than 20 hours per week; (2) is a faculty member, classified staff member, or administratively exempt employee holding not less than a half-time appointment or the spouse or dependent child of such a person; or (3) is an immigrant having refugee classification from the U.S. Immigration and Naturalization Service or the spouse or dependent child of such refugee, if the refugee (a) is on parole status, (b) has received an immigrant visa, or (c) has applied for United States citizenship. Exemption from nonresident tuition and fee differential shall apply only during the term(s) such person shall hold such classification, appointment, or be employed. To determine if you qualify for one or more of these exemptions, graduate students may apply at the Graduate School, French Administration Building, Room 324, and undergraduates may apply at the Office of Student Affairs, Lighty Student Services Building, Room 360.

Additional information about residency requirements, and the application for change of residency status, can be found at www.registrar.wsu.edu or by contacting Washington State University. The Washington State Legislature determines residency classification and the law applies to all colleges and universities in the state. See RCW 28B.15.012 at www.leg.wa.gov/wsladm/rcw.cfm. The General Catalog is intended to provide a brief summary of the requirements and does not replace or supersede any residency law enacted by the Legislature.

REFUND POLICY

Registration Fees

Students who cancel their enrollment after the semester has started will be charged an administrative fee of five percent of the assessed tuition and mandatory fees, but no more than $100.00, in addition to other amounts owing. Tuition, operating, and student services and activities fees will be refunded in full if students officially withdraw from the University prior to the sixth day of classes during a given semester. Students who cancel their enrollment after the semester has started will have those charges reduced based upon the week of cancellation as follows:

<table>
<thead>
<tr>
<th>Week</th>
<th>Reduction</th>
<th>Week</th>
<th>Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>80%</td>
<td>7</td>
<td>50%</td>
</tr>
<tr>
<td>3</td>
<td>80%</td>
<td>8</td>
<td>50%</td>
</tr>
<tr>
<td>4</td>
<td>70%</td>
<td>9</td>
<td>40%</td>
</tr>
<tr>
<td>5</td>
<td>60%</td>
<td>10</td>
<td>0%</td>
</tr>
<tr>
<td>6</td>
<td>60%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Weeks during which the University is on vacation for the entire week do not count in this adjustment schedule. Adjustments or refunds for students who receive financial aid will be computed on a modified schedule provided by the Federal Financial Aid Office.

Course Withdrawals After the 30th Day

No tuition adjustment for individual course withdrawals will be made beginning 30 calendar days after the start of the semester. For example, a student who is enrolled in 16 credit hours and withdraws after the fourth week from a 3-credit course and adds a 3-credit course is accountable for 19 hours. In this example, the student would owe the one credit over 18 credits.

Full refunds of the additional per credit hour charges (for each credit over 18) are given if the credit load is reduced to 18 hours or fewer within the first 30 calendar days of the semester.

Special Course Fees and Activity Fees

A full refund of special tuition and course fees will be granted to students who withdraw within the first 10 days of instruction of the semester (first five days of the start of instruction for second block courses) from a course requiring a special course fee. There is no refund of special tuition and course fees after the 10th day of instruction of the semester (after the 5th day of the start of instruction for special block courses). A request for refund is required on special block courses. Refunds given as an exception to this policy may be requested through the academic department which provides the course(s).

Student Health and Wellness Services Fee

Upon withdrawal from the University, the health fee will be reduced according to the same percentages per week as stated above for tuition and fees, as long as no health services have been provided to the student. A refund of the health fee may be denied if the student has utilized health services during the semester.

Student Medical Insurance

Students enrolled in the optional medical insurance plan may cancel the coverage within the first three weeks of class. Contact Benefit Services, 232 French Administration Building; phone 509-459-1759 or e-mail benefits@wsu.edu.

International Students, regardless of the number of credit hours, are required to purchase the medical insurance plan. Any exceptions must be brought to the Benefit Services Office by the end of the third week of classes each semester.

Student Recreation Center

Upon withdrawal from the University, the Student Recreation Center fee will be refunded according to the same percentages per week as stated above for tuition/fees.

Sports Pass

Refunds, when applicable, may be obtained by applying in person during the first 10 days of the fall semester at the Athletic Ticket Office. This refund, if approved, is then processed through Student Accounts in French Ad. Failure to cancel your sports pass through the Athletic Ticket Office by the stated deadline will result in your obligation to pay whether or not you have utilized your sports pass.

Student Computing Services Server/Lab Pass

Refunds, when applicable, may be obtained by applying in person, by the deadline date at any of the Student Computing Services Labs (ITB 2091, CUE 302/402, Gannon/Goldsworthy S8, Stephenson Residential Complex 206, Honors 10 and Streit Hall 60).

Housing and Dining Services

Specific details of the Housing and Dining Services refund policy are noted in the Housing and Dining contracts.
Canceling Enrollment and Refund Appeal Procedures

WSU Pullman and Urban Campus Students

Students who wish to drop all of their classes before the first day of the semester must do so over METRO. After the semester has started, students can cancel their enrollment by filling out the online cancellation of enrollment form at www.registrar.wsu.edu. In the event of technical problems, contact the Student Affairs Office at 509-335-4531 or www.studentaffairs.wsu.edu/. Students canceling enrollment under certain unusual circumstances, such as documented health problems, death in the immediate family, military service, or job relocation may be eligible to petition for a reduction in tuition for the current semester. Consult with the Student Affairs staff on the appropriate campus regarding these procedures.

Nursing and Distance Degree Students

To withdraw, students must contact their ICN or DDP administrative office. Students canceling enrollment under certain unusual circumstances, such as documented health problems, death in the immediate family, military service, or job relocation may be eligible to petition for a reduction in tuition for the current semester. Consult with the appropriate administrative office regarding these procedures.
Agricultural, human, and natural resource science expertise is vital to the well-being of the state and nation. The College of Agricultural, Human, and Natural Resource Sciences is responsible for generating and disseminating knowledge about physical, biological, social, and economic aspects of agriculture, natural resources, consumer, and family sciences. These responsibilities are met through formal classroom instruction, on-going research programs, and outreach programs of cooperative extension. All of these contribute to the development of Washington's human and natural resources.

The college's 11 teaching departments offer approximately 30 majors that prepare professionals for careers in agricultural systems, natural resource management, food production, processing, and distribution, as well as in areas of health, apparel, and interior design. Students receive a solid base in science and a technological grounding that enables them to remain abreast of the dynamic fields of agricultural, human, and natural resource sciences. Study programs also help prepare graduates to live and work in our environmentally conscious and globally focused economy and society. All degree programs provide students with opportunities for interactions with researchers, in the classroom and in their lab/studios, and with hands-on experiences in their fields through internships.

Agriculture and natural resources are two of the most important industries in the state of Washington. Although the number of individuals directly involved in production agriculture has declined, the overall agricultural industry remains Washington's number one industry economically and offers an increasing number of job opportunities. Programs in agriculture and natural resource sciences prepare students for a wide variety of careers including food processing, pest management, natural resource management, business and finance, sales and distribution of food products, and communications. Graduates are qualified to be agricultural producers, land managers, agriculture teachers, media specialists, landscape architects, or industry representatives for agriculture or natural resources. Students who earn graduate degrees are prepared to follow scientific careers in research, college teaching, cooperative extension, and highly technical pursuits in industry and government.

The College of Agricultural, Human, and Natural Resource Sciences offers unique opportunities to prepare students interested in pursuing a career in veterinary medicine. Many departments, including animal sciences, entomology, and natural resource sciences, have programs that allow students to prepare for admission to veterinary school and earn a baccalaureate degree simultaneously.

College programs in the human sciences prepare students for positions as dietitians, pre-school to third grade educators, teachers of family and consumer sciences, human science agency managers, and directors of aging programs. Other careers include apparel, merchandising, interior design, consumer services, or commercial food service. Students who graduate are prepared to teach in public schools, to work in adult education, and to administer and supervise preschool and child care centers. Those who earn advanced degrees are educationally qualified to fill positions in research, cooperative extension, governmental agencies, foreign services, college teaching, and business.

Admission
The requirements for admission to the College of Agricultural, Human, and Natural Resource Sciences are the same as those for WSU. High school students planning to enroll in the college are urged to work closely with their counselors and with representatives from WSU in developing an appropriate background of high school courses in biological, physical, and social sciences, mathematics, and other elective areas.

Transfer Students
Most transfer students who have completed one year in another college or University ordinarily will have no difficulty in completing the requirements for one of the bachelor's degrees in three additional years.

Some students who have completed two years before transferring could have some difficulty in completing requirements in two additional years because of required courses and course sequences. To avoid this difficulty, students enrolled in other colleges or universities but planning to transfer to the College of Agricultural, Human, and Natural Resource Sciences should concentrate as much as possible on general education, science, and other departmental requirements normally scheduled during the freshman and sophomore years, with particular attention to those subjects required for the intended majors. Students at community colleges in the state should check to see whether there is an articulation agreement between their institution and the WSU program of interest. Students should also contact a College of Agricultural, Human, and Natural Resource Sciences advisor in their area of interest.

Requirements for Graduation
Requirements for graduation in the College of Agricultural, Human, and Natural Resource Sciences vary according to the major and the degree to be granted as described in the departmental sections of this catalog. The student and the advisor jointly have the responsibility of selecting courses to fit the student's native ability and professional interests consistent with departmental and general education requirements. Students are encouraged to do more than satisfy the minimum requirements.

Agriculture Degrees

<table>
<thead>
<tr>
<th>Degree Department</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science in Agriculture</td>
<td>Biological Systems Engineering</td>
</tr>
<tr>
<td>Agricultural Communications</td>
<td>Biological Systems Engineering</td>
</tr>
<tr>
<td>Agricultural Education</td>
<td>Biological Systems Engineering</td>
</tr>
<tr>
<td>General Agriculture</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Agribusiness</td>
<td>School of Economic Sciences</td>
</tr>
<tr>
<td>Agricultural Economics and Management</td>
<td>School of Economic Sciences</td>
</tr>
<tr>
<td>Agricultural Technology and Management</td>
<td>Biological Systems Engineering</td>
</tr>
<tr>
<td>Animal Sciences</td>
<td>Animal Sciences</td>
</tr>
<tr>
<td>Crop Science (including business and industry, cropping systems, science/biotechnology, and turfgrass management)</td>
<td>Crop and Soil Sciences</td>
</tr>
<tr>
<td>Entomology (including integrated pest management)</td>
<td>Entomology</td>
</tr>
<tr>
<td>Environmental and Resource Economics</td>
<td>School of Economic Sciences</td>
</tr>
</tbody>
</table>

Colleges and the Graduate School

R. James Cook, Interim Dean
Hulbert Hall, Room 423
509-335-4562
www.cahnrs.wsu.edu
### BACK TO CONTENT

| Environmental Science Planning | Environmental Science and Regional Planning |
| Food Science and Human Nutrition | Food Science and Human Nutrition |
| Genetics and Cell Biology Horticulture | see Molecular Biosciences Horticulture and Landscape Architecture |
| (including environmental horticulture, fruits and vegetables, tree fruit management, and viticulture/enology) | |
| Natural Resource Sciences Forestry | Natural Resource Sciences Natural Resources |
| Range Management | Landscape Architecture |
| Wildlife Ecology | Crop and Soil Sciences |
| Soil Science | (including environmental soil science, precision farming, soil management, and sustainable agriculture) |

**Bachelor of Landscape Architecture**
- Landscape Architecture
- Horticulture and Landscape Architecture

**Master of Arts**
- Agribusiness
- Agricultural Economics

**Master of Regional Planning**
- Regional Planning

**Master of Science**
- Agriculture
- Animal Sciences
- Crop Science
- Entomology
- Food Science
- Genetics and Cell Biology
- Horticulture

**Doctor of Philosophy**
- Agricultural and Resource Economics
- Animal Sciences
- Crop and Soil Sciences
- Entomology
- Food Science and Human Nutrition
- Genetics and Cell Biology
- Horticulture and Landscape Architecture

**Human Sciences Degrees**

#### Degree
**Bachelor of Arts**
- Apparel, Merchandising, Design, and Textiles

### COLLEGE OF BUSINESS AND ECONOMICS

**Leonard M. Jessup, Dean**
**Todd Hall, Room 570**
**509-335-3596**
**www.cbe.wsu.edu**

The programs of the College of Business and Economics provide instruction, research, and public service. The vision, mission, and goals statements below guide these activities:

**Vision**
The vision of the College of Business and Economics (CBE) is to provide high-quality undergraduate programs that are among the best technology-integrated programs in the Northwest; to provide select, high-quality graduate programs; and to produce high-quality scholarship.

**Mission**
The mission of the CBE is to produce graduates who have the intellectual capabilities and skills necessary for them to be successful in their chosen fields in today’s increasingly competitive technological and global business environment. The CBE is committed to expanding the diversity of the student body and faculty. As part of the tradition of a land grant University, our core activities are undergraduate and graduate education, research, and service. We will continue to foster the synergies that exist among these activities. The CBE is committed to: (1) educate graduates with the skills essential to problem solving, communication, teamwork, leadership, and ethical decision-making; (2) critically examine and extend existing knowledge; (3) effectively disseminate state-of-the-art knowledge to students, colleagues, business, government, and other people whom we serve; and (4) to develop outreach programs.

**Goals**
The goals established to achieve the mission of the CBE are prioritized as follows:

1. To support faculty who are producing high-quality scholarly work that results in the creation, application, and dissemination of knowledge; that enhances the educational experience of our students; that is valuable to business and government; and that adds to the reputation of the CBE.
2. To integrate technology throughout the undergraduate and graduate programs, to support faculty in their use of technology, and to produce graduates who are technologically literate.
3. To explore and secure private funding needed to supplement State funding to support and reward faculty research and teaching innovation, to support student scholarships and services, and to support the CBE Office of Technology.

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**Office of the Dean**

**Todd Hall, Room 570**

**Leonard M. Jessup, Dean**

**509-335-3596**

**www.cbe.wsu.edu**

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2. To integrate technology throughout the undergraduate and graduate programs, to support faculty in their use of technology, and to produce graduates who are technologically literate.
3. To explore and secure private funding needed to supplement State funding to support and reward faculty research and teaching innovation, to support student scholarships and services, and to support the CBE Office of Technology.
4. To provide outreach programs to community colleges, foreign universities, industry, small businesses, and place-bound students; however, such programs will be undertaken only if they will generate a profit and will not take resources from other business programs.

The curricula leading to degrees in business administration and accounting at both the undergraduate and graduate levels are accredited nationally by AACSB International—The International Association for Collegiate Schools of Business. Consistent with the mission and goals above, each business major below embraces a core of instruction that provides a common body of knowledge and advanced study.

Areas of Study

The college departments—accounting, information systems, economics, finance, international business, marketing, and management and operations—offer the following majors for the Bachelor of Arts in Business Administration degree:

Accounting
Accounting and Information Systems
Business Administration
Entrepreneurship
International Business
Information Systems
Management and Operations
Marketing
Finance

Within the college a specialized bachelor of arts degree is offered in the area of Hospitality Business Management.

The Department of Economics offers a Bachelor of Arts in Economics, with specializations in such areas as:

- Economics of Financial Markets
- Economics of Public Policy
- International Economic Development
- Labor Economics
- Economics of Regulation, Industrial Organization, and Law

Graduate work may be taken in business administration, economics, and accounting leading to master and doctor of philosophy degrees.

Minors

Minors are available in the following business administration fields: accounting, business administration, entrepreneurship, finance, human resource/personnel, international business, information systems, and marketing. Minors in economics, sustainable development, and hospitality business management are also available. For specific information regarding minor requirements, see the business administration, economics, and hospitality business management sections of this catalog.

Admission

Admission is competitive and based on capacity. Students should certify into hospitality business management or a particular business major upon completion of 60 hours of credit and specific course and gpa requirements (see the certification requirements in the business administration section of this catalog). To be eligible to enroll in 300-400-level business or HBM courses, business and hospitality business management students must have certified in their respective majors. Students interested in pursuing the Bachelor of Arts in Economics may apply for certification upon completion of 24 semester hours (see certification requirements in the economics section of the catalog).

For exact information regarding the acceptability of college courses taken at other institutions in areas of study offered by the departments of the College of Business and Economics, prospective students should communicate with the appropriate department chair or the college advising office.

Diversity, Recruitment, and Retention

The College of Business and Economics is strongly committed to diversifying its student body as well as to improving its retention and graduation rates of underrepresented students. It is essential to create an environment that is supportive and inclusive and where all students can succeed academically and professionally.

To support these goals, the College of Business and Economics has established the CBE Recruitment and Retention Program. This program is committed to providing information and support for women, ethnic minority, and physically challenged students. The program has four components: (1) Networking; (2) Program and Organizational Development; (3) Internship Opportunities; and (4) Instructional Development.

Degrees

The curricula of the College of Business and Economics lead to the following degrees:

**Degrees: Pullman Campus**
- Bachelor of Arts
- Master of Accounting
- Master of Arts
- Master of Business Administration
- Master of Technology Management
- Doctor of Philosophy

**Degrees: Tri-Cities Campus**
- Bachelor of Arts
- Master of Business Administration

**Degrees: Vancouver Campus**
- Bachelor of Arts
- Master of Business Administration

**Department or Area**

- Business Administration
- Economics
- Hospitality Business Management
- Accounting
- Business Administration
- Business Administration
- Economics

**Department or Area**

- Business Administration
- Business Administration

**College of Education**

Judy Nichols Mitchell, Dean
Cleveland Hall
509-335-4853
www.educ.wsu.edu

The College of Education consists of the Departments of Educational Leadership and Counseling Psychology, and Teaching and Learning.

The college has both degree and certification programs. The College of Education offers degree programs that prepare teachers for elementary school, secondary school, and college instruction; specialists and researchers in a variety of educational fields; administrators for schools, colleges, and universities; and sport-related specialists for private and community agencies. The college also provides professional training in movement studies, athletic training, counseling, and counseling psychology. It offers a variety of educational services to school systems.

At the baccalaureate level, the General Education Requirements provide a foundation for professional work in the College of Education through offerings in the arts and humanities and in the social and natural sciences. Practical experiences are integrated with course work throughout the professional preparation curricula.

The mission of the certification programs in the College of Education is to furnish intensive preparation for persons who serve or aspire to serve in teaching, supervisory, special services, or administrative fields at all levels of education as well as in related areas of professional services. Candidates for certification must demonstrate knowledge and competencies at qualified levels of professional practice.

Graduate programs in the College of Education offer advanced course work and field experience in education and human services. Certification programs in administration and counseling are available at the graduate level. Doctoral
programs focus on preparation of administrative personnel for the schools, counselors, teacher educators, and educational researchers. Graduate programs stress scholarship as a basis for all professional endeavors.

Teacher education curricula at all degree levels in the College of Education are accredited by the National Council for Accreditation of Teacher Education. The program in counseling psychology is accredited by the American Psychological Association. The College of Education is a member of the American Association of Colleges for Teacher Education and the University Council on Educational Administration.

The College of Education also functions as a service institution for schools and communities in the state of Washington. Applied research services are provided to education and health-related agencies throughout the United States and internationally. Services of faculty are available for consultant purposes, school studies, professional development programs, school seminars, and community conferences in the departmental specialties.

Degrees

Undergraduate degrees offered in the College of Education are as follows:

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department or Area</th>
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<tbody>
<tr>
<td>Bachelor of Arts in Education</td>
<td>Teaching and Learning</td>
</tr>
<tr>
<td>Bachelor of Arts in Sport Management</td>
<td>Educational Leadership and Counseling Psychology</td>
</tr>
<tr>
<td>Bachelor of Science in Kinesiology</td>
<td>Educational Leadership and Counseling Psychology (Athletic Training and Movement Studies)</td>
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<td></td>
<td>Teaching and Learning (Health and Fitness Education)</td>
</tr>
</tbody>
</table>

Graduate degrees offered by the College of Education are as follows:

<table>
<thead>
<tr>
<th>Degree</th>
<th>Areas of Specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Education</td>
<td>K-12 Administration</td>
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<td></td>
<td>Counseling</td>
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<td></td>
<td>Curriculum and Instruction</td>
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<td></td>
<td>Diverse Learners</td>
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<td></td>
<td>Educational Psychology</td>
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<td></td>
<td>Elementary Education</td>
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<td></td>
<td>Secondary Education</td>
</tr>
<tr>
<td>Master of Arts in Education</td>
<td>K-12 Administration</td>
</tr>
<tr>
<td></td>
<td>Counseling</td>
</tr>
<tr>
<td></td>
<td>Curriculum and Instruction</td>
</tr>
<tr>
<td></td>
<td>Diverse Learners</td>
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<tr>
<td></td>
<td>Educational Psychology</td>
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<tr>
<td></td>
<td>Elementary Education</td>
</tr>
<tr>
<td></td>
<td>Secondary Education</td>
</tr>
<tr>
<td>Master in Teaching</td>
<td>Elementary Education</td>
</tr>
<tr>
<td>Master of Science in Exercise Science</td>
<td>Exercise Science</td>
</tr>
<tr>
<td>Doctor of Education</td>
<td>K-12 Administration</td>
</tr>
<tr>
<td></td>
<td>Curriculum and Instruction</td>
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<tr>
<td></td>
<td>Educational Psychology</td>
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<tr>
<td></td>
<td>Higher Education Administration</td>
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<td></td>
<td>Higher Education—Student Affairs</td>
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<tr>
<td></td>
<td>Literacy Education</td>
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<tr>
<td></td>
<td>Mathematics Education</td>
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</tbody>
</table>

Additional information on the College of Engineering and Architecture is available online.

COLLEGE OF ENGINEERING AND ARCHITECTURE

Anjan Bose, Dean
Dana Hall, Room 146
509-335-5593
www_cea.wsu.edu

The College of Engineering and Architecture provides instruction, research, and public service in engineering, architecture, construction management, computer science, and materials science. Academic units in the college offering engineering degree programs are chemical engineering and bioengineering, civil and environmental engineering, electrical engineering and computer science, mechanical and materials engineering, and engineering and computer science (Vancouver). The School of Architecture and Construction Management offers degrees in architecture and construction management. The Ph.D. in materials science is offered through an interdisciplinary program with the College of Engineering and Architecture and the College of Sciences.

The college's undergraduate degree programs prepare graduates for both professional careers and advanced study and are known for their practical, hands-on components coupled with a strong foundation of basic principles. The college's programs use formal classroom instruction, coupled with individual and group projects, seminars, and individually directed studies to prepare students to develop solutions that are technically, socially, and economically appropriate. Many students also gain work experience in their fields of interest through employment on college research projects or internships in industry.

Faculty, graduate students, and staff in the college perform basic and applied research addressing problems of state, national, and international importance. Research projects are designed to enhance economically, ecologically, and culturally sound use of our material resources and to promote well-balanced industrial and professional development. Research is an integral part of graduate degree programs, providing graduate project topics and opportunities for graduate student interactions with outside professionals. The college's research also strengthens its undergraduate programs by involving undergraduate students in relevant creative exploration and by keeping undergraduate course content current with the latest research developments.

The college provides important educational services to industries, professions, and the general public. Short courses, conferences, and workshops taught by college faculty produce valuable interactions among professionals and deliver current technical information to these audiences. Faculty of the college also serve as editors, authors, and reviewers for professional journals serving the nation and the world.

The college offers undergraduate degree programs of sufficient breadth to enable its graduates to choose employment from a large number of specialties within their general fields. Opportunities for specialization are made available to qualified students through graduate programs in the various schools and departments.

Students majoring in degrees offered by the College of Engineering and Architecture are guided in selection of courses in arts and humanities, social sciences, intercultural studies, and communication to integrate general education requirements with needs of the major. Students are encouraged to take general education courses concurrently with courses in the major to facilitate effective integration of subjects for practical application. Students planning to transfer to Washington State University after completing general education requirements at other institutions should obtain sample schedules of studies for their proposed major at WSU to be familiar with specific requirements for that major.

Additional information on the College of Engineering and Architecture is available online.

Degrees

Degrees offered in the College of Engineering and Architecture at the Pullman campus are listed below (exceptions are listed in parentheses):

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department or Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts</td>
<td>Computer Science (Tri-Cities also)</td>
</tr>
<tr>
<td>Bachelor of Science</td>
<td>Architectural Studies</td>
</tr>
<tr>
<td></td>
<td>Bioengineering</td>
</tr>
</tbody>
</table>
Environmental Engineering  
Electrical Engineering (Tri-Cities also)  
Materials Science and Engineering  
Construction Management  
Computer Science

Electron Microscopy Center, Erosion Research and Outdoor Irrigation Laboratory, Albrook Hydraulics Laboratory, Laboratory for Atmospheric Research, Physics, Chemistry, and the Program in Biology. The graduate programs are

Integrated Biotechnology, Bioengineering Research Center, and the Materials Research Center, Center for Multiphase Environmental Research, Center for Integrated Biotechnology, Bioengineering Research Center, and the Materials Research Center.

Graduate degrees in engineering are offered at the master’s and doctoral levels. Students desiring graduate degrees in areas not listed may arrange with the program of interest to pursue a Master of Science in Engineering or Doctor of Philosophy in Engineering Science, allowing their programs of study to be designed for their particular needs and interests. Admission to engineering graduate programs is open to qualified students with a recognized degree in engineering, mathematics, a physical science, or a biological science. Additional information about specific areas of active research may be obtained by contacting the Associate Dean for Research or the appropriate department chair or school director.

Strong supporting courses are available from the Departments of Mathematics, Physics, Chemistry, and the Program in Biology. The graduate programs are also supported by many excellent University facilities such as the Water Research Center, Albrook Hydraulics Laboratory, Laboratory for Atmospheric Research, Wood Materials and Engineering Laboratory, Spectrographic Laboratory, the Electron Microscopy Center, Erosion Research and Outdoor Irrigation Laboratories, Food Engineering Pilot Plant, the National Science Foundation Center for Design of Analog/Digital Integrated Circuits, Power Systems Engineering Research Center, Center for Multiphase Environmental Research, Center for Integrated Biotechnology, Bioengineering Research Center, and the Materials Research Center.

Computer Science

Computer science is the scientific foundation for computing, with roots in mathematics, the sciences, and engineering. Computer science encompasses the theory and techniques by which information is represented, processed, stored, and communicated. It deals particularly with the theory of algorithms and the step-by-step procedures for creating software to solve a problem or accomplish some goal. Students study computer software and hardware systems for efficient solution of practical problems. The Bachelor of Science program in computer science, offered through the School of Electrical Engineering and Computer Science, is accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, 410-347-7700. Curricular specializations available include computer engineering, databases, distributed computing, networks, network security, operating systems, and software engineering. Students use a variety of scientific workstations, graphic workstations, and microcomputer laboratories, all of which are networked to each other and to national networks.

The Bachelor of Arts in Computer Science emphasizes breadth by requiring expertise in computer science and another area. The latter is accomplished through the requirements of a formal minor. The areas of specialization within computer science are the same as those listed for the Bachelor of Science degree. The degree is accredited by the Computing Accreditation Commission of ABET.

Architecture and Construction Management

The School of Architecture and Construction Management offers programs of study in architecture and construction management. Practice in these fields relies on studies of the arts and humanities as well as the sciences and technologies. Courses are designed to provide both professional fields with the breadth and depth of knowledge necessary to respond to the environmental and cultural forces that continually shape the decision-making processes associated with each field.

Programs of study in the School lead to the following degrees: a Bachelor of Science in Architectural Studies (a four-year degree) that is accredited by the American Council for Construction Education (ACCE) and a non accredited Master of Science in Architecture with emphasis on design theory or design-build management.

Admission

Students must apply and be accepted (certified) into the undergraduate programs in the college before they may enroll in 300-400-level courses in the major. When admitted to Washington State University, students are placed into the advising program within the Student Advising and Learning Center (SALC) where they are assigned advisors in their indicated major for the period prior to their being certified in a major. Students may certify into a major after they have completed at least 24 semester credit hours and a prerequisite set of courses for the specific major.

Prospective students in engineering or computer science may apply for certification into the major of their choice upon completion of the applicable program requirements. Prospective students should contact the department or school administering their choice of majors to determine specific courses to be completed, application procedures, and application deadlines for certification. Factors considered in certification decisions include grades in science and math courses, grades in the major, overall grade point average, course repeats, professional experience and goals, and other indicators of the student's potential for successful completion of the curriculum. Students denied certification into an engineering program may appeal to the Dean of the College of Engineering and Architecture for a review to ensure that departmental procedures were followed.

Prospective students in architecture are assigned to an architecture advisor and go through a step-by-step screening process scheduled at the end of the first year of study.

Prospective students in construction management are assigned to a construction management advisor and go through a step-by-step screening process scheduled at the end of the first year of study.
THE GRADUATE SCHOOL

Howard Grimes, Dean
French Administration Building, Room 324
509-335-6424
www.gradsch.wsu.edu

A graduate school has been described as a select community of scholars, faculty, and students dedicated to the extension of scholarship and the advancement of knowledge for the ultimate common good of mankind. The fields of intellectual and scholarly activity are numerous, and the student who contemplates graduate study should select a graduate school that offers a superior program in the chosen field. The student should study the accomplishments of the members of the faculty, the adequacy of the research facilities, and the appropriateness of the curricula. For many, the Graduate School of Washington State University will provide advantageous and attractive opportunities.

Prospective graduate students should prepare themselves adequately in the fundamental subject matter necessary for their advanced work, so that they may intelligently fulfill their responsibilities of leadership and service to society. In a graduate program, a student is required to complete appropriate advanced courses, to participate in seminars, and to make an original contribution to knowledge. At least one academic year of graduate study, or the equivalent, is necessary for the completion of a program leading to a master's degree. A doctor's degree is awarded in recognition of distinctive scholarship.

The period of study for the Doctor of Philosophy degree is at least three years (six semesters) beyond the baccalaureate degree. For students without a master's degree, at least two of these three years shall be in residence at Washington State University (enrolled full time and present on a campus where a given program has received approval to grant residency). For students with a master's degree, at least one of these three years shall be in residence at Washington State University (enrolled full time and present on a campus where a given program has received approval to grant residency).

The period of study for the Doctor of Education degree is at least three years (six semesters) beyond the baccalaureate degree. At least two of these three years shall be in residence at Washington State University, including a minimum of four semesters, with at least one summer session and one semester being contiguous, when the student is enrolled full-time and present on the Pullman campus. Full-time enrollment for four summer sessions may be substituted for two academic year semesters. Summer session cannot be substituted for the semester contiguous with a summer session requirement for the doctoral degree.

Most advanced-degree programs emphasize the preparation of students for careers as productive scholars, and accomplishments in research constitute an important part of the training. It is recognized also that those who earn advanced degrees often become the teachers in our institutions of learning. For this reason, in many departments special attention is given to the preparation of students for careers in the teaching profession.

Except as they apply to undergraduate students only, graduate students are subject to the usual procedures and regulations of the institution and to such Graduate School rules and procedures as outlined on the following pages and in the Graduate School Policies and Procedures.

Opportunities for advanced study and research with members of the faculty are offered in the Graduate School. Graduate instruction and research are carried on in most of the regularly organized departments. Programs of study leading to advanced degrees are under the governance of the Graduate Studies Committee.

The graduate faculty consists of the President of Washington State University, the deans of the various academic units, the chairs of the academic departments and programs in which advanced degree programs are offered, and selected other members of the faculty. Members of the faculty have the responsibility of offering courses limited to graduate students, guiding graduate seminars, serving as thesis advisors and members of thesis committees, administering Graduate School examinations (master's, preliminary, and doctoral) and, from time to time, serving as members of the Graduate Studies Committee. Graduate students have opportunities for studying and working in a close professional relationship with the members of the faculty who have been selected because of their special competence and interest.

Degrees Granted

Doctor of Philosophy

Programs leading to this degree are available in the following fields of study: agricultural economics, American studies, animal sciences, anthropology, biochemistry, botany, business administration, chemical engineering, chemistry, civil engineering, communication, computer science, criminal justice, crop science, economics, education, electrical and computer engineering, engineering science, English, entomology, environmental and natural resource sciences, food science, genetics and cell biology, geology, history, horticulture, individual interdisciplinary studies, materials science, mathematics, mechanical engineering, microbiology, molecular plant sciences, neuroscience, nutrition, pharmacology and toxicology, physics, plant pathology, political science, psychology, sociology, soil science, veterinary science, and zoology.

Master of Arts and Master of Science

The appropriate degree may be earned in most departments. (See the paragraph on degrees under the descriptive material for each department or other unit of the institution.)

Additional Degrees

Courses of study leading to the Doctor of Education and Master of Education degrees are offered in the Department of Educational Leadership and Counseling Psychology and the Department of Teaching and Learning.

A student may undertake a program for the degree of Doctor of Audiology, Doctor of Design, Master of Accounting, Master of Architecture, Master of Business Administration, Master of Engineering Management, Master of Fine Arts, Master of Health Policy and Administration, Master of Nursing, Master of Public Affairs, Master of Regional Planning, Master of Technology Management, or Master in Teaching.

Admission

Graduates of Washington State University and other colleges and universities whose degrees are recognized by this institution and who meet the requirements for admission to the Graduate School may be admitted to the Graduate School. For necessary interpretations, inquiries should be directed to the Dean of the Graduate School. Prospective graduate students who have established superior academic records and whose degree interests are compatible with the programs offered at Washington State University are invited to apply for admission to the Graduate School.

Students who contemplate entering the Graduate School should obtain application forms from the Office of the Graduate School. Applications are also available on the Web at www.gradsch.wsu.edu. For admission to the Graduate School, Washington State University requires official transcripts from each of the following: (1) colleges or universities from which any degrees have been granted or are expected and those transcripts which show the last 60 graded semester or 90 graded quarter hours of undergraduate work taken; (2) colleges or universities showing graded graduate-level (including doctoral) course work taken after the bachelor's degree. Note: Students intending to request transfer credit for their program of study will need to submit official transcripts from colleges or universities showing such credit. Departments and programs are free to request additional transcripts as deemed appropriate. Official transcripts are those mailed directly to the Graduate School from the registrar of the institution attended. One set is to be sent to the Graduate School and a second set is to be sent to the chair of the department or program concerned. Complete credentials should be on file at least one month before registration. Transcripts from other institutions cannot be returned. Records of previous work at Washington State University need not be submitted.

In general, admission to the Graduate School on regular student status requires at least a B (3.00 on a 4.00 scale) average for the last 60 semester hours of graded undergraduate work. Admission is to be on the basis of graduate study elsewhere, when it has been accomplished in a recognized graduate school with at least a B (3.00) average in 12 or more semester hours of graded graduate work beyond the bachelor's degree. Provisional admission may be granted to those students recommended by a department whose average is below 3.00, provided their total record indicates a high probability of success.

Admission of a student from a foreign University may be approved by the Dean of the Graduate School if the student presents a superior academic record,
furnishes satisfactory evidence of adequate ability in English, and has sufficient financial resources. Such applications should be completed at least six months in advance of the proposed date of enrollment in the Graduate School. International students who have undertaken graduate study in other institutions will be accepted only after evaluation of their undergraduate records, as well as their performance in graduate study, and the minimum criteria, as described above, will apply.

Because of limitations within certain departments, it may be necessary to deny admission to some qualified applicants. Students who come to Washington State University before receiving the admission certificate do so at their own risk. For further details the Graduate Catalog should be consulted.

Transfer of Graduate Credits
Appropriate credits (with a grade of B or higher) earned in other accredited graduate schools may be applied to a limited extent toward an advanced degree; however, they may not be substituted for residence requirements. Use of WSU credit earned prior to formal admission to the Graduate School is restricted. For necessary interpretations, inquiries should be sent to the Dean of the Graduate School.

Summer Sessions
Credit earned during summer sessions of Washington State University may be applied in the same manner and subject to the same rules and regulations as credit earned during fall and spring semesters.

In a number of departments there are unusually good opportunities for research during the summer months. Summer work in the College of Education is planned especially to meet the needs of teachers and administrators.

Graduate Work Through Distance Degree Programs
Credit earned in graduate-level courses taken through the WSU Distance Degree Programs will be accepted on graduate student programs without limit, subject only to customary admission and program approvals.

No extension credits from other institutions, or work done by correspondence with this or any other institution, or credit earned by special examination may be used to meet advanced degree requirements.

Graduate Study by Seniors
Seniors who have at least a 3.00 grade point average in the last 60 hours of their undergraduate work at Washington State University may register for up to 6 semester hours of work in the Graduate School in excess of the number of hours required to complete the bachelor's degree. Graduate School approval is required at the time of registration. Only grades of B or higher may be applied toward an advanced degree. Work done by an undergraduate under other conditions may not be applied toward an advanced degree.

Seniors who wish to enroll in 500-level courses must obtain approval of the major advisor and the chair of the department or program in which the course is offered.

Registration
All graduate students must maintain continuous enrollment in the Graduate School, registering for each semester and summer session from the time of first enrollment until all requirements for the degree are completed. Continuous enrollment may be maintained by registering in one of the following categories: 1) full-time enrollment; 2) part-time enrollment; 3) graduate leave status enrollment.

Students on graduate leave status may discontinue enrollment for credit for a period of 12 months without penalty. After that time, graduate leave status students will be assessed a fee of $25. Students on graduate leave status will be considered by the Graduate School to be in good standing for up to four consecutive years. Graduate leave status enrollees who wish to enroll for credit must give the Graduate School one month notice prior to the enrollment date. Graduate students who fail to maintain continuous enrollment will be dropped from the University.

Special Projects or Independent Study (600), Master's Research, Thesis, and/or Examination (700), Master's Special Problems, Directed Study, and/or Examination (702), and Doctoral Research, Dissertation, and/or Examination 800 shall have as prerequisite regular or provisional student status in the Graduate School.

Registration Policy for Graduate Students Completing Degree Requirements
Graduate students must register for the required amount of 700, 702, or 800 credit during the semester or summer session in which they take their final examinations. Fall and spring semesters and summer session officially end at the time final grades are due in the Registrar's Office. Examinations are not normally scheduled between regular terms. However, students who have received special permission from the Graduate School to schedule final master's or doctoral oral examinations in the interim nonclass period after the end of a term will be required to register for the following semester or summer session.

Scholarship Standards
A student must earn a 3.00 grade point average for all course work (including all courses listed on the program and other graduate upper- and lower-division courses). No work of B- grade or less may be dropped from a program, nor can a course be repeated for a higher grade if the final grade is C or higher. Any course listed on the program in which a grade of C-, D, or F is earned must be repeated.

Any graduate student who fails to maintain a cumulative grade point average of 3.00 or higher for all course work subsequent to admission to the Graduate School will be dropped from the University. A student who is dropped may be permitted to re-enroll if a special recommendation is made by the chair of the major department with the concurrence of the Dean of the Graduate School.

Requirements for a Graduate Degree
The graduation requirements of the Graduate School, as published in the Graduate School Policies and Procedures Manual, in effect at the time of the student's initial admission as a regular or provisional graduate student, are those which must be met for completion of a graduate degree program. Departmental requirements for graduation are those in effect at the time the student files a program.

Subsequent changes in degree requirements of the Graduate School or in departmental requirements may be substituted at the option of the student upon approval by the master's or doctoral committee, by the department chair, and by the Dean of the Graduate School.

If a student is dropped from the University for failure to maintain continuous enrollment, the graduation requirements of the Graduate School are those in effect at the time of readmission to the Graduate School.

Time Limit
The time limit for the use of graduate credits toward a master's degree is six years from the beginning date of the earliest course applied toward the degree.

Each program for a doctoral degree is considered individually. Work for the degree should be completed within three years of the date of the satisfactory completion of the preliminary examination. At least four months must elapse between preliminary and final examinations for doctoral degrees.

Assistantships, Fellowships, and Scholarships
Teaching and research assistantships are available in most departments offering advanced degrees, and research fellowships are granted in some departments. For the student personnel program, staff assistants are appointed each year. The Graduate Catalog and Graduate School Policies and Procedures Manual should be consulted concerning qualifications, eligibility, and application procedures.

Assistantship appointments require part-time service. Students on appointment must maintain regular enrollment in graduate school for the duration of their appointments. Stipends vary according to the amount of required service, the extent of the student's training, and other factors. Graduate students appointed to assistantships of half-time service or more by the Board of Regents and who reside in the state of Washington while attending WSU may receive waivers of the resident operating fees and the nonresident portion of the tuition. Forms for assistantship or fellowship applications are included as part of the general application for admission to graduate school.

As most appointments are made by April 1, it is desirable to have applications completed as early as possible but no later than March 15.

Washington State University subscribes to the following resolution of the Council of Graduate Schools in the United States regarding scholars, fellows, trainees, and graduate assistants: “Acceptance of an offer of financial support...
(such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by a prospective or enrolled graduate student completes an agreement that both student and graduate school expect to honor. In that context, conditions affecting such offers and their acceptance must be defined carefully and understood by all parties.

"Students are under no obligation to respond to offers of financial support prior to April 15; earlier deadlines for acceptance of such offers violate the intent of this Resolution. In those instances in which a student accepts an offer before April 15, and subsequently desires to withdraw that acceptance, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer. It is further agreed by the institutions and organization subscribing to the above Resolution that a copy of this Resolution should accompany every scholarship, fellowship, trainees, and assistantship offer."

For information about special scholarships and fellowships write to the Dean of the Graduate School or the chair of the department concerned.

UNIVERSITY HONORS COLLEGE

Mary Wack, Dean
Honors Hall, Room 130
509-335-4505
www.wsu.edu/honors

The University Honors College at Washington State University is one of the oldest and most well-known honors colleges in the nation. The mission of the Honors College is to offer students of high ability and initiative an enriched, four-year core curriculum that satisfies University graduation requirements for general education. Students in the University Honors College are not required to complete General Education Requirements (GERs) because the Honors curriculum fulfills the graduation requirements.

The Honors curriculum is designed to be compatible with any major. Through small classes taught by experienced and enthusiastic faculty dedicated to scholarship and learning, the Honors College helps students develop a life-long love of learning, as well as skills in critical thinking, writing, public presentation, and information literacy. By completing an enriched series of courses, seminars, and a thesis, students admitted into the Honors College acquire the broad foundation of liberal learning in the natural and social sciences, the arts and humanities, and cultures of the world. In addition, the Honors College emphasizes study of foreign languages and education abroad as premier vehicles for gaining key competencies for an increasingly globalized society and economy. The Honors College offers a number of advantageous opportunities for education abroad.

Admission to the University Honors College

High school students who have shown outstanding scholastic ability and intellectual achievement, motivation, and extracurricular and community involvement, are encouraged to apply to the Honors College for admission. The Honors College welcomes students from diverse cultural and academic backgrounds who are willing to take risks and want to engage in this special academic opportunity. Students who are currently freshmen (by credits) at Washington State University, and achieve a grade point average of at least 3.5 their first semester, can also apply to join by completing the Honors College application. Transfer and international students may apply to the Honors College. However, we recommend talking with an advisor first to see whether the Honors curriculum is a good fit with the student’s program. For more information on the Honors College, please refer to the departmental section of this catalog and our Web site.

COLLEGE OF LIBERAL ARTS

Eric Lear, Interim Dean
Thompson Hall, Room 309
509-335-4581
www.libarts.wsu.edu/

As a bearer of the tradition of liberal education, the College of Liberal Arts places much importance on soundly conceived and well taught courses developed to give a properly balanced presentation of the basic areas of human endeavor. Students are assured a nucleus of courses in humanities, social sciences, biological sciences, and physical sciences, knowledge of at least one foreign language, and a concentration of subject matter in the major and minor fields. As the interests of students develop, students are encouraged to supplement their programs with elective courses of special cultural value, such as those in art, literature, and music.

The College of Liberal Arts offers a number of programs that prepare students for various professions and vocations. Graduate as well as undergraduate study is offered by most departments.

The college contributes to a liberal education through courses in the arts, humanities, and social sciences for students who major in the other colleges at WSU.

A number of curricula are offered to give pre-professional training (such as prelaw) to students who will then enter professional schools. At the same time these curricula are designed to provide a basic liberal education.

Washington State University’s graduate training program in clinical psychology is accredited by the American Psychological Association. The speech-language-pathology and audiology programs are accredited by the State Board of Education and the American Speech-Language-Hearing Association, Educational Standards Board. The Music Program is a full member of the National Association of Schools of Music.

The college, in cooperation with the Department of Teaching and Learning, prepares teachers for all levels of educational work. Students preparing for teaching at the elementary, secondary, and college levels usually complete the course work in their chosen field within the College of Liberal Arts. The specific requirements for certification and teaching majors and minors are listed under the Department of Teaching and Learning.

Admission

The requirements for admission to the College of Liberal Arts are the same as those for Washington State University.

High school students should include the following subjects as preparation for work in the college: at least four years of English, at least two years of one foreign language, three years of mathematics, two years of science, and three years of social sciences: participation in music, art, speech, and communication is also recommended. Selected departments have specific additional admission requirements.

Visit our Web site at libarts.wsu.edu.

Requirements for Graduation

The requirements for graduation include the University requirements for graduation plus additional College of Liberal Arts requirements in the humanities, social sciences, and sciences. See the graduation requirements for the College of Liberal Arts and the College of Sciences under Requirements for Graduation in the Summary of Academic Policies section of this catalog.

Departmental units include anthropology, communication, comparative ethnic studies, English, fine arts, foreign languages and cultures, history, philosophy, political science, psychology, sociology, speech and hearing sciences, music and theatre arts and drama, and women’s studies. In addition, several special curricula are offered and are listed alphabetically in this catalog as follows: American studies, Asia program, criminal justice, general studies (classics, digital technology and culture, humanities, international area studies, liberal arts, linguistics, religious studies, social science), Russian area studies, and social studies. Interdisciplinary minors are available in American Indian studies, film studies, global studies, and German, French, and Latin American area studies.

Prelaw curricula are offered through such departments as communication, history, philosophy, political science, and sociology. See Prelaw Curriculum under the Departments, Requirements, and Courses section of this catalog.
Degrees

The College of Liberal Arts offers programs of study leading to the following degrees:

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<tr>
<th>Degree</th>
<th>Department or Area</th>
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<tbody>
<tr>
<td>Bachelor of Arts</td>
<td>American Studies</td>
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<td>Anthropology</td>
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<td>Asian Studies</td>
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<td>Communication</td>
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<td>Comparative Ethnic Studies</td>
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<td>Criminal Justice</td>
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<td>Digital Technology and Culture</td>
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<td>English</td>
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<td>Fine Arts</td>
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<td>Foreign Languages and Cultures</td>
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<td>General Studies</td>
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<td>Speech and Hearing Sciences</td>
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<td>Theatre Arts and Drama</td>
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<td>Women's Studies</td>
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<td>Bachelor of Fine Arts</td>
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<td>Bachelor of Music</td>
<td>Music</td>
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<tr>
<td>Bachelor of Science</td>
<td>Psychology</td>
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<td>Master of Arts</td>
<td>American Studies</td>
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<td>Master of Fine Arts</td>
<td>Fine Arts</td>
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<td>Master of Science</td>
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<td>Doctor of Philosophy</td>
<td>Philosophy</td>
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The Intercollegiate College of Nursing/WSU College of Nursing in Spokane is a college of nursing shared in common by four institutions of higher education: Eastern Washington University, Washington State University, Gonzaga University, and Whitworth College.

Instructional programs are conducted at the baccalaureate and master's degree levels to develop responsible citizens and to provide the professional knowledge, skills, and values essential to the practice of nursing society. The undergraduate curriculum includes both liberal arts education and preparation as a generalist in the practice of nursing. The curriculum at the graduate level provides preparation for advanced and specialized nursing practice.

Undergraduate Program

WSU College of Nursing's undergraduate program is approved by the Washington State Nursing Care Quality Assurance Commission, is accredited by the National League for Nursing, and is approved by the American Association of Colleges of Nursing. Approximately 500 generic and registered nurse students are enrolled in the baccalaureate nursing program at Spokane, the outreach site in Yakima, the branch campuses in Tri-Cities and Vancouver, and throughout eastern Washington.

The program is open to students beginning a nursing career and registered nurses who wish to obtain a baccalaureate degree in nursing. Graduates practice in a variety of settings including hospitals, community health agencies, schools, long-term care facilities, occupational health programs, home health care and community mental health centers.

The curriculum consists of lower- and 300-400-level components and is four academic years in length. The first two years of the curriculum (lower-division component) are completed on the Pullman campus, one of the consortium schools, or at any institution offering courses equivalent to those taught at Washington State University.

The last two years of the professional curriculum (300-400-level component) are provided at the Intercollegiate College of Nursing building in Spokane, the outreach site in Yakima, and the WSU branch campuses in Tri-Cities and Vancouver.

Admission

All students planning to major in nursing must apply to the Office of Admissions at WSU and be admitted to the University. Requirements may be met at WSU or may be transfer credits from another institution of higher education. Applications to the 300-400-level nursing major in Spokane and Yakima are obtained from the Office of Admissions at WSU. Tri-Cities applicants should contact the Admissions Office on the Tri-Cities campus. Applications must be completed by February 15 for fall admission and September 15 for spring admission.

All registered nurses planning to apply to the nursing major at WSU Tri-Cities or WSU Vancouver must do so through the Admissions Office at the respective sites. Applications are available through the year. Students are encouraged to contact an advisor at their respective campus for lower-division advising.

Registered nurse applicants must be graduates of an approved community college or hospital school of nursing and be currently licensed or eligible for licensure to practice in the state of Washington at the time of application. Admission to the 300-400-level nursing major is based upon evaluation of the student's entire application. Applicants for admission to the college must present at least 60 semester hours or 90 quarter hours of acceptable credit from an accredited college or university. The credits must include those courses which are prerequisite to nursing.

Since the number of applicants to the Intercollegiate College of Nursing/WSU College of Nursing may exceed the number that can be admitted, there is no assurance that all persons meeting the admission criteria will be selected.

Graduate Program

Established in 1983, the Master of Nursing program prepares nurses for leadership in psychiatric/mental health nursing, community-based population focused nursing, and family nurse practitioner positions. The program is accredited by the Commission on Collegiate Nursing Education and approved by the American Association of Colleges of Nursing. Degree requirements can be completed in four semesters of full-time study. Individualized programs can be arranged to facilitate part-time study. Applications must be complete by March 1 for fall admission and by November 1 for spring admission.
Professional Development

The Professional Development Program focuses on specific learning needs of registered nurses and other professional health care workers. The technology and resource strengths of the Intercollegiate College of Nursing/WSU College of Nursing are used to provide cost effective opportunities to prepare individuals for professional certification, recertification, and/or relicensure. Contracted partnerships with health care agencies/organizations and with other WSU entities are arranged to design and offer specific professional offerings. For further information, visit www.nursing.wsu.edu.

Degrees

The degrees offered through the Intercollegiate College of Nursing/WSU College of Nursing are as follows:

<table>
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<tr>
<th>Degree</th>
<th>Area</th>
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<tbody>
<tr>
<td>Bachelor of Science in Nursing</td>
<td>Generalized practice of professional nursing</td>
</tr>
<tr>
<td>Master of Nursing</td>
<td>Community-based population-focused nursing</td>
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<td></td>
<td>Family nurse practitioner</td>
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<td></td>
<td>Psychiatric/mental health nurse practitioner</td>
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</tbody>
</table>

COLLEGE OF PHARMACY

Brian L. Pitcher, Acting Dean
Wegner Hall, Room 105
509-335-5901
www.pharmacy.wsu.edu

Admission

The College of Pharmacy offers a course of study leading to a Doctor of Pharmacy (PharmD) degree. The PharmD schedule of studies involves a six year commitment, consisting of two pre-pharmacy years and four professional years. The third professional year of the PharmD curriculum is delivered in the Health Sciences building located on the Washington State University Spokane campus. The fourth professional year of the PharmD curriculum consists of experiential training, and is conducted away from the Pullman campus of Washington State University. Students will be assigned to one of the following geographic locations: Spokane, Yakima, Vancouver, Tri-Cities, or Pullman. They will be expected to complete the majority of their rotations in their assigned geographic locations. Students will gain experience in a variety of health care environments, including community, institutional, and long-term care settings. Ninety-four students are enrolled each fall in the first professional year of the PharmD program. Pre-pharmacy requirements are listed under Pharmacy in this catalog.

The application period each academic year is from November 1 to February 1. Because the number of applicants to the professional program exceeds the number that can be admitted, no assurance can be given that those who successfully complete the pre-pharmacy requirements will be admitted to the Doctor of Pharmacy program. To request an application packet or for additional information regarding the Doctor of Pharmacy curriculum, please see the College of Pharmacy home page at www.pharmacy.wsu.edu, or contact the College of Pharmacy Office of Student Services at 509-335-5901.

Degrees

The College of Pharmacy offers the following degree programs: Doctor of Pharmacy (PharmD), Master of Health Policy and Administration, Master of Science (Pharmacology and Toxicology), and Doctor of Philosophy (Pharmacology and Toxicology).

COLLEGE OF SCIENCES

Michael D. Griswold, Dean
Morrill Hall, Room 208
509-335-5548
www.sci.wsu.edu

Faculty and curricula within the College of Sciences provide a sound and challenging education for students in disciplines covering the life sciences, physical sciences, environmental science, and mathematics. Both undergraduate and graduate degree programs within the college include classroom instruction, seminars, special projects, and research which together provide first-rate training to meet the demands of our diverse technological society.

Undergraduate students planning to pursue advanced work in graduate or professional schools are advised to plan curricula to meet admission requirements for advanced study.

One of the major service functions of the college is to provide course work in the sciences and mathematics for students majoring in other disciplines. Many of the college’s faculty have attained national and international reputations and have received numerous honors and awards. These include National Academy of Science membership, state and national teaching awards, Guggenheim Fellowships, Fulbright Scholarships, national career development awards, National Institutes of Health Merit Awards, and an Eli Lilly Award. Faculty frequently serve on national review panels of granting agencies for instructional and research support and on editorial boards of international journals.

Many undergraduate majors conduct a senior research project under supervision of a faculty member. This hands-on introduction to the scientific method is facilitated by the high quality of the teaching and research laboratories, computer facilities, and other infrastructure within the college. The Electron Microscopy Center, Nuclear Magnetic Resonance Center, GeoAnalytical Laboratory, Ownbey Herbarium, Conner Zoological Museum, Hudson Biological Reserve, and Meyer’s Point Biological Study Site are all facilities within the college. A strong technical services unit provides instrument shops, electronics construction and repair, graphics, and glassblowing. The college shares support and use of several University-wide facilities such as the Laboratories for Bioanalysis and Biotechnology, and the Environmental Research Center.

Major research areas in the college include biotechnology, shock physics, molecular and atomic interactions on surfaces, continuum mechanics, avian environmental physiology, regulation of cellular growth and differentiation, genetic engineering, cytogenics, photosynthesis, mechanisms of chemical reactions, biological evolution and ecology, environmental remediation, mathematical modeling of physical and biological processes, numerical analysis, reliability and fatigue studies, resource management, protein synthesis and export, repair of DNA, biochemical mechanism of muscle contraction, chemotaxis, coevolution of plants and animals, and reproductive biology.

Admission

Admission requirements for the College of Sciences are the same as those for Washington State University.

High school students should include the following subjects as preparation for work in the College of Sciences: four years of English, at least two years of one foreign language, three (and preferably four) years of mathematics, three (and preferably four) years of science, and three years of social science.

Requirements for Graduation

Graduation requirements for a bachelor's degree include the University General Education Requirements plus additional College of Sciences requirements in arts and humanities, social sciences, and sciences. Each academic department or program has additional graduation requirements which are included in the departmental descriptions in this catalog.
Degrees

The College of Sciences offers programs of study leading to the following degrees:

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<thead>
<tr>
<th>Degree</th>
<th>Department or Area</th>
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<tbody>
<tr>
<td>Bachelor of Science</td>
<td>Biochemistry</td>
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<td>Biology</td>
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<td>Chemistry</td>
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<td>Environmental Science</td>
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<td>General Studies</td>
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<td>biological sciences</td>
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<td>mathematics</td>
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<td>physical sciences</td>
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<td>Genetics and Cell Biology</td>
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<td>Geology</td>
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<td>Mathematics</td>
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<td>Microbiology</td>
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<td>Physics</td>
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<td>Zoology</td>
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<td>Master of Arts</td>
<td>Chemistry</td>
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<td>Master of Science</td>
<td>Biochemistry</td>
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<td></td>
<td>Biology</td>
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<td>Botany</td>
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<td>Chemistry</td>
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<td>Environmental Science</td>
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<td>Master of Regional Planning</td>
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<td>Doctor of Philosophy</td>
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Some of the graduate degree programs are jointly supported by the Colleges of Agricultural, Human, and Natural Resource Sciences, Engineering and Architecture, and Veterinary Medicine, thus providing a broad base for graduate training.

COLLEGE OF VETERINARY MEDICINE

Warwick Bayly, Dean  
Wegner Hall, Room G7  
509-335-1532  
www.vetmed.wsu.edu/

The curriculum of the College of Veterinary Medicine prepares students for positions in many areas of veterinary medicine, e.g., private practice, US Public Health Service, federal and state disease regulatory programs, industry, teaching, research, and military medicine. Fields of study include animal health, disease eradication, comparative pharmacology and toxicology, environmental sciences, laboratory animal medicine, and comparative biomedical studies to help resolve human disease problems.

The professional degree, Doctor of Veterinary Medicine, is recognized by all state and territorial licensing boards, as well as those in foreign countries. The College of Veterinary Medicine is accredited by the Council of Education of the American Veterinary Medical Association.

Admission

A minimum of seven years is required to obtain the degree of Doctor of Veterinary Medicine. The first three years of preveterinary training can be taken at any institution having courses equivalent to those taught at Washington State University, and the last four years are professional study directed by the College of Veterinary Medicine.

Applicants for admission to the College of Veterinary Medicine must present at least 60 semester hours of acceptable credits from an accredited college or University exclusive of military training and physical education. The 60 semester hours should include: 3 or 6 hours of social science and 3 or 6 hours of arts and humanities, to total 9 hours; 6 hours communication proficiency; 3 hours intercultural studies; 6 hours world civilizations; 3 hours mathematics proficiency (General Education Requirements for Graduation); and 33 hours including zoology or general biology, inorganic and organic chemistry, biochemistry, physics, mathematics, genetics, statistics, and electives.

Information regarding the acceptability of course credits should be obtained from the Director of Admissions, College of Veterinary Medicine.

Courses designed to fit these requirements are offered by Washington State, and the number of students admitted to preprofessional work is not limited. Since the number of applicants for admission to the professional course exceeds the number that can be admitted, no assurance can be given that all applicants who successfully complete the preprofessional curriculum will be admitted. WSU does not grant a BS in preveterinary medicine. Students taking preveterinary course work may declare a major in any subject, but are encouraged to major in animal science, biology, chemistry, microbiology, neuroscience, wildlife, or zoology.

A major in veterinary medicine is not declared until admission to the College of Veterinary Medicine has been granted.

A student seeking to enter should fill out an online application form at the College of Veterinary Medicine Web site, www.vetmed.wsu.edu, in early August. Deadline for submission of applications is October 1. A $60 application-processing fee will be assessed as part of completing the application. The Washington and Idaho Admissions committees, with the approval of the Board of Regents, selects those students to be admitted to the first year of the professional program. Applicants will be notified of their acceptance on or before March 15. Successful applicants who are not currently enrolled at WSU will be asked to fill out a uniform undergraduate application for admission to WSU. Unsatisfactory who wish to be considered the next year must present new applications.

In accordance with policies adopted by the Board of Regents, preference for admission to the College of Veterinary Medicine is as follows: 1) To qualified students coming from homes in the states of Washington and Idaho; 2) To qualified students certified and financed by the Western Interstate Commission for Higher Education (WICHE) Compact states; and 3) To all other qualified students.

Western Regional Higher Education Compact

The College of Veterinary Medicine at Washington State University has entered into a regional educational program with the states of Alaska, Arizona, Hawaii, Montana, New Mexico, Nevada, North Dakota, Utah, and Wyoming. Under the terms of this compact, a certified student admitted from one of these states is sponsored financially by the home state and is subject to the same fees as Washington resident students.

Students must apply to their home state for certification in addition to applying to the College of Veterinary Medicine, Washington State University. Additional information regarding regional veterinary education may be obtained from the Executive Director, Western Interstate Commission for Higher Education, PO Drawer P, Boulder, CO 80302, 303-541-0214, www.wiche.edu.

Regional Program in Veterinary Medical Education

Washington State University has agreed to engage in a regional program in veterinary medicine with the University of Idaho. The regional program involves instruction on the WSU campus and at the Caine Center (UI).
Degrees

The College of Veterinary Medicine offers courses of study leading to the degrees of Doctor of Veterinary Medicine, Bachelor of Science in Veterinary Science, Bachelor of Science in Neuroscience, Master of Science in Veterinary Science, Master of Science in Neuroscience, and Doctor of Philosophy (Neuroscience and Veterinary Science).
The main campus of Washington State University is co-located in Pullman and Spokane. WSU Spokane provides graduate and upper-division educational programs in a metropolitan research setting. It combines the high quality scholarship of a nationally ranked public research University with the unique opportunities provided by an urban setting to create an ideal atmosphere for learning. WSU Spokane’s 50-acre Riverpoint campus in the University District is immediately adjacent to a vibrant downtown Spokane and bordered by the Spokane River and Centennial Trail. The developing campus features new, state-of-the-art buildings that house design studios, labs, and clinics equipped with the latest in technology. A new academic center and library is under construction, to be completed in 2006. Nationally and internationally recognized faculty enrich the student learning experience.

Doctoral studies in design, education, and criminal justice prepare students for leadership roles in their respective fields. Master's degrees are available in architecture, criminal justice, education, engineering management, exercise science, health policy and administration, interior design, landscape architecture, speech and hearing sciences, teaching, and technology and innovation. Course work and internships for student teachers and for experienced educators seeking the superintendent's credential, principal's certification, and a post-master's school psychology certificate also are offered at WSU Spokane. The Spokane campus is the site of the final stages of professional education for all WSU students enrolled in pharmacy, and for many students enrolled in architecture, construction management, interior design, and landscape architecture.

Baccalaureate degree programs are offered in professional development, which combines principles of human development and organizational leadership, and exercise physiology and metabolism, an interdisciplinary degree exploring the interaction between diet and exercise and the role this plays in human health. Students may articulate from approved community college programs to complete a baccalaureate degree in interior design. A BS informatics degree is anticipated for fall 2005, pending final approval by the WSU Faculty Senate and Higher Education Coordinating Board.

Students at WSU Spokane range from full time, traditional students to working adults balancing family responsibilities and community involvement with their studies. More than 1,400 students from across the nation and around the world choose WSU Spokane as their destination. An active student government and a number of student professional clubs provide numerous student leadership and service opportunities.

As a regional medical center, Spokane offers a unique educational environment and access to clinical populations for WSU students and researchers. Internships and clinical placements, as well as research projects with practicing clinicians, are made possible by campus partnerships with the Spokane-area medical community. WSU Spokane’s research and service roles are further achieved through numerous programs, institutes, and projects. For example, the Health Research and Education Center (HREC) fosters the development of clinical and applied research in the biomedical and social health areas.

The Interdisciplinary Design Institute, a unique collaboration among the design disciplines at WSU, advances knowledge in order to enhance the quality of people’s lives in the built and natural environment. The Design Institute approach fosters collaborative learning and serves the community through design project challenges that build students’ professional skills. Faculty and students at the Design Institute regularly win national and international awards for their work.
2,000, WSU Vancouver offers a small college atmosphere with public University access. Since its establishment in 1989, WSU Vancouver has graduated more than 4,500 alumni who currently live and work in the region.

Degree Programs—Fifteen bachelor's and nine master's degrees are attainable through junior, senior, and graduate-level courses in more than 35 fields of study. Bachelor's degrees include anthropology, biology, business administration, computer science (BA and BS), digital technology and culture, education, English, human development, humanities, mechanical engineering, nursing, psychology, public affairs, and social sciences. Within these degree programs students may concentrate their studies in a variety of areas from anthropology to women's studies.

Master's degrees include business administration (MBA), computer science (MSCS), education (EdM), environmental science (MS), history (MA), mechanical engineering (MSME), nursing (MN), public affairs (MPA), and teaching (MIT).

Academic programs are geared toward meeting the unique needs of the region. Through WSU Vancouver's new School of Engineering and Computer Science, the B.S. in Manufacturing Engineering is the first degree of its kind in the state. Developed in response to demonstrated community need, the program educates engineers to accommodate the region's growing high-tech industry.

The WSU Vancouver Honors Program offers alternative coursework to meet General Education Requirements (GERs) through seminars, lecture series, and a senior project. These enriched classes emphasize discussion, critical analysis, problem solving, active learning, and writing through high quality instruction and personal attention and are open to entering students with a minimum gpa of 3.5.

Campus and Student Life—The campus features six academic buildings as well as a bookstore, cafeteria, study hall areas, sports court, fitness center, art galleries and a system of biking and pedestrian trails all framed in a beautiful campus setting between scenic views of Mt. Hood and Mt. St. Helens. Facilities also include computer, engineering, multimedia, nursing, psychology, and science laboratories as well as a library carrying more than 800 journals in hardcopy and 9,000 full text online journals and newspapers, a core collection of over 20,000 books, and access to more than 75 major bibliographic databases.

Student life centers around a variety of activities, including an active student government and a number of clubs and organizations, including Psychology Club and Model United Nations. In addition, a child development program on campus provides childcare opportunities for students, faculty, and community members with children.

Faculty and Research—More than 90 Ph.D. faculty provide WSU Vancouver with academic expertise spanning a variety of subjects. Faculty are actively involved in research in such areas as global climate change, domestic violence, criminal justice, child psychology, education, public affairs, and genetics, among others. Quality instruction and an emphasis on individual attention also characterize the WSU Vancouver student experience, with a faculty student ratio of approximately 15 to one.

Community Partnerships—WSU Vancouver's involvement in the many communities it serves ranges from the extension of its academic programs to the WSU Learning Center in Longview to partnerships with other universities and community colleges. Some of WSU Vancouver's community activities include:

The Co-Admission Program: The Co-Admission program provides an early bridge for students from Clark College in Vancouver and Lower Columbia College in Longview who plan to complete their bachelor's degree at WSU Vancouver. Co-Admission students fill out a single application, have their transcripts automatically transferred from one school to the other at no charge, and take advantage of services at both the community college and WSU Vancouver. Students also have the option to co-enroll at both institutions while completing lower-division courses.

The WSU Vancouver Engineering and Science Institute: The Institute is a partnership with Clark College and Lower Columbia College for students to complete a bachelor's degree in biology, computer science, and mechanical engineering, and a master's degree in computer science, environmental science, and mechanical engineering. Students take all four years of classes on the WSU Vancouver campus.

Partnerships for Elementary Science Education: Grants from the National Science Foundation have been instrumental in advancing science education in the region's elementary schools. WSU faculty serve as science resources for classroom teachers, working to strengthen their understanding of science principles and processes.

The Center for Columbia River History: A cooperative effort between WSU Vancouver, Portland State University, and the Washington State Historical Society, the center focuses on research and public education on the history of the Columbia River Basin.
Summary of Academic Policies

Registration
Instructions for registration and policies and procedures for dropping and adding classes are included in the Schedule of Classes, available at www.registrar.wsu.edu. See Appendix, Rules 47-69.

Class Attendance
Students who have not attended class and laboratory meetings during the first week of the semester will be dropped from the course by the department. Students should not assume that they have been dropped without verification from the department or Registrar's Office. Students having extenuating circumstances which prevent their attendance during the first week should notify the Office of Student Affairs. Student Affairs will notify instructors of the absence and the reason for it. Valid reasons for missing classes do not relieve the student of making up the work missed. See Appendix, Rules 71-73.

Enrollment Limit
The average semester credit load for undergraduate students is 15 or 16 credit hours. Students are not normally advised to enroll for more than 18 credit hours. When warranted, students may enroll for credits in excess of this limit. Students will not be allowed to enroll for 23 or more hours (10 hours for summer session) without written overload approval from their major department chair or Student Advising and Learning Center advisor. (See Tuition and Fees for additional credit hour charge over 18 hours.)

CougarCard
The CougarCard is the official WSU photo ID card. New students receive their CougarCard during New Student Orientation. The CougarCard is required for library privileges, obtaining and cashing checks, riding Pullman Transit and commuter buses, entry to the Student Recreation Center, access to WSU athletic events with a valid sports pass, and admission to many other University events and activities. Additional uses include Cougar CASH accounts, University dining accounts and access to certain campus buildings and offices.

Credit
Washington State University operates on the semester calendar. Each semester is 15 weeks long, plus one week of final examinations. One semester hour of credit is assigned in the following ratio of component hours per week devoted to the course of study: 1) lecture—one hour of lecture per week for each credit hour; 2) laboratory—three hours of laboratory per week for each credit hour; 3) studio—two hours of studio work per week for each credit hour; 4) ensemble—four hours of ensemble work per week for each credit hour. The proportion of time in each course assigned to lecture, studio, laboratory, or ensemble is recommended by the faculty of the department offering the course. The term “semester hour” corresponds with “credit,” “hour,” or “credit hour” and is abbreviated to “hour” in the description of courses in this catalog. See Appendix, Rules 27-30, 33, 34, 121, 123.

Credit Hour Requirements for Full-time Enrollment
The normal load for an undergraduate student is 15 or 16 credit hours per semester. Twelve credit hours per semester is considered a full load for undergraduate students. Ten credit hours is considered a full load for graduate students. Six hours in summer session is full time for undergraduates; five hours for graduate students. Part-time students do not share in certain student body privileges such as participation in recognized activities, WSU Health and Wellness Services, and student publications.

Graduate students on half-time teaching or research assistantships are expected to carry 10-14 credits per semester with no more than 12 hours of graded credit (3-6 in the eight-week summer session). The Graduate School Policies and Procedures Manual explains in detail the requirements for graduate students on appointment or taking examinations.

Tuition and Fees: Based on credit hour enrollment. See “Tuition and Fees” in this catalog.

Financial Aid: For financial aid purposes, full-time enrollment for an undergraduate student is 12 credit hours and half-time enrollment is considered to be 6-11 credit hours. For graduate students, full-time enrollment is 10 credit hours and half-time enrollment is considered to be 5-9 credit hours. Aid programs and policies require a student to be enrolled full-time. Students planning to enroll less than full-time should contact the Financial Aid Office. In order to maintain financial aid eligibility, students must meet Satisfactory Academic Progress (SAP) requirements for credit hour completion and cumulative grade point average (gpa). The complete SAP policy regarding credit hour completion, gpa, and degree completion time frame is available at www.finaid.wsu.edu and the WSU Time Schedule each semester.

Loan Deferrals: Deferrals on Perkins Loans and Federal Family Education Loans require at least half-time enrollment (6 credit hours) for undergraduate and graduate students. Five credit hours constitute half-time enrollment for a graduate student on a half-time assistantship.

Federal Family Education Loans deferrals, after a break in enrollment, require full-time enrollment (12 credit hours for undergraduates; 10 for graduate students). For this purpose, ten credit hours constitute full-time for a graduate student on half-time assistantship.

Student Government: In order to be qualified for election and tenure as a student member of the ASWSU Senate, a candidate shall be a full-time paying student and must be and remain in good academic standing.

Veterans Benefits: For veterans benefits, full-time enrollment for an undergraduate student is 12 hours, three-quarters-time is 9-11 hours, half-time is 6-8 hours, and less than half-time is 5 or fewer hours. For graduate students, full-time enrollment is 8 hours, three-quarters-time is 6 or 7 hours, half-time is 4 or 5 hours and less than half-time is 3 or fewer hours. Generally 7 hours for undergraduates and 4 hours for graduate students is considered full-time during summer session. Detailed information on training time eligibility can be obtained from the WSU Veterans Affairs Office.

International Students Holding F-1 and J-1 Visas: The Immigration and Naturalization Service requires that nonimmigrant F-1 and J-1 students be enrolled in a full course of study for the entire semester. (Twelve semester hours for undergraduate students and 10 semester hours for graduate students per semester excluding summer session is considered full-time.) Additional information on these requirements may be obtained from International Programs/International Students and Scholars, Bryan 108, 509-335-4508.

Auditing
No University credit will be allowed for auditing courses. To visit a class more than three times requires an audit card which must be obtained from the Registrar's Office. The written permission of the instructor is required. Ordinarily audit cards will be issued only for lecture courses or the lecture portion of laboratory courses. An audit fee is charged for other than regularly enrolled full-time-paying students. See Appendix, Rules 20, 21.

Cancellation of Enrollment
Students wishing to cancel their enrollment must do so during the first five days of the semester to avoid further financial obligation. Cancellation of enrollment (withdrawal from the University) is initiated through the Registrar's Office. See Appendix, Rule 70.

Classification of Students
Undergraduate students who have completed less than 30 semester credits are classified as freshmen, 30-59 1/2 semester credits as sophomores, 60-89 1/2 semester credits as juniors, and 90 and above as seniors.

Post-baccalaureate students are those who have received the baccalaureate degree but have not been admitted to the Graduate School. Sometimes called post-graduates, these students include those completing requirements for a second baccalaureate degree, those taking courses for personal enrichment, and those working toward teacher certification.

Graduate degree students are those admitted to a graduate program in a degree classification on the basis of a specific application to the Graduate School. See Appendix, Rule 25.
Numbering System of Courses
Lower-division
Courses numbered 100-199 inclusive are normally taken by freshmen.
Courses numbered 200-299 inclusive are normally taken by sophomores.
Upper-division
Courses numbered 300-399 inclusive are normally taken by juniors and seniors.
Courses numbered 400-499 inclusive are normally taken by juniors and seniors. These courses may be included in graduate programs provided they are published in the Graduate Study Bulletin and provided they are not specific requirements in preparation for graduate study.
Graduate
Courses numbered 500-599 inclusive are primarily for graduate students.
Qualified seniors may take these courses for graduate credit during their last year or summer session. Other qualified seniors may take these courses for undergraduate credit with permission of their department chair.
Courses numbered 600-800 have as a prerequisite regular student status in the Graduate School.
Professional
Courses numbered 500-800 and designated with a P following the course number are professional courses.

Computer Literacy
Washington State University offers a wide variety of courses, small group tutorials, instructional mini-seminars, and help sessions for students who feel they need assistance in acquiring computer skills.

Course Prerequisites
When applicable, prerequisites are listed in this catalog with the specific course prefix and number, preceded by the abbreviation: prereq. Prerequisites may be levels of competence, or courses which a student must have completed, or the standing a student must have achieved before enrolling for a specific course. For example, Calculus (Math 171) requires a prereq of Precalculus Algebra (Math 107), meaning that the student may not enroll for Math 171 until successfully completing Math 107. Prereq may also be as general as: two semesters of biology or concurrent enrollment. (See Biol 107.) Concurrent enrollment is indicated by the symbol c//. Prereq may include a level of expertise or a specified major, e.g., students may not enroll in Spanish 324 without first being fluent in Spanish, or students may not enroll in an advanced seminar before achieving senior standing in the major. Recommended prerequisites are listed, as well, preceded by the abbreviation: rec.

Questions concerning prerequisites should be referred to the instructor of the course. Students who have not met all prerequisites may be excluded from the course, or the instructor may waive prerequisites based on demonstrated competence or equivalent academic experience.

Field Trip Guidelines
For classes or other instances in which students are expected to participate in field trips, this expectation should be included in the catalog and/or course syllabus. For classes, the reference to the field trip listed in the course syllabus should include any required fees, how travel would be accomplished, alternatives (if any), and the consequences of not participating in the required field trip.

When travel is required, the responsible faculty or staff member should arrange for the transportation. If classes are to be missed, the responsible faculty or staff member should also provide the student participants with a statement concerning absence from classes that can be given to the students’ instructors. Transportation can be scheduled through the University motor pool in accordance with section 95.35, Business Policies and Procedures Manual. The University’s liability coverage is provided by Chapter 4.92 of the Revised Code of Washington (RCW). In those instances where students are permitted to drive their own cars and other students are permitted to ride with them, the responsible faculty or staff member, acting as the University’s representative, should request the student drivers to verify that:

1. They have valid driver’s licenses.
2. They have minimum liability insurance required by the state of Washington ($25,000 bodily injury per person, $50,000 per accident, $10,000 property damage).
3. The student drivers’ vehicles meet the state’s standard safety requirements.
4. The passenger capacity of the vehicles will not be exceeded.

The supervising University representative should also ensure that participants are appropriately dressed and properly advised as to safety requirements for the activity involved.

Certification of a Major
An undergraduate may certify an academic major upon completion of 24 semester hours with the approval of the appropriate department chair and notification to the Student Advising and Learning Center.

A student who has completed 60 semester hours should be certified in a major. The student initiates the certification procedures at the Student Advising and Learning Center (SALC), acquires the signatures of the academic advisor and the department chair, and returns the signed documents to the SALC Office. Certified majors who wish to transfer to another academic major do so by requesting, from the Registrar’s Office, a change of major card, and obtaining the approval and signature of the department chairs of the former major and the new major.

Students who satisfy the minimum University requirements plus any departmental core requirements with a 2.0 cumulative GPA are qualified for certification except in those departments whose majors are impacted or whose certification requirements are higher. Consult the departmental section of this catalog for specific departmental requirements.

SPECIAL NOTE ON UNDERGRADUATE CERTIFICATION: Since academic departments may establish additional requirements for those seeking admission to specific programs, students are reminded that admission to Washington State University does not ensure acceptance into any department or program as a certified major and degree candidate. Several academic programs, including architecture, business, communication, computer science, construction management, economics, education, engineering, environmental science, fine arts, hospitality business management, interior design, landscape architecture, mathematics, music, nursing, pharmacy, psychology, and veterinary medicine, are unable to accept all qualified students. In these situations, and others which may arise in the future, the most highly qualified students will be selected up to the enrollment limits in the specific program.

Departments and programs designated as impacted or those units directed to raise certification standards by external or certifying agencies may require more than the minimum 24 hours for certification and a GPA higher than the minimum 2.0. Academic units may also require completion of one or more specific courses prior to certification. Units must include in their certification requirements a mechanism whereby qualified transfer students can be certified upon admission. These requirements for immediate certification may include standards more rigorous than the minimum requirements, but prior enrollment per se at WSU cannot be a condition for certification of transfer students. See Appendix, Rule 53, 55, 56.

Minor, Second Major, or Second Baccalaureate Degree
A student who has completed 60 semester hours and is certified in a major may certify a second major or a minor with the approval of the department concerned. The student should consult with the department concerning hours and grade point requirements and an approved schedule of studies to meet such requirements.

A second major requires completion of departmental requirements for the major exclusive of General Education Requirements. A minor requires a minimum of 16 semester hours, half of which must be in upper-division course work. Upon completion of the requirements, the department will notify the Registrar’s Office, and the minor or second major will be posted on the student’s permanent record (transcript). A list of approved minors is published in the Time Schedule.

A student who desires to complete a second baccalaureate degree shall satisfy the second degree program and college requirements and present not less than 150 semester hours of credit. The first bachelor’s degree, whether at WSU or at another accredited institution, is understood to fulfill all University require-
Grading System
Washington State University uses letter grades and the four-point maximum grading scale. The grade A is the highest possible grade, and grades below D are considered failing. Plus or minus (+) symbols are used to indicate grades that fall above or below the letter grades, but grades of A+ and D- are not used. For purposes of calculating grade points and averages, the plus (+) is equal to .3 and the minus (-) to .7 (e.g., a grade of B+ is equivalent to 3.3, and A- is 3.7). Guidelines for grading may be found in Rule 90, listed in the Appendix.

A—4 grade points per credit hour.
B—3 grade points per credit hour.
C—2 grade points per credit hour.
D—1 grade point per credit hour.
F—no credit; 0 grade points. (Credits attempted are calculated in gpa). Fail.
S (Satisfactory)—no grade points. (Credit not calculated in gpa) Grade given upon satisfactory completion of courses numbered 499, 600, 700, 702, 800, Special Examinations (Rule 15), and other courses duly authorized for S, F grading by the Faculty Senate. (Courses approved for S, F grading are footnoted in the Time Schedule.) A, S, or F grades only are used for physical education activity courses. Courses approved for S, F grading may also be graded S at midterm indicating satisfactory progress.
M (Marginal Pass)—no grade points. (Credit not calculated in gpa). Grade given only by the College of Veterinary Medicine.
P (Passing)—no grade points. (Credit not calculated in gpa) A satisfactory grade for a course taken under the pass, fail grading option. Instructors will turn in regular letter grades for all students enrolled in courses under the pass, fail option, but grades will appear on the student's permanent record as P (Passing) or F (Failing).
I (Incomplete)—no credit or grade points. The term is used to indicate that a grade has been deferred. It is for students who for reasons beyond their control are unable to complete their work on time. Undergraduates or graduates who receive an I grade in an undergraduate course (100-499) have up to the end of the ensuing year to complete the course, unless a shorter interval is specified by the instructor. If the incomplete is not made up during the specified time or if the student repeats the course, the I is changed to an F. (See Rule 34.)
Faculty are required to submit an instructor's Incomplete Grade Report (IGR) to the departmental office for every I given. The IGR must specify conditions and requirements for completing the incomplete, as well as any time limitations less than one year.
W (Withdrawal Passing)—no credit or grade points. Used if the student has filed, in the Registrar's Office, official notice of withdrawal from the course prior to the end of the 9th week, withdrew passing in accordance with Rule 69, or withdrew from the University prior to the last day of instruction. For undergraduates who enter WSU in fall 1998 or later, the maximum number of WSU withdrawals is 6, not counting withdrawals that result from the cancellation of enrollment. For undergraduates who enter WSU in the fall 2004 or later, the maximum number of WSU withdrawals is 4, not counting withdrawals that result from the cancellation of enrollment. After the 4th or 6th withdrawal, a student may, in exceptional circumstances, submit a petition through the Registrar's Office for an exception to the withdrawal limit. See Appendix, Rule 68, 69.
X (Grade Withheld)—no credit or grade points. Denotes continuing progress toward completion of special problems, research, thesis, or doctoral dissertation, i.e., 499, 600, 700, 702, 800; X grades are converted to S upon satisfactory completion. An X grade may also be used when no final grade is reported due to instructor's illness or absence from town. See Appendix, Rule 90, 92, 98-103.

Grade Point Average
The student's grade point average (gpa) is computed by dividing grade points earned by the number of credit hours attempted. Grades P and S do not carry grade points, and the credit hours are not calculated into the gpa. Credits attempted for F grades are calculated into the gpa. Transfer and other nonresident credit is not computed in the Washington State University grade point average. The following example illustrates computation of the gpa:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Grade</th>
<th>Grade points</th>
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<tbody>
<tr>
<td>Engl 301</td>
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<td>A</td>
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<tr>
<td>Bio S 422</td>
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<td>Soc 420</td>
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<td></td>
</tr>
<tr>
<td>Soc 499</td>
<td>4</td>
<td>S</td>
<td></td>
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</table>

Credit hours attempted (9) divided into total grade points earned (27) = gpa (3.00) Total hours earned: 15

Note: P and S grades yield no grade points, thus are excluded from the gpa calculation.

Courses taken by correspondence yield grade points toward graduation. Grades earned in courses through Extended University Services sponsored by Washington State University yield grade points toward graduation. Correspondence or extension work submitted for transfer credit yields credit only if completed with a grade of C or better. See Appendix, Rules 99-103.

Grade Reports
Midsemester grades are issued to freshmen students with fewer than 28 semester hours of credit and to transfer students with less than 90 hours in their first semester at WSU and are made available online at www.metro.wsu.edu. Students wishing a copy of their grades may print them from the Web or request a copy at the Registrar's Office.

Transcripts
An official copy of a student's academic record at Washington State University that bears the official seal of the University and the signature of the Registrar is referred to as a transcript. The transcript must include all work taken at Washington State University. Requests for transcripts must be accompanied by the student's signature and a $4.58 fee per copy. Order forms are available on the Web at www.transcript.wsu.edu/. Phone orders for transcripts cannot be accepted. For rush service, call 509-335-5330. NOTE: Financial indebtedness to the University will prevent the release of a student's transcript.

Transcripts of secondary or higher education study that have been submitted to WSU as a requisite for admission cannot be returned to the student. Students desiring transcripts from other institutions must order official transcripts directly from the institution at which the work was taken. WSU does not issue or certify copies of transcripts from other institutions.

Repetition of Courses
Courses completed with a grade of C or above may not be repeated for credit or grade points.

Students may repeat courses in which they have received a grade of C- or below one time at WSU during fall or spring semesters. If a student repeats a course in which an I (incomplete) grade was received, the I grade will be changed to F.

When a student repeats a course and earns another grade, the series of repeats and grades will be retained on the student's official record. However, the last grade only shall be calculated in the cumulative grade point average and contribute to the total number of hours required for graduation.

In determining scholarship for graduation honors, the first grade only shall be used. Repeats by correspondence, extension, or in residence at other institutions must be reported orally or in writing to the Registrar's Office. See Appendix, Rule 34.
Courses Approved for Repeat Credit

Some courses have been approved for repeat credit, i.e., the student may enroll in the same course during a subsequent semester and additional credit and grade points will be accumulated. An example of such a course would be Special Topics in which the course content may vary from semester to semester. Courses approved for additional credit, with maximum credit allowable, if any, will be indicated in the catalog, e.g., may be repeated for credit; cumulative maximum 6 hours. See Appendix, Rule 34.

Pass, Fail Grading Options

Pass, fail options are available for undergraduate and graduate students. Specific characteristics of the two options are listed below. During registration, students indicate that they wish to enroll in the course on a pass, fail basis. The advisor's approval is required for undergraduates. Information indicating which students are enrolled on a pass, fail basis will not appear on class lists transmitted to instructors. Instructors turn in regular letter grades for all students, and the Registrar's Office will change all grades of A through D to P for those enrolled pass, fail. The P grades earned by pass, fail enrollees will not be included in computing the gpa; however, F grades earned by fail, pass enrollees will be included in gpa computations. Courses approved for S, F grading (Rule 90f) are excluded from the pass, fail option. Courses approved for S, F grading are footnoted in the Time Schedule.

A student may change a pass, fail enrollment to a regular letter-graded enrollment, or vice versa, during the first three weeks of classes. After the third week and through the last day of instruction in a semester (end of the 15th week), a letter-graded enrollment cannot be changed to a pass, fail enrollment.

Undergraduate Pass, Fail Option: A total of six courses may be taken on a pass, fail basis by students initiating and completing work for a baccalaureate degree at Washington State University. No courses designated as meeting General Education Requirements for graduation may be taken pass, fail. The P grades earned by pass, fail enrollees will not be included in computing the gpa; however, F grades earned by pass, fail enrollees will be included in gpa computations. Courses approved for S, F grading (Rule 90f) are excluded from the pass, fail option. Courses approved for S, F grading are footnoted in the Time Schedule.

A student may change a pass, fail enrollment to a regular letter-graded enrollment, or vice versa, during the first three weeks of classes. After the third week and through the last day of instruction in a semester (end of the 15th week), a letter-graded enrollment cannot be changed to a pass, fail enrollment.

Undergraduate Pass, Fail Option: A total of six courses may be taken on a pass, fail basis by students initiating and completing work for a baccalaureate degree at Washington State University. No courses designated as meeting General Education Requirements for graduation may be taken pass, fail. No more than two courses may be taken on a pass, fail basis during any given semester. Two courses is the limit for summer session. Students in the College of Veterinary Medicine with advisor approval may enroll for a total of six courses in the professional curriculum on a pass, fail basis, subject to the regulations listed above. Allowances for transfer students are as follows:

<table>
<thead>
<tr>
<th>Transfer status upon entering WSU</th>
<th>Pass, fail allotment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-44 credits</td>
<td>six courses</td>
</tr>
<tr>
<td>45-59 credits</td>
<td>five courses</td>
</tr>
<tr>
<td>60-74 credits</td>
<td>four courses</td>
</tr>
<tr>
<td>75-89 credits</td>
<td>three courses</td>
</tr>
<tr>
<td>90 and above credits</td>
<td>two courses</td>
</tr>
</tbody>
</table>

University Honors College courses may be taken on a pass, fail basis only with the permission of the Honors College coordinator.

Departments and programs may deny their majors permission to take, on a pass, fail basis, courses in their major field or courses needed to meet departmental requirements.

Departments and programs may refuse to accept courses needed to meet the above requirements if the courses were completed on a pass, fail basis before the student was accepted into the department or program.

Graduate Pass, Fail Option: Class 5 (except those working on a second baccalaureate degree) and Class 6 (graduate) students are eligible to take courses on a pass, fail basis, but such work cannot be in the student’s official degree program or used for removal of a specific undergraduate deficiency. Credit hours earned under fail, pass are counted toward assistantship minimum hour requirements. There is no limit on the number of hours a graduate student may take on a pass, fail basis. See Appendix, Rules 50, 90.

Honors

President's Honor Roll. An undergraduate student will be named to the President's Honor Roll under either of the following conditions:

(a) By achieving a grade point average of 3.75 in at least 9 graded hours in a single term at Washington State University.

(b) By achieving a cumulative grade point average of 3.50 based on at least 15 cumulative hours of graded work at Washington State University.

Graduation Honors. Candidates for baccalaureate degrees who have completed at least 30 hours of graded work (grades in which grade points are awarded) at Washington State University will graduate summa cum laude if the cumulative grade point average for work completed at Washington State University is 3.90 or better, will graduate magna cum laude if cumulative grade point average is 3.7 to 3.89, and will graduate cum laude if the minimum cumulative grade point average is 3.50 but less than 3.70. The appropriate Latin phrase will be printed on the diploma and on the final transcript. Qualified students electing to participate in the Honors College who complete its requirements satisfactorily, regardless of whether they qualify to graduate summa cum laude, magna cum laude, or cum laude, will receive a certificate of completion and a printed notation on the final transcript. Computation of graduation honors will be done prior to the final semester to allow for publication of the appropriate honors in advance of graduation. However, following the student's final semester, the Registrar's Office will recompute the student's gpa including the last semester's work, and only this computation will determine official graduation honors. See Appendix, Rules 133, 137.

Academic Complaint Procedure

Students having complaints about instruction or grading should refer them first to the instructor. If not resolved, then the student may refer the complaint in writing to the chairperson of the department in which the course is offered by the end of the last day of the following semester (excluding summer term). After the chair's decision, the student or the instructor may appeal to the Dean’s Office within 20 business days of the chair's decision. The decision of the dean is the final step. The University Ombudsman is available at any stage for advice or assistance in resolving academic complaints. See Appendix, Rule 104.

Academic Deficiency

Washington State University expects students to maintain academic standards of excellence and make satisfactory academic progress toward their degree objectives. Undergraduate students are in good academic standing if both their current WSU semester and cumulative grade point averages are 2.00 or above. Students not meeting the criteria above are considered academically deficient. An undergraduate (undeclared or certified major) student, regardless of his/her cumulative grade point average, but whose grade point average in each of the last two semesters is below 2.00 will be considered deficient and will be dismissed from the University. For process see Rule 40. As a condition of continued enrollment, an undergraduate (undeclared or certified major) who at the end of any semester has failed to maintain a 2.00 cumulative grade point average and who is thus considered academically deficient must complete an interview scheduled through the Student Advising and Learning Center. A certified major who has been interviewed by SACL may be decertified by the department. An undergraduate student who, at the end of any two consecutive or any total of three semesters, has failed to maintain a 2.00 cumulative grade point average will be dismissed from the University. For process see Rule 40. Students who are dismissed from the University are required to remain out of WSU for at least one academic year. Dismissed students, including certified majors, may apply for reinstatement early by applying to a Review Board administrated by the Student Advising and Learning Center. Early reinstatement will be granted only when extenuating circumstances are present. In all cases, written documentation to support the application for early reinstatement is required. Declarations of good intentions are not sufficient. Students seeking future reinstatement after the year away from WSU must provide, as part of the application for readmission, additional documentation to the Student Advising and Learning Center that demonstrates improved academic performance at the college level and a readiness for academic success at WSU. An undergraduate student who has been reinstated after becoming deficient under Rules 37 or 39 or is enrolled under 38 will be on academic probation for one semester. The specific conditions of enrollment for students who are on official probation will be determined by the interviewer or a Review Board. Students on probation who fail to comply with the conditions of their probationary enrollment will be dismissed from the University.

Decertification

A certified major who falls below the minimum departmental requirements may be decertified by the department after two semesters of falling below that minimum. See Appendix, Rules 56, 37-43.
Student Rights Regarding Education Records

Federal law requires Washington State University to annually notify students currently in attendance at the University of their rights under the Family Educational Rights and Privacy Act (FERPA). Under FERPA, a student has the right to:

1. Inspect and review his or her education records. “Education records” means those records that are directly related to a student and are maintained by Washington State University or by a party acting for Washington State University;
2. Request the amendment of the student’s education records to ensure that they are not inaccurate, misleading, or otherwise in violation of the student’s privacy or other rights;
3. Consent to disclosures of personally identifiable information contained in the student’s education records, except to the extent that FERPA authorizes disclosure without consent; and
4. File with the Department of Education a complaint concerning alleged failures by Washington State University to comply with the requirements of FERPA.

Washington State University may release directory information contained in a student’s education records. “Directory information” means information contained in an education record which would not generally be considered harmful or an invasion of privacy if disclosed. Directory information includes name (including any former name), local and permanent addresses and telephone numbers, electronic mail address(es), major and minor fields of study, class, participation in officially recognized activities in sports, weight and height of members of athletic teams, dates of attendance, enrollment status (e.g., undergraduate or graduate, full-time or part-time), degrees, certificates, and awards received including the President’s Honor Roll, and the most recent previous educational institution attended by the student. Students may request that the University not release directory information by filing a request with the Office of Payroll Services or online at www.it.wsu.edu/AIS/ATMS/atsms.htm.

The Washington State University policy on student records can be found in the Washington Administrative Code 504-21. A complete text of this policy is available upon request from the Registrar’s Office, 346 French Administration Building.

Application for Graduation

A student who has (a) completed any of the four-year collegiate curricula, and (b) satisfied the University Requirements for Graduation and any additional departmental or college requirements with a minimum 2.00 gpa may become a candidate for the bachelor’s degree, depending upon the field of study. NOTE: Financial indebtedness to the University will prevent the release of a student’s diploma. The award of a degree is conditioned upon the student’s good standing in the University and satisfaction of all University graduation requirements. “Good standing” means the student has resolved any unpaid fees or acts of academic or behavioral misconduct, and complied with all sanctions imposed as a result of the misconduct. The University shall deny the award of a degree if the student is dismissed from the University based on his or her misconduct (See Rule 45 and the Student Conduct Code).

Application for a bachelor’s or DVM degree should be made at the Registrar’s Office near the end of the junior year and at least 60 days prior to the expected graduation date. Students must have 70 credit hours and be certified in their major and option before applying. A graduation application must be on file in the Registrar’s Office before a student can graduate. A graduation fee must be paid at the time of application.

Candidates must present a minimum of 120 semester hours of credit for graduation including a minimum of 40 semester hours of credit in upper-division courses and a minimum of 30 hours earned at WSU for a four-year degree. 500-level courses will count toward the upper-division requirements, but an undergraduate may not be required to enroll in or complete a 500-level course as a requirement for a baccalaureate degree.

A student desiring a second bachelor’s degree shall satisfy the second degree program and college requirements and present not less than 150 semester hours of credit to receive the second degree. Credits applied toward a graduate degree may not be used for a baccalaureate degree.

A student who has completed any of the five-year curricula, earned a minimum of 150 semester hours of credit, and met the implied requirements in the paragraphs above may become a candidate for the bachelor’s degree in that field of study.

Flexible enrollment (correspondence course) credit is limited to not more than 25 percent of the total hours required for any undergraduate degree.

Students are required to do their senior work under the direction of the college in which the degree is to be granted. The degree granted and the schedule of studies for a given curriculum will be found in the material for the college or department concerned.

Students are required to earn a C average or better in all work taken at this institution. Any deficiency on transfer credit must be removed by work taken through Washington State University.

For otherwise qualified students with disabilities, individual course requirements or specific requirements within courses may be waived. Waivers of departmental requirements must be approved by the major department. Waivers of specific requirements within courses must be approved by the department teaching the course. A request for waiver of University requirements must be made directly to the General Education Director and be approved by the student’s department chair and college dean. Petition forms for waiving University and college requirements are available in the Registrar’s Office. See Appendix, Rule 106.

Catalog Options and Limitations

The University requirements for graduation as published in the catalog in effect at the time of the student’s initial enrollment are those which must be met for completion of an undergraduate degree program. University requirements for graduation include the General Education Requirements. For transfer students, the initial enrollment date shall be that upon which the student entered post-secondary education. Subsequent changes in degree requirements, as published in the catalog or amended by the Faculty Senate, may be substituted at the option of the student.

This policy does not apply to major and specific college requirements. All major program and college requirements (including those in a college which does not have separate departmental requirements) are set at the time the student initially certifies the major. Changes in major requirements after the time of certification may apply to all students provided they neither require a student to enroll in more than a normal complement of credit hours in any semester nor prolong the time necessary to complete degree requirements. Department and program chairs have authority to waive or provide substitute course work for major requirements.

Undergraduates who will not graduate within the normal minimum degree time frame (four years for four-year baccalaureate programs, five for a five-year, and six for a six-year program) have a total of eight years in four-year programs and ten in five- and six-year programs to complete their degrees under their original catalog listing of University graduation requirements. Those who take longer to complete their degrees must meet the University and General Education requirements for graduation as published in the catalog four years prior to the date of graduation. In addition, if more than four years elapses between certification and graduation, the major and specific college requirements in place four years prior to graduation will apply. Students who initiated their post-secondary education prior to fall 1991 (fall 1993 for transfer students) may, if they wish, fulfill the general University requirements for graduation as published in the 1989-91 catalog.

Official name changes in degree titles will go into effect automatically for all students according to the effective date approved by the Faculty Senate. Students currently enrolled and certified in a degree program at the time of a name change will have the privilege of graduating with either the old or the new degree title. The option of selecting the old degree title will originate with the student, and it will be the responsibility of the department, in signing the degree application, to determine whether or not the student is eligible (i.e., when the student certified).

Statement of Institutional Responsibility

As a general rule, undergraduate students who are certified majors or graduate degree candidates can assume that a degree will be granted if they maintain continuous enrollment and meet all requirements as listed in Academic Regulations, Rules 114-118. However, because of serious reductions in financial support, loss of faculty, or for other significant reasons, the University may from time to time find it necessary to discontinue a degree program. When this occurs, further admission into the degree program will be frozen effective with the official action dropping the degree, and every effort will be made to allow currently enrolled majors and graduate degree candidates to complete their
degrees within a reasonable period of time. To facilitate this process, department and program chairs (or the appropriate dean) have the obligation to provide for the individual needs of these students: e.g., (1) students may be encouraged to complete their requirements in similar or related degree tracks; (2) although University Requirements for Graduation and the minimum total hours for the degree may never be waived, the student’s major department may waive or substitute departmental degree requirements (approval of the Graduate School is required for graduate students); (3) undergraduate students may be allowed to complete remaining requirements at another institution under Rule 114(a) 5. Consequently, the General Education curriculum attempts to define the individual student involved, except as otherwise noted in this catalog or the Graduate Studies Bulletin.

University Requirements for Graduation
University requirements for the baccalaureate degree have been established by the faculty as an expression of the common degree expectations for all Washington State University graduates. While the greater part of students’ courses of study will be devoted to their major field or specialization, the foundation of the undergraduate curriculum is the General Education Program. General Education is, in fact, an attempt to accommodate the increasing specialization of the University within the broader, traditional objectives of higher education while encouraging students to develop themselves to the fullest extent possible. The role of General Education in the modern higher educational curriculum is to address needs and objectives not adequately served by academic specialization.

Realizing Individual Student Potentials: One purpose of higher education is to foster and nurture potentials in the individual; hence, General Education aims at personal enrichment, cultural awareness, and breadth of knowledge. These goals imply a curriculum that emphasizes the aesthetic and appreciative faculties, encourages experimentation and creativity, and offers opportunities for introspection and the testing of one’s own values.

Preparation for Membership in the Community: General Education is also recognized as the value of higher education within the larger community; it prepares people for their common activities as citizens in a free society. Thus, it should provide opportunities for leadership and service while attending to education for the common life. Shared values growing out of common educational experience help to bind society together and to make communication possible. Consequently, the General Education curriculum attempts to define and explore the ever-changing body of knowledge which is deemed valuable for all to know. The needs of citizens include the development of higher-level intellectual skills, including formal literacy and critical thinking. The faculty has identified writing proficiency in particular as a priority at WSU. Accordingly, all students will satisfy WSU’s writing proficiency standards for graduation. In addition, the curriculum is designed to emphasize study of the relevant past, with the objective of developing an informed, mature, and critical mind.

Providing a Foundation for the Major: Education for the common life, however, must also include the skills and knowledge useful as a base for careers as well as for citizenship. Communication and reasoning skills have multiple functions; they serve as a base for the major, and they enhance the student’s overall abilities and intellectual maturity. To function well in the workplace, one must be able to see beyond its confines. Consequently, exposure to different values, perspectives, and cultural traditions is a valuable preparation for the kind of work that college graduates do, and the General Education curriculum can enrich the student’s sense of the context and meaning of his or her career activities.

Methodological Competence and Integration of Knowledge: The organization of the General Education curriculum is an expression of our historical experience of how new knowledge has been acquired in the past and how it is likely to be acquired in the future. Consequently, the curriculum stresses the acquisition of a working knowledge of a broad range of scholarly disciplines. One of the goals of General Education is therefore understanding of the major fields of knowledge and the interrelationships between them. However, since students cannot possibly learn everything they need in the four or five years of their undergraduate experience, the curriculum prepares students for continued, life-long learning. Library skills and a general competence with computers are increasingly important in learning how to learn.

Requirements for Graduation
1. Hours and grade points—a minimum of 120 semester hours with a grade point average of 2.0 or better.
2. Upper-Division (300-400-level)—a minimum of 40 semester hours.
3. The University Writing Portfolio (Mid-Career Assessment)—Successful completion of the University Writing Portfolio is a requirement for graduation at WSU. Students must satisfy this requirement once they have earned 60 credit hours. To complete the Junior Writing Portfolio students must submit three papers they have written as a result of previously assigned college course work and take a Timed Writing Exam consisting of two writing exercises. Upon completion of 60 credit hours, students are given two semesters to satisfy the Junior Writing Portfolio. The Junior Writing Portfolio must be completed before a student enrolls in a [M] course (see below). Visit www.juniorportfolio.wsu.edu for more information.
4. Writing in the Major [M]—Two courses identified as writing in the major [M] must be included in course work taken to meet departmental requirements. Consult the requirements in the department in which you intend to major.
5. General Education Program requirements—All students, regardless of major, must fulfill the minimum requirements of WSU’s General Education Program, which are described below, or University Honors College. See Appendix, Rules 106-137.
6. The award of a degree is conditioned upon the student’s good standing in the University and satisfaction of all University graduation requirements. “Good standing” means the student has resolved any unpaid fees or acts of academic or behavioral misconduct, and complied with all sanctions imposed as a result of the misconduct. The University shall deny the award of a degree if the student is dismissed from the University based on his or her misconduct (See Rule 45 and the Student Conduct Code).

College of Liberal Arts
College of Sciences
Graduation Requirements
In order to provide a broad-based education in the humanities, social sciences, and sciences, the College of Liberal Arts and the College of Sciences require the following in addition to University Requirements for Graduation. The additional college graduation requirements have already been incorporated in the departmental requirements listed in this catalog.

Arts and Humanities [H] [G], Social Sciences [S] [K], and Intercultural Studies [I] [G] [K]—6 credits in addition to the General Education Program requirement.

Sciences [B] [P] [Q]—2 credits (including a 1-credit laboratory [L]) in addition to the General Education Program requirement.

Foreign Language—One year (two semesters or three quarters) of one foreign language at the University level or two years of one foreign language at the high school level. Demonstrated proficiency by means of a Foreign Language Examination may substitute for actual course work.

Transfer students are responsible for meeting the above College of Liberal Arts and College of Sciences requirements. This includes those students holding the approved Associate of Arts or Associate of Science degree from Washington community colleges or Associate of Arts—Oregon Transfer degree from an Oregon community college.
The General Education Program

The Structure of the General Education Program

Students are required to take a minimum of 40 credit hours distributed among the categories listed below.

<table>
<thead>
<tr>
<th>Tier I: 15 semester credit hours</th>
<th>Tier II: 22 semester credit hours</th>
<th>Tier III: 3 semester credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Civilizations [A] GenEd 110 and 111</td>
<td>Communication Proficiency [W], [C]</td>
<td>American Diversity course [D]</td>
</tr>
<tr>
<td>Written Communication [W]</td>
<td>Arts and Humanities [H], [G]</td>
<td></td>
</tr>
<tr>
<td>Mathematics Proficiency [N]</td>
<td>Social Sciences [S], [K]</td>
<td></td>
</tr>
<tr>
<td>Sciences [Q]</td>
<td>Arts and Humanities/Social Sciences [H], [G], [S], [K]</td>
<td></td>
</tr>
<tr>
<td>Tier II: 22 semester credit hours</td>
<td>Intercultural Studies [I], [G], [K]</td>
<td></td>
</tr>
<tr>
<td>Sciences [B], [P]</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Tier III: 3 semester credit hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Diversity course [D]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>total hours</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

1 A total of 9 hours of Arts and Humanities and Social Sciences with a minimum of 3 in either.
2 At least 3 hours in Biological Science and 3 hours in Physical Science plus 1 additional hour for three clock hours per week of laboratory.
3 To complete the General Education Requirements, students must choose one course that is also designated as an American Diversity [D] course. This course adds no credit hours to the General Education Requirements as American Diversity courses also fulfill GER requirements in another area.

The Tiers in the General Education Program

Courses satisfying the distribution requirements are organized conceptually in three tiers. Courses meeting the American Diversity requirement are represented throughout the General Education Program and are double designated with other distribution categories.

Tier I is designed for entering freshmen and addresses the essential knowledge and skills needed for success in the rest of the undergraduate curriculum. It provides a common foundation for later learning, establishes connections among the principal areas of scholarship, and introduces the fundamental issues and methods in these areas. Tier I consists of core courses (required of all entering freshmen) in World Civilizations (GenEd 110 and 111) and English composition (Engl 101); broad introductory courses in the sciences (designated [Q]); and a selection of courses in mathematics (designated [N]). With the exception of some of the mathematics courses, Tier I courses are numbered at the 100 level.

Tier II courses are typically introductions to the scholarly disciplines and constitute the bulk of the distribution requirements in the several academic areas: Arts and Humanities, Social Sciences, Intercultural Studies, Biological and Physical Sciences, and Communication Proficiency. Some more advanced Tier II courses provide continued experience with representative scholarly approaches, methods, and issues. Courses in this tier will commonly be taken in the student's first two years of study. While Tier II courses are designed to build on Tier I, courses may be taken from these two tiers concurrently. Hence, Tier I courses are not absolute prerequisites for Tier II courses. Tier II courses are designated at the 100, 200, or 300 level, as appropriate.

Tier III provides the final component of study in general education. Tier III courses are 400-level and have as a general prerequisite 60 hours of course work; there may be additional prerequisites for specific courses. Tier III courses are intended to engage students in significant writing and research projects outside of their majors.

General Education and Graduation Requirements

Students are required to earn a minimum of 120 credits, with a grade point average of 2.0 or better. A minimum of 40 credits must be taken at the 300-400-level. Other specific requirements are listed below.

Please note: Honors students complete Honors Requirements in place of General Education Requirements.

1. American Diversity [D]—The American Diversity requirement will be met by passing a designated [D] course which also meet a GER requirement in another area at the same time.
2. World Civilizations [A]—6 hours (GenEd 110 and 111).
3. Communication Proficiency [C]—6 hours including at least 3 in written communication [W] at Tier I, and 3 of [W] or [C] at Tier II. Prior to enrollment in freshman writing courses, all students must pass a mandatory Writing Placement Examination for the purpose of placement in appropriate writing courses. The Writing Placement Examination is administered during summer New Student Orientation, at the beginning of fall semester, and prior to spring registration. Examination results will place students in the core writing course, Engl 101, Introductory Writing (or equivalent), or in Engl 101 plus 1 hour of Engl 102, Writing Tutorial. Students whose native language is not English may be placed in Engl 105, Composition for ESL Students. In some instances, students may be exempted from Engl 101 on the basis of their performance in the Placement Examination. Questions should be directed to the WSU Writing Center, CUE 305, 509-335-7959.
4. Mathematics Proficiency [N]—This requirement can be satisfied by passing a designated course or courses in mathematics (see below), through satisfactory performance on an Advanced Placement examination, or by passing a calculus course beyond Math 171.
5. Arts and Humanities [H], [G]—3 hours minimum; a total of 9 hours at Tier I and II must be satisfied within Arts and Humanities and Social Sciences.
6. Social Sciences [S], [K]—3 hours minimum; a total of 9 hours at Tier II must be satisfied within Arts and Humanities and Social Sciences.
7. Intercultural Studies [I], [G], [K]—3 hours at Tier II.
8. Sciences [B], [P], [Q]—10 hours including at least 3 hours in Biological Sciences and 3 hours in Physical Sciences, plus 1 credit for three clock hours of laboratory. Students may elect to fulfill the science requirement by taking all 10 credits in Tier II. Non-science majors are encouraged to take a Tier I science course as an elective.
9. The University Writing Portfolio—Successful completion of the University Writing Portfolio is a requirement for graduation at WSU. Students must satisfy this requirement once they have earned 60 credit hours. To complete the Junior Writing Portfolio students must submit three papers they have written as a result of previously assigned college course work and take a Timed Writing Exam consisting of two writing exercises. Upon completion of 60 credit hours, students are given two semesters to satisfy the Junior Writing Portfolio. The Junior Writing Portfolio must be completed before a student enrolls in an [M] course (see below). Visit www.juniordportfolio.wsu.edu for more information.
10. Tier III [T] course—3 hours of upper-division work; Tier III courses for General Education credit may not be taken within a student's own major. Students may take Tier III courses only after completion of the required Tier I and II courses and after earning approximately 60 total hours.

Total hours of General Education: 40+
The General Education Program

General Rules

No course designated as a General Education Requirement (GER) can be taken on a pass, fail basis. Courses in, or crosslisted with, a student's major field may not be used to satisfy General Education Requirements, except in Written Communication Proficiency (English majors may use English composition).

Transfer Students. Two full years of credit and completion of lower-division General Education Requirements normally will be granted to students who have been awarded the Direct Transfer Associate (AA) degree from a Washington community college. The associate of Arts—Oregon transfer degree from an Oregon community college guarantees completion of the lower-division General Education Requirements, but does not guarantee junior standing or 60 semester credits. Certain approved associate's degrees from Arizona, California, Hawaii, and Idaho may also be considered to have fulfilled the lower division GERs for graduation, but do not guarantee junior status (60 semester credits). For details on specific degrees consult the Office of Admissions. These students will still be responsible for meeting the other requirements for graduation, including those in the college and major department. The University Writing Portfolio and the upper-division Tier III course are not lower-division requirements and therefore cannot be satisfied by the approved AA or AS degrees. Please note that other kinds of degrees from community colleges, or degrees from states other than Washington and Oregon, do not automatically fulfill General Education Requirements.

Foreign Language Fluency Track. To encourage the attainment of fluency in a foreign language, students who have completed both the second year of a foreign language (e.g., Span 203 and 204) and an approved study abroad program in the same language may substitute 6 hours of study abroad credit for 3 hours of Arts and Humanities and 3 hours of Intercultural Studies general education credit. Students majoring in foreign languages are not eligible. See the Department of Foreign Languages and Cultures or International Programs for details.

Courses Satisfying General Education Requirements

**AMERICAN DIVERSITY [D]**

The American Diversity requirement adds no credit hours to the General Education Requirements as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course.

Courses addressing American Diversity provide an overview of historical and contemporary issues in cultural diversity in the United States. The course work introduces students to one or more issues and engages them in critical inquiry relating to cultural differences and commonalities and their complex interactions in American society. This requirement adds no new credit hours to the General Education Requirements as American Diversity courses will be double designated with another distribution category, such as Humanities, Social Sciences, or the Tier III course.

- CES 337
- CES 338
- CES/W St 372/Anth 312
- CES 379
- CES 380
- CES 403
- CES/W St 411
- CES/W St 435
- CES 440
- CES 453
- CES/CoPsy 457
- CES 475/Anth 408
- Com 471/CES 404
- CRS 431
- Hist 150
- Hist/CES/W St 298
- Hist 314/CES 304
- Hist 321
- Hist 322
- Hist 325
- Hist/CES/W St 398
- H D 350
- Mus 362
- Mus 363/W St 363
- Natr 312
- Phil/W St 425
- Psych 309
- Psych 403
- Psych/W St 324
- SIS/Soc 250
- SIS 489
- Soc 101
- Soc 102
- Soc/W St 150
- Soc 340
- Soc 343
- Soc 345
- Soc/W St 351
- Soc 362
- Soc 373
- Soc/W St 384
- W St 200
- W St 220
- W St/Soc 302
- W St/MgtOp 315
- W St/CES 408
- W St/Soc 484

[S] Black Social Psychology
[H] African American Cinema
[S] Native American Women in Traditional and Contemporary Societies
[H] Native Americans and Film
[S] Immigration and Citizenship in the Global Economy
[T] Cultural Issues in Psychology
[T] Asian Pacific American Women
[T] Social Justice in American Culture
[T] Health Issues for Chicanos/as
[T] Chicano/Latino Psychology
[T] Indians of the Northwest
[T] Stereotypes and The Media
[T] The Demographics of American Diversity
[S] Peoples of the United States
[S] History of Women in American Society
[H] American Roots: Immigration, Migration, and Ethnic Identity
[H] U.S. Popular Culture, 1800-1930
[H] U.S. Popular Culture Since 1930
[S] Food in the United States
[H] History of Women in the American West
[S] Diversity in Contemporary Families
[H] History of Jazz
[G] Women in Music
[S] Natural Resource and Society
[H] Philosophy and Feminism
[S] Cultural Diversity in Organizations
[T] Cultural Issues in Psychology
[S] Psychology of Women
[S] Perspectives on Disability
[T] Disability and Society
[S] Introduction to Sociology
[S] Social Problems
[S] Marital and Sexual Life Styles
[S] Social Inequality
[S] Sociology of Professions and Occupations
[S] Sociology of Sport
[S] The Family
[S] Juvenile Delinquency
[S] Media, Culture, and Society
[S] Sociology of Gender
[S] Gender and Power: Introduction to Women’s Studies
[S] Women, Science, and Culture
[S] Contemporary Masculinity and Men’s Issues
[S] Women in Management and Leadership
[W] St/CES 408
[T] Introduction to Critical Race Feminism
[T] Lesbian and Gay Studies

**WORLD CIVILIZATIONS [A] (6 hours)**

The World Civilizations Tier I core courses provide an overview of the human past and an introduction to the academic culture of the University. The course work is designed to provide integrated study of the social, political, philosophical, and religious systems of the major world civilizations, along with an introduction to their distinctive art forms. Students may explore the various offerings of World Civilizations by visiting www.wsu.edu:8080/~wldciv/.

Transfer students entering the University with 60 semester credits or more may choose to substitute 200- and 300-level courses from the Intercultural Studies course list for one or both of the World Civilizations courses (GenEd 110 and 111), provided that the subject matter of the courses addresses non-U.S. culture(s).

**Tier I**

GenEd 110  World Civilizations I
GenEd 111  World Civilizations II
COMMUNICATION PROFICIENCY [W, C] (6 hours)

Requirements in Communication Proficiency may be satisfied by courses (see below) emphasizing the improvement of communication skills in the English language in both oral and written performances. Courses designed to improve writing and speaking skills primarily in a specific discipline or profession are not eligible for GER status.

[W] WRITTEN COMMUNICATION PROFICIENCY

Tier I

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 101</td>
<td>Introductory Writing</td>
</tr>
<tr>
<td>Engl 105</td>
<td>Composition for ESL Students</td>
</tr>
<tr>
<td>Engl 198</td>
<td>English Composition Honors</td>
</tr>
</tbody>
</table>

Tier II

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 200</td>
<td>Expository Writing</td>
</tr>
<tr>
<td>Engl 201</td>
<td>Writing and Research</td>
</tr>
<tr>
<td>Engl 298</td>
<td>Writing and Research Honors</td>
</tr>
<tr>
<td>Engl 301</td>
<td>Writing and Rhetorical Conventions</td>
</tr>
<tr>
<td>Engl 302</td>
<td>Writing About Literature</td>
</tr>
<tr>
<td>Engl 402</td>
<td>Technical and Professional Writing</td>
</tr>
<tr>
<td>Engl 403</td>
<td>Technical and Professional Writing ESL</td>
</tr>
<tr>
<td>Phil 200</td>
<td>Writing and Reasoning</td>
</tr>
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</table>

[C] COMMUNICATION PROFICIENCY

Tier II

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ComSt 102</td>
<td>Public Speaking: Theory, Models, and Practice</td>
</tr>
<tr>
<td>ComSt 235</td>
<td>Principles of Group Communication</td>
</tr>
<tr>
<td>ComSt 302</td>
<td>Advanced Public Speaking</td>
</tr>
<tr>
<td>ComSt 324</td>
<td>Argumentation</td>
</tr>
<tr>
<td>Engl 355</td>
<td>Multimedia Authoring: Exploring New Rhetorics</td>
</tr>
<tr>
<td>H D 205</td>
<td>Communication in Human Relations</td>
</tr>
</tbody>
</table>

MATHMATICS PROFICIENCY [N] (0-6 hours)

The objectives of the Mathematics Proficiency requirement are to establish a foundation of understanding of mathematics beyond arithmetic and algebraic manipulations and to establish a foundation of understanding of the uses of mathematics in applications to real-world problems. This requirement can be satisfied by passing a designated course or courses in mathematics (see below), through satisfactory performance on an Advanced Placement examination, or by passing a calculus course beyond Math 171.

Tier I

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>Math 140</td>
<td>Mathematics for Life Scientists</td>
</tr>
<tr>
<td>Math 171</td>
<td>Calculus I</td>
</tr>
<tr>
<td>Math 202</td>
<td>Introduction to Mathematical Analysis</td>
</tr>
<tr>
<td>Math/Stat 205</td>
<td>Statistical Thinking</td>
</tr>
<tr>
<td>Math 206</td>
<td>Mathematical Analysis for Architects</td>
</tr>
<tr>
<td>Math 210</td>
<td>Introduction to Mathematics</td>
</tr>
<tr>
<td>Math 251 I</td>
<td>Mathematics for Elementary School Teachers I and II</td>
</tr>
<tr>
<td>Math 252 II</td>
<td>Mathematics for Elementary School Teachers II</td>
</tr>
<tr>
<td>Stat/Math 212</td>
<td>Introduction to Statistical Methods</td>
</tr>
</tbody>
</table>

ARTS AND HUMANITIES [H, G*] (3-6 hours)

Requirements in the Arts and Humanities may be satisfied by courses (see below) which study human culture as manifested in literature, languages, history, philosophy, art, music, or theatre. These courses should introduce the student to the record of human creativity and provide a basis for assessing its value and significance in human development.

*G* designates courses which meet General Education Requirements in either Arts and Humanities or Intercultural Studies.

[D] designates courses which also fulfill the American Diversity Requirement.

Tier II Arts and Humanities [H]

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>Arch/I D/L A 202</td>
<td>The Built Environment</td>
</tr>
<tr>
<td>Arch 220</td>
<td>Architectural History I</td>
</tr>
<tr>
<td>Arch 221</td>
<td>Architectural History II</td>
</tr>
<tr>
<td>CES/Engl 220</td>
<td>Introduction to Multicultural Literature</td>
</tr>
<tr>
<td>CES 235/His 205/W St 235</td>
<td>[D] African American History</td>
</tr>
<tr>
<td>CES 336</td>
<td>[D] Black Popular Culture</td>
</tr>
<tr>
<td>CES 338</td>
<td>[D] African American Cinema</td>
</tr>
<tr>
<td>CES 379</td>
<td>[D] Native Americans and Film</td>
</tr>
<tr>
<td>DTC 375</td>
<td>Language, Texts, and Technology</td>
</tr>
<tr>
<td>Engl 108</td>
<td>Introduction to Literature</td>
</tr>
<tr>
<td>Engl 199</td>
<td>English Composition and Literature Honors</td>
</tr>
<tr>
<td>Engl 205</td>
<td>Introduction to Shakespeare</td>
</tr>
<tr>
<td>Engl 209</td>
<td>Readings in English Literature</td>
</tr>
<tr>
<td>Engl 210</td>
<td>Readings in American Literature</td>
</tr>
<tr>
<td>Engl 305</td>
<td>Shakespeare</td>
</tr>
<tr>
<td>Engl 306</td>
<td>Shakespeare</td>
</tr>
<tr>
<td>Engl 308/W St 306</td>
<td>Introduction to Literary Criticism</td>
</tr>
<tr>
<td>Engl/W St 309</td>
<td>Women Writers</td>
</tr>
<tr>
<td>Engl/Hum 335</td>
<td>The Bible as Literature</td>
</tr>
<tr>
<td>Engl 336</td>
<td>Composition and Design</td>
</tr>
<tr>
<td>Engl 366</td>
<td>The English Novel to 1900</td>
</tr>
<tr>
<td>Engl 368</td>
<td>The American Novel to 1900</td>
</tr>
<tr>
<td>Engl 375</td>
<td>Language, Text, and Technology</td>
</tr>
<tr>
<td>F A 101</td>
<td>Introduction to Art</td>
</tr>
<tr>
<td>F A 201</td>
<td>World Art History</td>
</tr>
<tr>
<td>F A 202</td>
<td>World Art History</td>
</tr>
<tr>
<td>F A 303</td>
<td>Modern Art—19th Century</td>
</tr>
<tr>
<td>F A 304</td>
<td>Modern Art—20th Century</td>
</tr>
<tr>
<td>F A/W St 308</td>
<td>Women Artists I</td>
</tr>
<tr>
<td>F A/W St 310</td>
<td>Women Artists II</td>
</tr>
<tr>
<td>For L 110</td>
<td>Introduction to Foreign Film</td>
</tr>
<tr>
<td>For L 130</td>
<td>Introduction to Foreign Literature</td>
</tr>
<tr>
<td>Fren 110</td>
<td>French/Francophone Film</td>
</tr>
<tr>
<td>Fren 120</td>
<td>French Culture</td>
</tr>
<tr>
<td>Fren 130</td>
<td>Masterpieces of French/Francophone Literature in Translation</td>
</tr>
<tr>
<td>Fren 310</td>
<td>French Film</td>
</tr>
<tr>
<td>Fren 350</td>
<td>Introduction to French Literature</td>
</tr>
<tr>
<td>Ger 110</td>
<td>German Film</td>
</tr>
<tr>
<td>Ger 120</td>
<td>Germanc Culture</td>
</tr>
<tr>
<td>Ger/W St 130</td>
<td>Masterpieces of German Literature in Translation</td>
</tr>
<tr>
<td>Hist 101</td>
<td>Classical and Christian Europe</td>
</tr>
<tr>
<td>Hist 102</td>
<td>Modern Europe</td>
</tr>
<tr>
<td>Hist 314/CES 304</td>
<td>[D] American Roots: Immigration, Migration, and Ethnic Identity</td>
</tr>
<tr>
<td>Hist 321</td>
<td>[D] U.S. Popular Culture, 1800-1930</td>
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<tr>
<td>Hist 322</td>
<td>[D] U.S. Popular Culture Since 1930</td>
</tr>
<tr>
<td>Hist/W St 337</td>
<td>Women in the Ancient World</td>
</tr>
<tr>
<td>Hist 340</td>
<td>Ancient Greece</td>
</tr>
<tr>
<td>Hist 341</td>
<td>Rome: Republic and Empire</td>
</tr>
<tr>
<td>Hist 342</td>
<td>History of England to 1485</td>
</tr>
<tr>
<td>Hist 343</td>
<td>History of England Since 1485</td>
</tr>
<tr>
<td>Hist 355</td>
<td>History of European Popular Culture</td>
</tr>
<tr>
<td>Hist/CES/W St 398</td>
<td>[D] History of Women in the American West</td>
</tr>
<tr>
<td>Hum 101</td>
<td>Humanities in the Ancient World</td>
</tr>
<tr>
<td>Hum 103</td>
<td>Mythology</td>
</tr>
<tr>
<td>Hum 198</td>
<td>Humanities in the Ancient World: Honors</td>
</tr>
<tr>
<td>Hum 302</td>
<td>Humanities in the Middle Ages and Renaissance</td>
</tr>
<tr>
<td>Hum 303</td>
<td>Reason, Romanticism, and Revolution</td>
</tr>
</tbody>
</table>
The General Education Program

Hum 304 Humanities in the Modern World
Hum 340 American Foundings
ID 250 History of Interiors I
ID 350 History of Interiors II
Mus 153 Musical Style in Composition
Mus 160 Survey of Music Literature
Mus 262 Rock Music History and Social Analysis
Mus 362 History of Jazz
Phil 101 Introduction to Philosophy
Phil 198 Philosophy Honors
Phil 201 Elementary Logic
Phil 207 Philosophy of Religion
Phil 210 Philosophy in Film
Phil 220 Aesthetics
Phil 260 Introduction to Ethics
Phil/W St 312 [D] Philosophy and Feminism
Phil 320 History of Ancient and Medieval Philosophy
Phil 321 History of Modern Philosophy
Phil 322 Nineteenth-century Philosophy
Phil 350 Philosophy of Science
Phil 360 Business Ethics
Phil 365 Biomedical Ethics
Phil 370 Environmental Ethics
Rus 131 Masterpieces of Russian Literature in Translation
Span 110 Peninsular Spanish Film
Span 120 Peninsular Spanish Culture
Span 130 Masterpieces of Peninsular Spanish Literature in Translation
Theat 160 Introduction to Theatre
Theat 365 Theatre History I: Beginnings to 1700
Theat 366 Theatre History II: 1700 to 1900
Theat 367 Musical Theatre
W St 210 Diverse Sexualities and Cultural Production

Tier II Arts and Humanities or Intercultural Studies [G]
Anth 201 Art and Society
Anth 301 Arts and Media in Global Perspective
Asia 111 Asian Film
Asia 131 Masterpieces of Asian Literature in Translation
Asia 220 Global Theory/Regional Reality through Culture
CES 151 Introduction to Chicano/Latino Studies
CES 171 Introduction to Native American Studies
CES 313/Engl 311 Asian Pacific/American Literature
CES 331/Engl 321 African American Literature
CES 333/Engl 345 Chicana/o – Latina/o Literature
CES 373/Engl 341 Native American Literature
Chin 111 Asian Film
Chin 131 Masterpieces of Asian Literature in Translation
FA 301 Arts of Native North America
FA/Asia 302 The Arts of Asia
For L 101 Introduction to the World of Languages
For L 120 Introduction to Foreign Cultures
For L 220 Global Theory/Regional Reality through Culture
Fren 311 Francophone Film
Fren 351 Introduction to Francophone Literature
GenEd 200 Studying World Civilizations Abroad
Hist/Asia 273 Foundations of Islamic Civilization
Hist/Asia 370 Civilization of Classical India
Hist/Asia 373 Chinese Civilization
Hist/Asia 374 Japanese Civilization
Hum 350 Sacred Texts and Cultures of World Religions
Mus 163 World Music
Mus 265/CES 271 Native Music of North America
Mus/W St 363 Women and Music
Phil/Asia 314 Philosophies and Religions of India
Phil/Asia 315 Philosophies and Religions of China and Japan
Rus 121 Contemporary Russian Culture
Span 111 Latin American Film
Span 121 Latin American Culture
Theat 145 Contemporary World Theatre

SOCIAL SCIENCES [S, K#] (3-6 hours)
Requirements in Social Sciences may be satisfied by courses (see below) with primary emphasis on the social, political, economic, and religious institutions of human society. These courses expose students to data used by the various disciplines to test, explain, or create the concepts, theories, principles, and laws underlying those institutions. These courses may focus upon how social sciences use these constructs to evaluate issues and how such knowledge enhances the understanding of human behavior within society’s institutions.

#K designates courses which meet General Education Requirements in either Social Sciences or Intercultural Studies.

[D] designates courses which also fulfill the American Diversity Requirement.

Hier II Social Sciences [S]
Ag Ec 201 Economics in Agriculture
Ag Ec/Engl/His 320 American Agriculture and Rural Life
Am St/Engl/His/W St 216 [D] American Cultures
Anth 198 Anthropology Honors
Anth/W St 214 [D] Gender and Culture in America
Anth 327/CES 378 [D] Contemporary Native Peoples of the Americas
Anth 330 Origins of Culture and Civilization
Anth 334 [D] Time and Culture in the Northwest
Anth/For L 350 Speech, Thought and Culture
CES 111 [D] Introduction to Asian/Pacific American Studies
CES 131 [D] Introduction to Black Studies
CES 254 [D] Comparative Latino/a Cultures
CES/His/W St 255 [D] Chicana/o History
CES 260 [D] Race and Racism in US Popular Culture
CES/His 280 [D] Race and the Law in American History
CES 302 [D] Social Psychology of Prejudice
CES 335/His 313 Civil Rights Movement in America
CES 337 [D] Black Social Psychology
CES/W St 372/Anth 312 [D] Native American Women in Traditional and Contemporary Societies
CES 380 [D] Immigration and Citizenship in the Global Economy
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>Com 101</td>
<td>Mass Communications and Society</td>
</tr>
<tr>
<td>CRS/H D 334</td>
<td>Principles of Community Development</td>
</tr>
<tr>
<td>CRS 335</td>
<td>Cross-National Perspectives on Community</td>
</tr>
<tr>
<td>CRS 336</td>
<td>Agriculture, Environment, and Community</td>
</tr>
<tr>
<td>Econ 101</td>
<td>Fundamentals of Microeconomics</td>
</tr>
<tr>
<td>Econ 102</td>
<td>Fundamentals of Macroeconomics</td>
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<td>Econ 198</td>
<td>Economics Honors</td>
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<tr>
<td>Ger 121</td>
<td>Contemporary German Culture</td>
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<tr>
<td>H D 101</td>
<td>Human Development Across the Lifespan</td>
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<tr>
<td>H D 204</td>
<td>Family Systems: Understanding Family Interaction</td>
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<tr>
<td>H D 350</td>
<td>[D] Diversity in Contemporary Families</td>
</tr>
<tr>
<td>Hist 110</td>
<td>American History to 1877</td>
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<tr>
<td>Hist 111</td>
<td>American History Since 1877</td>
</tr>
<tr>
<td>Hist 150</td>
<td>[D] Peoples of the United States</td>
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<tr>
<td>Hist 198</td>
<td>History Honors</td>
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<tr>
<td>Hist/CES/W St 298</td>
<td>[D] History of Women in American Society</td>
</tr>
<tr>
<td>Hist 325</td>
<td>[D] Food in the United States</td>
</tr>
<tr>
<td>Hist/W St 350</td>
<td>European Women's History, 1400-1800</td>
</tr>
<tr>
<td>Hist/W St 380</td>
<td>History of Medicine</td>
</tr>
<tr>
<td>Hist 381</td>
<td>Science in Western Civilization Through Newton</td>
</tr>
<tr>
<td>Hist 382</td>
<td>Science in Western Civilization from Newton to Einstein</td>
</tr>
<tr>
<td>Natrs 312</td>
<td>[D] Natural Resource and Society</td>
</tr>
<tr>
<td>Pol S 101</td>
<td>American National Government</td>
</tr>
<tr>
<td>Pol S 102</td>
<td>Introduction to Comparative Politics</td>
</tr>
<tr>
<td>Pol S 103</td>
<td>International Politics</td>
</tr>
<tr>
<td>Pol S 198</td>
<td>Political Science Honors</td>
</tr>
<tr>
<td>Pol S/W St 305</td>
<td>Gender and Politics</td>
</tr>
<tr>
<td>Pol S 333</td>
<td>Development of Marxist Thought</td>
</tr>
<tr>
<td>Psych 105</td>
<td>Introductory Psychology</td>
</tr>
<tr>
<td>Psych 198</td>
<td>Psychology Honors</td>
</tr>
<tr>
<td>Psych 309</td>
<td>[D] Cultural Diversity in Organizations</td>
</tr>
<tr>
<td>Psych/W St 324</td>
<td>[D] Psychology of Women</td>
</tr>
<tr>
<td>Psych/Soc 350</td>
<td>Social Psychology</td>
</tr>
<tr>
<td>Psych 361</td>
<td>Principles of Developmental Psychology</td>
</tr>
<tr>
<td>SHS/Soc 250</td>
<td>[D] Perspectives on Disability</td>
</tr>
<tr>
<td>Soc 101</td>
<td>[D] Introduction to Sociology</td>
</tr>
<tr>
<td>Soc 102</td>
<td>[D] Social Problems</td>
</tr>
<tr>
<td>Soc/W St 150</td>
<td>Marital and Sexual Life Styles</td>
</tr>
<tr>
<td>Soc 198</td>
<td>Introduction to Sociology Honors</td>
</tr>
<tr>
<td>Soc 315</td>
<td>Ecology of Human Societies</td>
</tr>
<tr>
<td>Soc 331</td>
<td>Population, Resources, and the Future</td>
</tr>
<tr>
<td>Soc 340</td>
<td>[D] Social Inequality</td>
</tr>
<tr>
<td>Soc 341</td>
<td>Sociology of Religion</td>
</tr>
<tr>
<td>Soc 343</td>
<td>[D] Sociology of Professions and Occupations</td>
</tr>
<tr>
<td>Soc 345</td>
<td>[D] Sociology of Sport</td>
</tr>
<tr>
<td>Soc/W St 351</td>
<td>[D] The Family</td>
</tr>
<tr>
<td>Soc 360</td>
<td>Theories of Deviance</td>
</tr>
<tr>
<td>Soc 362</td>
<td>[D] Juvenile Delinquency</td>
</tr>
<tr>
<td>Soc 373</td>
<td>[D] Media, Culture, and Society</td>
</tr>
<tr>
<td>Soc/W St 384</td>
<td>[D] Sociology of Gender</td>
</tr>
<tr>
<td>W St 200</td>
<td>[D] Gender and Power: Introduction to Women's Studies</td>
</tr>
<tr>
<td>W St 204</td>
<td>Family Systems: Understanding Family Interactions</td>
</tr>
<tr>
<td>W St 220</td>
<td>[D] Women, Science, and Culture</td>
</tr>
<tr>
<td>W St/CES/Soc 300</td>
<td>Intersections of Race, Class, and Gender</td>
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<tr>
<td>W St/Soc 302</td>
<td>[D] Contemporary Masculinity and Men's Issues</td>
</tr>
<tr>
<td>W St/MgtOp 315</td>
<td>[D] Women in Management and Leadership</td>
</tr>
</tbody>
</table>

**Tier II Social Sciences or Intercultural Studies [K]**

- Anth 101: General Anthropology
- Anth 203/CES 212: Peoples of the World
- Anth 302: Childhood and Culture
- Anth/Asia/Hist 306: Cultures and Peoples of the Middle East
- Anth 307: Contemporary Cultures and Peoples of Africa
- Anth 309: Cultural Ecology
- Anth/W St 316: Gender in Cross Cultural Perspective
- Anth 320/CES 377: Native Peoples of North America
- Anth 331/CES 376: America Before Columbus
- Asia 301: East Meets West

**Tier II Intercultural Studies [I, G, K] (3 hours)**

Requirements in Intercultural Studies may be satisfied by courses (see below) which enlarge the student’s international perspective or increase the student’s sensitivity to cultural differences. These courses employ a variety of methodologies and focus on diverse subject matter, but should emphasize non-Western cultures or ethnic minorities studies. Such courses should foster an awareness of the diversity of human values and present a coherent view of the cultures studied.

In regard to substitutions by transfer students or students in approved study abroad programs, only equivalent, formal academic course work which focuses on the study of non-Western cultures or the experiences of American ethnic minorities may satisfy the Intercultural Studies requirement. That is, non-Western culture must be the formal subject of the academic course. Non-academic work, academic work on other topics, foreign travel, or life-experience abroad cannot qualify.

* [G] designates courses which meet General Education Requirements in either Arts and Humanities or Intercultural Studies.

# [K] designates courses which meet General Education Requirements in either Social Sciences or Intercultural Studies.
### The General Education Program

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CES 101</td>
<td>Introduction to Comparative American Cultures</td>
</tr>
<tr>
<td>CES 151</td>
<td>[G] Introduction to Chicano Studies</td>
</tr>
<tr>
<td>CES 171</td>
<td>[G] Introduction to Native American Studies</td>
</tr>
<tr>
<td>CES 198</td>
<td>Introduction to Comparative American Cultures - Honors</td>
</tr>
<tr>
<td>CES 211/Hist 201</td>
<td>[K] Introduction to Asian American History</td>
</tr>
<tr>
<td>CES 227</td>
<td>Introduction to African Studies</td>
</tr>
<tr>
<td>CES 313/Engl 311</td>
<td>[G] Asian Pacific/American Literature</td>
</tr>
<tr>
<td>CES 331/Engl 321</td>
<td>[G] African American Literature</td>
</tr>
<tr>
<td>CES 353/Engl 345</td>
<td>[G] Chicano/Chicana Literature</td>
</tr>
<tr>
<td>CES 373/Engl 341</td>
<td>[G] Native American Literature</td>
</tr>
<tr>
<td>Chin 111</td>
<td>[G] Asian Film</td>
</tr>
<tr>
<td>Com 321</td>
<td>Intercultural Communication</td>
</tr>
<tr>
<td>Crops/SoilS 360</td>
<td>World Agricultural Systems</td>
</tr>
<tr>
<td>CRS 335</td>
<td>[K] Cross-National Perspectives on Community</td>
</tr>
<tr>
<td>Engl 222</td>
<td>[G] World Literature in English</td>
</tr>
<tr>
<td>F A 301</td>
<td>[G] Arts of Native North America</td>
</tr>
<tr>
<td>F A/Asia 302</td>
<td>[G] The Arts of Asia</td>
</tr>
<tr>
<td>For L 101</td>
<td>[G] Introduction to the World of Languages</td>
</tr>
<tr>
<td>For L 120</td>
<td>[G] Introduction to Foreign Cultures</td>
</tr>
<tr>
<td>For L 220</td>
<td>[G] Global Theory/Regional Reality through Culture</td>
</tr>
<tr>
<td>Fren 121</td>
<td>Francophone Culture</td>
</tr>
<tr>
<td>Fren 311</td>
<td>[G] Francophone Film</td>
</tr>
<tr>
<td>Fren 351</td>
<td>[G] Introduction to Francophone Literature</td>
</tr>
<tr>
<td>GenEd 200</td>
<td>[G] Studying World Civilizations Abroad</td>
</tr>
<tr>
<td>Hist 230</td>
<td>[K] Latin America, The Colonial Period</td>
</tr>
<tr>
<td>Hist 231</td>
<td>[K] Latin America, The National Period</td>
</tr>
<tr>
<td>Hist/Asia 270</td>
<td>[K] Introduction to South Asian Culture</td>
</tr>
<tr>
<td>Hist/Asia 272</td>
<td>Introduction to Middle Eastern History</td>
</tr>
<tr>
<td>Hist/Asia 273</td>
<td>[G] Foundations of Islamic Civilization</td>
</tr>
<tr>
<td>Hist 275/Asia 275/CES 217</td>
<td>[K] Introduction to East Asian Culture</td>
</tr>
<tr>
<td>Hist 308/CES 375</td>
<td>[K] North American Indian History, Precontact to Present</td>
</tr>
<tr>
<td>Hist 331</td>
<td>[K] Cultural History in Latin America</td>
</tr>
<tr>
<td>Hist/W St 335</td>
<td>[K] Women in Latin American History</td>
</tr>
<tr>
<td>Hist/Asia 370</td>
<td>[G] Civilization of Classical India</td>
</tr>
<tr>
<td>Hist/Asia 373</td>
<td>[G] Chinese Civilization</td>
</tr>
<tr>
<td>Hist/Asia 374</td>
<td>[G] Japanese Civilization</td>
</tr>
<tr>
<td>Hum 350</td>
<td>[G] Sacred Texts and Cultures of World Religions</td>
</tr>
<tr>
<td>Mus 265/CES 271</td>
<td>[G] Native Music of North America</td>
</tr>
<tr>
<td>Mus/W St 363</td>
<td>[G] Women and Music</td>
</tr>
<tr>
<td>Phil/Asia 314</td>
<td>[G] Philosophies and Religions of India</td>
</tr>
<tr>
<td>Phil/Asia 315</td>
<td>[G] Philosophies and Religions of China and Japan</td>
</tr>
<tr>
<td>Pol S 324/CES 339</td>
<td>Black Politics</td>
</tr>
<tr>
<td>Rus 121</td>
<td>[G] Contemporary Russian Culture</td>
</tr>
<tr>
<td>Span 111</td>
<td>[G] Latin American Film</td>
</tr>
<tr>
<td>Span 121</td>
<td>[G] Latin American Culture</td>
</tr>
<tr>
<td>Theat 145</td>
<td>[G] Contemporary World Theatre</td>
</tr>
<tr>
<td>W St 220</td>
<td>[K] Women, Science, and Culture</td>
</tr>
<tr>
<td>W St 332/Anth 317</td>
<td>Global Feminisms</td>
</tr>
<tr>
<td>W St 340</td>
<td>Third World Women and Film</td>
</tr>
</tbody>
</table>

### SCIENCEs [Q, B, P] (10 hours)
Requirements in Sciences may be satisfied by courses (see below) which acquaint the student with the basic physical and/or biological principles of the world. The student should gain an understanding of the scientific method, including experimentation and data interpretation involving biological, mathematical, and/or physical systems. The curriculum is designed to enable the student to understand scientific developments and to evaluate, as an informed lay person, the significance of those developments and their association with other areas of human endeavor. Laboratory experience satisfying the laboratory credit requirement should focus on the interplay among hypothesis, observation, experimentation, theory, and understanding.

(L) designates courses which include lab work.

#### [Q] Tier I Science
Courses are designed to serve as introductions to science and scientific thinking in general, including the historical development of science, its relationship to civilization, and its relevance to contemporary society. Tier I Science courses examine how the scientific method can be used to solve problems. They also explore the impacts of modern technology on the individual, society, and the environment, including the benefits, problems, and limitations of technology. Tier I Science courses employ writing as a learning tool and emphasize a hands-on approach which actively involves students in the collection, interpretation, and presentation of data. The hands-on component of Tier I Science courses, including separately scheduled recitation sections, does not fulfill the Tier II laboratory requirement. Students may elect to fulfill the Science requirement by taking all 10 credits in Tier II.

#### Tier I [Q]

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astr 150</td>
<td>Science and the Universe</td>
</tr>
<tr>
<td>Biol 150</td>
<td>Evolution</td>
</tr>
<tr>
<td>Chem 150</td>
<td>Molecules and Science</td>
</tr>
<tr>
<td>Hort 150</td>
<td>Plants and Society</td>
</tr>
<tr>
<td>Geol 150</td>
<td>Conflict and Debate in Geological Sciences</td>
</tr>
<tr>
<td>Phys 150</td>
<td>Physics and Your World</td>
</tr>
<tr>
<td>PI P 150</td>
<td>Molds, Mildews, Mushrooms: The Fifth Kingdom</td>
</tr>
<tr>
<td>SoilS 150</td>
<td>Science, Society, and Sustainable Food Systems</td>
</tr>
</tbody>
</table>

#### [B] BIOLOGICAL SCIENCES (Tier II)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anth 260 (L)</td>
<td>Introduction to Physical Anthropology</td>
</tr>
<tr>
<td>A S 205</td>
<td>Companion Animal Nutrition</td>
</tr>
<tr>
<td>Biol 101</td>
<td>Direction in Biological Sciences</td>
</tr>
<tr>
<td>Biol 102 (L)</td>
<td>General Biology</td>
</tr>
<tr>
<td>Biol 103 (L)</td>
<td>Introductory Biology</td>
</tr>
<tr>
<td>Biol 104 (L)</td>
<td>Introductory Biology</td>
</tr>
<tr>
<td>Biol 105 (L)</td>
<td>Biological Science Laboratory</td>
</tr>
<tr>
<td>Biol 120 (L)</td>
<td>Introduction to Botany</td>
</tr>
<tr>
<td>Biol 135</td>
<td>Animal Natural History</td>
</tr>
<tr>
<td>Biol 201</td>
<td>Contemporary Biology</td>
</tr>
<tr>
<td>Biol 298 (L)</td>
<td>Biological Science Honors</td>
</tr>
<tr>
<td>Biol 308</td>
<td>Marine Biology</td>
</tr>
<tr>
<td>Biol 330</td>
<td>Principles of Conservation</td>
</tr>
<tr>
<td>Biol 390 (L)</td>
<td>Stream Monitoring</td>
</tr>
</tbody>
</table>
### Tier III Courses [T] (3 hours)

Tier III courses provide the final component of sequential study in general education. The Tier III course is designed to assist students in integrating previous course work at a more advanced (upper-division) level. The Tier III course, taken in the junior or senior year, is intended to permit focused study within a body of knowledge and completion of one Tier I and three Tier II courses. Additional prerequisites for specific courses are listed below when applicable. Many of the Tier III courses employ an interdisciplinary approach to topical issues or other subject matter. Other courses may be grounded in the methodologies of the sciences, the social sciences, or the arts and humanities.

**TIER III COURSES GROUNDED IN SCIENTIFIC METHODOLOGIES**

Preparatory work for these courses should include study of the basic scientific principles of the physical and biological sciences—especially the study of living systems and their interactions with the environment (ecology)—as well as a solid background in mathematics. Familiarity with intellectual history or the history of science—including theories of the development and nature of the universe; the history of planet earth and the solar system—is also useful. Students are expected to understand the fundamental structures of matter and the principles governing the transformations of matter and energy. These courses typically examine the process by which human beings have developed their understanding of the universe over time.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astr 450</td>
<td>Life in the Universe (Prereq Math proficiency)</td>
</tr>
<tr>
<td>Biol 401</td>
<td>Plants and People (Prereq Biol 102, 104, or 120)</td>
</tr>
<tr>
<td>Biol/W St 407</td>
<td>Biology of Women (Prereq Biol 102, 103, or 298; junior standing)</td>
</tr>
<tr>
<td>Biol 408</td>
<td>Contemporary Genetics</td>
</tr>
<tr>
<td>C E 401</td>
<td>Global Climate Change</td>
</tr>
<tr>
<td>CES 403</td>
<td>Cultural Issues in Psychology</td>
</tr>
<tr>
<td>Entom 401</td>
<td>Invertebrates in Biological Thought (Prereq Biol 104; Rec Biol 150)</td>
</tr>
<tr>
<td>FSHN 444</td>
<td>Applied Nutrition in Health Science (Prereq Biol, chem, soc, or psych)</td>
</tr>
<tr>
<td>MBioS 425</td>
<td>Origins of Life</td>
</tr>
<tr>
<td>Mfg E 476</td>
<td>Industrial Ecology and Sustainable Manufacturing</td>
</tr>
<tr>
<td>MSE 440</td>
<td>Materials: The Foundation of Society and Technology</td>
</tr>
</tbody>
</table>

**TIER III COURSES USING SOCIAL SCIENCE METHODS**

These courses address many current issues as well as topics of permanent or perennial interest. Preparatory work for these courses should include study of social science methods of analysis and a solid grounding in historical and cultural studies. Some understanding of the roles of class, gender, and ethnicity, of social institutions and their nature and functions, of political processes, and of cultural change is also useful.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 420</td>
<td>Growth and Change in the American West (Prereq Ag Ec 201 or Econ 101)</td>
</tr>
<tr>
<td>Am St 47</td>
<td>[D] Social Movements and US Culture</td>
</tr>
<tr>
<td>AMT 417</td>
<td>[D] Social and Psychological Aspects of Dress</td>
</tr>
<tr>
<td>Anth 404</td>
<td>The Self in Culture (Prereq 100-level Anth, Psych, or Soc)</td>
</tr>
<tr>
<td>Anth 405</td>
<td>Medical Anthropology</td>
</tr>
<tr>
<td>Anth 417</td>
<td>Anthropology and World Problems (Prereq 3 hours Anth)</td>
</tr>
<tr>
<td>Anth 468</td>
<td>Sex, Evolution, and Human Nature (Prereq 3 hours Anth or Biol)</td>
</tr>
<tr>
<td>Anth 469</td>
<td>Genes, Culture, and Human Diversity</td>
</tr>
<tr>
<td>CES 403</td>
<td>Cultural Issues in Psychology</td>
</tr>
<tr>
<td>CES 405/Engl 410</td>
<td>Cultural Criticism and Theory</td>
</tr>
<tr>
<td>CES/W St 411</td>
<td>[D] Asian Pacific American Women (Prereq CES or W St course)</td>
</tr>
<tr>
<td>CES 426</td>
<td>Workers Across North America</td>
</tr>
</tbody>
</table>

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**[P] PHYSICAL SCIENCES (Tier II)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astr 135</td>
<td>Astronomy</td>
</tr>
<tr>
<td>Astr/Phys 345</td>
<td>Principles of Astronomy</td>
</tr>
<tr>
<td>Astr 390</td>
<td>The Night Sky</td>
</tr>
<tr>
<td>Chem 101</td>
<td>Introduction to Chemistry</td>
</tr>
<tr>
<td>Chem 102</td>
<td>Chemistry Related to Life Sciences</td>
</tr>
<tr>
<td>Chem 105</td>
<td>Principles of Chemistry I</td>
</tr>
<tr>
<td>Chem 106</td>
<td>Principles of Chemistry II</td>
</tr>
<tr>
<td>Chem 115</td>
<td>Chemical Principles Honors I</td>
</tr>
<tr>
<td>Chem 116</td>
<td>Chemical Principles Honors II</td>
</tr>
<tr>
<td>Chem 350</td>
<td>Chemistry in Contemporary Society</td>
</tr>
<tr>
<td>Geol 101</td>
<td>Introduction to Geology</td>
</tr>
<tr>
<td>Geol 102</td>
<td>Physical Geology</td>
</tr>
<tr>
<td>Geol 180</td>
<td>Honors Geology</td>
</tr>
<tr>
<td>Geol 210</td>
<td>Earth's History and Evolution</td>
</tr>
<tr>
<td>Geol 322</td>
<td>Geology of the Pacific Northwest</td>
</tr>
<tr>
<td>Geol 323</td>
<td>Geology of the Pacific Northwest</td>
</tr>
<tr>
<td>Geol 390</td>
<td>Living on the Edge: Global Climate Change and Earth History</td>
</tr>
<tr>
<td>Ph S 298</td>
<td>Physical Science Honors</td>
</tr>
<tr>
<td>Phys 101</td>
<td>General Physics</td>
</tr>
<tr>
<td>Phys 102</td>
<td>General Physics</td>
</tr>
<tr>
<td>Phys/Astr 138</td>
<td>Planets and Planetary Systems</td>
</tr>
<tr>
<td>Phys 201</td>
<td>Physics for Scientists and Engineers</td>
</tr>
<tr>
<td>Phys 202</td>
<td>Physics for Scientists and Engineers</td>
</tr>
<tr>
<td>Phys 205</td>
<td>Physics for Scientists and Engineers I - Honors</td>
</tr>
<tr>
<td>Phys 206</td>
<td>Physics for Scientists and Engineers II - Honors</td>
</tr>
<tr>
<td>Phys 380</td>
<td>Physics and Society</td>
</tr>
</tbody>
</table>

**[T] designates courses which also fulfill the American Diversity Requirement.**

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**[D] Ger indicators. They have as a general prerequisite 60 hours of course work and completion of one Tier I and three Tier II courses. Additional prerequisites for specific courses are listed below when applicable.**
TIER III COURSES EMPLOYING THE METHODS OF THE ARTS AND HUMANITIES

These courses examine the variety of artistic forms and traditions, through which human beings have explored the world and their own relationship to it, affirmed or challenged the values of their cultures, or expressed their own personal visions. Useful preparatory work includes the history, criticism, theory, or creation of the arts, including music, theater, dance, literature, sculpture, painting and other graphic arts, and architecture. Students are expected to refine their historical perspective on the major art traditions of the world, become familiar with some of the world’s most important genres, achievements, and artists, and to be able to analyze and interpret a variety of art forms.

Am St 410 Cities in Fiction
Am St/Engl 471 Ecological Issues and American Nature Writing
Am St/Engl 472 Digital Diversity
Engl/Am St 470 Literature and Culture of the American West
Eng/W St 409 Women Writers in the American West
Eng 415 Traditions of Comedy and Tragedy
Eng 419 The Twentieth Century Novel
Eng 470 For L 410 Issues in World Film and Literatures
Fren 430 Topics in French/Francophone Literature (Prereq three literature or humanities courses)
Hum 410 Love in the Arts
Hum 450 Representations of the Holocaust
Phil 413 Mind of God and the Book of Nature: Science and Religion
Phil/W St 425 Philosophy and Feminism
Phil 415 The Experience of Illness in Society: Moral Problems in Health Care
Phil 431 Philosophy of Art
Phil 435 East/West Philosophy of Architecture
Rus 410 Russian Film
Rus 430 St. Petersburg
Span 420 Cultural Topics

NOTICE: Undergraduate students may monitor their progress in meeting General Education Requirements, major requirements, and University Requirements for graduation by requesting a degree audit report over the Web. From the WSU home page, www.wsu.edu, select the WSU InfoNet link and then choose the Student Information link.
Department of Aerospace Studies

www.wsu.edu:8080/~afrotc
Kruegel 417
509-335-5598

Colonel D. Salmon; Captain W. Beaulier.

The Department of Aerospace Studies (Air Force Reserve Officer Training Corps) offers eligible students education and training which lead to commissions as second lieutenants in the U.S. Air Force. Air Force ROTC students may major in any degree program offered at Washington State University. They supplement their major curriculum with the specialized aerospace studies courses in order to prepare for active commissioned service.

Students may participate in either the four-year or three-year program. The four-year student completes the General Military Course (two years), four-week summer training (Aero 291), and the Professional Officer Course (two years). The three-year student attends a special six-week summer field training (Aero 292) and then completes the Professional Officer Course.

General Military Course (GMC). This sequence of courses consists of four 1-credit academic and 2-credit lab courses normally taken during the freshman and sophomore years. The GMC sequence prepares the student for field training and the Professional Officer Course, and forms the basis for the four-year program. The sequence may be adapted to fit individual schedules.

Professional Officer Course (POC). This sequence, beginning with Aero 311, consists of four 3-credit academic and 2-credit lab courses normally taken during the student's last two years in the University. Entry into the POC is competitive. Students must normally complete field training the summer before they enter the POC. Four-year students compete for entry during their last year in the GMC. Other students should begin the application process early in the fall semester before they plan on attending field training.

Financial Aid and Scholarships. Air Force ROTC offers enrolled GMC students the opportunity to compete for three-and-one-half-, three-, two-and-one-half-, and two-year scholarships which pay tuition, fees, and a semester book allowance, as well as a $300 per month stipend during fall and spring semesters. All Air Force ROTC students contracted in the POC receive a $350 per month stipend.

Minors

Aerospace

A minor in aerospace studies requires at least 16 hours, half of which must be 300-400-level, from: Aero 101, 102, 201, 202, 311, 312, 411, 412.

Description of Courses

Aerospace Studies Courses

Aero

101 The Foundations of USAF I 1 Prereq c// in Aero 103 required. Introduces students to the Air Force and AFROTC.

102 The Foundations of USAF II 1 Prereq c// in Aero 103 required. Introduces students to the Air Force and AFROTC.

103 Leadership Laboratory I 2 (0-4) May be repeated for credit; cumulative maximum 4 hours. Leadership principles, military experience, and management practice; 2 hours laboratory and 2 hours required physical training.

201 The Evolution of USAF Air and Space Power I 1 Prereq c// in Aero 203 required. Examines general aspects of air and space power through a historical perspective. Leadership Laboratory is mandatory for AFROTC.

202 The Evolution of USAF Air and Space Power II 1 Prereq c// in Aero 203 required. Examines general aspects of air and space power through a historical perspective. Leadership Laboratory is mandatory for AFROTC.

203 Leadership Laboratory II 2 (0-4) May be repeated for credit; cumulative maximum 4 hours. Leadership principles, military experience, and management practice; 2 hours laboratory and 2 hours required physical training.

291 Four-Week Field Training Course 2 Prereq junior standing; Aero 101, 102, 201, 202; by interview only. Intensive study of academic core course work and military education, experience in leadership and management at an active Air Force installation. S, F grading.

292 Six-Week Field Training Course 6 Prereq junior standing; by interview only; applicants must apply at least six months in advance. Intensive study of academic core course work and military education at an active Air Force installation. S, F grading.

299 Directed Studies V 1-4 By interview only. May be repeated for credit.

Air Force Leadership Studies I 3 Prereq c// in Aero 313 required. Examines general aspects of air and space power through a historical perspective.

312 Air Force Leadership Studies II 3 Prereq c// in Aero 313 required. Examines general aspects of air and space power through a historical perspective.

313 Leadership Laboratory III 2 (0-4) May be repeated for credit; cumulative maximum 4 hours. Leadership principles, military experience, and management practice; 2 hours laboratory and 2 hours required physical training.

391 Private Pilot Ground School 2 All aspects of preparation for the FAA private pilot written test. Cooperative course taught by UI (Aero 391), open to WSU students.

392 Instrument Pilot Ground School 2 Prereq Aero 391 or by interview only. All ground-based aspects of instrument flying to prepare students to take the FAA instrument pilot written test. Cooperative course taught by UI (Aero 392), open to WSU students.

411 National Security Affairs/Preparation for Active Duty I 3 Prereq c// in Aero 413 required. Examines general aspects of air and space power through a historical perspective.

412 National Security Affairs/Preparation for Active Duty II 3 Preq c// in Aero 413 required. Examines general aspects of air and space power through a historical perspective.

413 Leadership Laboratory IV 2 (0-4) Introduces students to leadership principles, military experience, and management practice; 2 hours laboratory and 2 hours required physical training. May be repeated for credit; cumulative maximum 4 hours.

485 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

Program in Aging

Hubert 311
509-335-9540

Chair, M. Young.

The Program in Aging offers an interdisciplinary curriculum in gerontology, including courses in the social and health sciences. The program is designed to achieve the following objectives:

1. To provide a body of knowledge which individuals may use in better understanding the processes and implications of aging in their own lives and for participation in community decision making regarding the scope, structure, and nature of programs for the elderly;

2. To enhance the qualifications of students in the helping services, health sciences, communication, education, and business, who are planning careers which involve working with or providing services to older persons;

3. To prepare students for graduate and professional training in gerontology; and
The American Studies Program offers the Bachelor of Arts, Master of Arts, and Doctor of Philosophy degrees in American Studies.

American Studies plays a unique role in the college of Liberal Arts and in the University by bringing together faculty and students from a variety of disciplines to compare knowledge and gain perspectives on United States culture. The major offers a rich, rigorous interdisciplinary approach combining the best intellectual insights from literature, historical studies, women's studies, ethnic studies, the fine arts, environmental studies, and the social sciences. The program applies interdisciplinary methods to the cultural study of the US as a multiracial, multi-ethnic, and multicultural society that is also part of a global system. Established in 1962, the program, like most American Studies programs, has its roots in English and history. Currently, we have in addition strong ties to the Department of Women's Studies and the Department of Comparative Ethnic Studies. We also draw faculty from anthropology, communications, fine arts, environmental science, political science, sociology, and teaching and learning. American studies majors are encouraged to reinforce their studies with minors in one of these related fields, and the minor in American studies may be especially appropriate for students with majors in one of these departments.

The program offers a broad array of possibilities for doing American culture studies, but among our strengths are: the American West in multicultural perspective; the arts, culture, and social change; culture and environmental studies; and mass media, film, and popular culture. Beyond the core requirements listed below, students design their own coordinated track through the major in consultation with American studies faculty and the director of the program.

The undergraduate major is ideal for students who wish to bring their diverse other classes into a more focused study of the United States. International students may also find the program useful as a way to organize their experience of American culture. The major offers knowledge of the United States culture and critical thinking skills useful for careers in teaching, law, government service, and the nonprofit sector, among other areas.

Preparation for Graduate Study

American studies majors considering graduate work in this field should include college-level courses in at least one modern European foreign language in their undergraduate program. An area of concentration in American literature, American history, or comparative ethnic studies is strongly recommended, as are advanced writing courses. Students pursuing BA degrees in English, history, and other humanities and social science areas may also apply to the graduate Program in American studies at WSU; a guide to the MA and PhD program is available through the office of the director of American studies.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

AMERICAN STUDIES REQUIREMENTS (120 HOURS)

The undergraduate major consists of a core curriculum of 30 hours (with some options available within the core) plus an additional 12-hour area of concentration which permits students to investigate particular aspects of American culture.

Core Requirements, in suggested order: Hist 110, 111, Am St/Engl/Hist/W St 216, W St/CES/Soc 300; Engl 380, 381, or 382; 300-400-level American history; 300-400-level CES or W St; Am St/Engl 470, 471, 473, 475, or 477.

Areas of Concentration

A series of approved, linked courses in various departments have been established in the following interdisciplinary areas to satisfy the 12-hour requirement for an area of concentration:

1. Environment and Culture
2. Multicultural American West
3. Popular Culture, Film, and Mass Media
4. The Arts, Culture, and Social Change

The intention of the American studies faculty is to encourage students, with the approval of their advisors, to investigate areas not officially approved in the foregoing list. By designing their own programs and taking courses that will aid in their research, students can investigate the effects of agriculture, engineering, education, architecture, folklore, theatre, or mass communications, to name only a few, on American culture.

First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
<td>3</td>
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<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
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<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td>Science Elective (GER)</td>
<td>4</td>
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<tr>
<td>Elective</td>
<td>3</td>
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</table>

Second Year

<table>
<thead>
<tr>
<th>Term</th>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Foreign Language or Elective¹</td>
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<tr>
<td>Hist 110</td>
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<tr>
<td>Second Term</td>
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</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [L,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language of Elective¹</td>
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¹ Students pursuing BA degrees in English, history, and other humanities and social science areas may also apply to the graduate Program in American studies at WSU; a guide to the MA and PhD program is available through the office of the director of American studies.

Program in American Studies

libarts.wsu.edu/amerst/
Wilson 104
509-335-1560


(4) To further University and societal goals of equity for persons of all ages.

The program offers a minor in aging. The minor requires a minimum of 18 hours of credit including H D 203 or 305; FSHN 130; Psych/Aging 363; Soc 356 or S W/Aging 396, and approved aging-related courses (6 hours) to be selected from a list of recommended courses available from the program chair. Students must obtain approval of their course selection from the program chair. To register for the Program in Aging, students need to contact the program chair, M. Young, at 509-335-9203.

A Certificate in Gerontology is granted to students who complete the minor in aging with a GPA of at least 2.5 and an internship experience. The internship with a focus on aging must be completed either in human development or alcohol studies and may require additional prerequisites. All internships must be approved by the chair of the program prior to their initiation.

Description of Courses

Aging Courses

Aging

275 Special Topics in Aging: Study Abroad V 1–6 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

305 Gerontology 3 Same as H D 305.

363 Psychology of Aging 3 Same as Psych 363.

396 Social Work with the Aging 3 Prereq S W 190. Same as S S 396.

486 Special Topics in Aging: Study Abroad V 1–15 Prereq 6 hours in Anth, H D, Psych, or Soc. May be repeated for credit; cumulative maximum 15 hours. S, F grading.

500 Biological and Psychosocial Aspects of Aging 3 Prereq admission to certificate program or instructor’s permission. Multidisciplinary perspective on theoretical and practical understanding of the aging process and its impact on health care.

501 Current Issues in Aging 3 Prereq admission to certificate program or instructor’s permission. Multidisciplinary presentations of current issues in aging and approaches to care of the elderly population.

Areas of Concentration

A series of approved, linked courses in various departments have been established in the following interdisciplinary areas to satisfy the 12-hour requirement for an area of concentration:

1. Environment and Culture
2. Multicultural American West
3. Popular Culture, Film, and Mass Media
4. The Arts, Culture, and Social Change

The intention of the American studies faculty is to encourage students, with the approval of their advisors, to investigate areas not officially approved in the foregoing list. By designing their own programs and taking courses that will aid in their research, students can investigate the effects of agriculture, engineering, education, architecture, folklore, theatre, or mass communications, to name only a few, on American culture.

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<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<td>Elective</td>
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<td>Second Term</td>
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<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
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</tr>
<tr>
<td>Elective</td>
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</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Foreign Language or Elective¹</td>
<td>4</td>
</tr>
<tr>
<td>Hist 110</td>
<td>3</td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [L,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language of Elective¹</td>
<td>4</td>
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</tbody>
</table>

¹ Students pursuing BA degrees in English, history, and other humanities and social science areas may also apply to the graduate Program in American studies at WSU; a guide to the MA and PhD program is available through the office of the director of American studies.
Third Year

First Term Hours
Am St 216 3
Engl 380, 381, or 382 3
W St 300 3
Electives 6
Complete Writing Portfolio

Second Term Hours
Engl 380, 381, or 382 3
Major Concentration Area Elective 6
Electives 6

Fourth Year

First Term Hours
300-400-level CES or W St Elective 3
Am St 470, 471, 472, 473, 477, or 475 3
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Intercultural [I,G,K] (GER) 3
Elective 4

Second Term Hours
300-400-level American Hist Elective 3
Am St 470, 471, 472, 473, 474, or 475 3
Major Concentration Area Electives 6
Tier III Course [T] (GER) 3

1 Students must have one year of a foreign language if two years were not completed in high school.
2 Consult your advisor about courses for the 12 credit hours of major concentration area electives.

Minors

American Studies

A minor in American studies requires 21 hours, which includes:
Am St/Engl/Hist/W St 216, two courses from Am St/Engl 470, 471, or 472, two courses in an area of concentration, one course in 300-400-level American literature, and one course in 300-400-level American history.

Description of Courses

American Studies Courses

Am St

216 [S,D] American Cultures 3 Introduction to the interdisciplinary study of American cultures and the field of American studies.

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

410 [T] Cities in Fiction 3 Prereq completion of one Tier I and three Tier II courses. Exploration of the city as an active agent in the fictional works of North American authors.

470 [T] Literature and Culture of the American West 3 Same as Engl 470.

471 [T] Cultural Politics Since World War II 3 American popular culture, politics and culture of the 1960s, or topics in recent cultural politics.
panion animal management. This option requires fewer basic science courses while emphasizing economics and practical experience. Employment opportunities are found in general management of agricultural animal enterprises and the financial industry related to agriculture.

The Pre-veterinary Medicine/Science Option places more emphasis on basic science courses. This option is recommended for students planning to apply to the professional program leading to the Doctor of Veterinary Medicine, graduate school, or to study further and work in more technical or specialized aspects of the industry, such as extension service, teaching, technical consulting, or laboratory work.

Many opportunities outside the classroom are available for students to further their educational experiences. Animal sciences students are encouraged to participate as part-time employees in the livestock-production centers or in research and teaching programs within the department. Many opportunities are available to students for on-the-job training in professional internships with different segments of the agricultural, companion animal, or research sectors. Active student clubs within the Department of Animal Sciences and the College of Agricultural, Human, and Natural Resource Sciences and the University community provide students with both professional and social contacts with faculty and other students. Several departmental and college scholarships are available based on ability, financial need, and interest area.

Animal sciences courses are attractive to students in many other majors and from other backgrounds. Animal sciences courses broaden a student’s knowledge of applied biology, agriculture and the environment, and society in general. Many students find a minor in animal sciences complements and adds depth to other majors.

Transfer Students

Students planning to transfer to the Department of Animal Sciences, Washington State University, from community colleges or other institutions should complete as many of the required courses in chemistry, biological sciences, physics, mathematics, and general education as possible prior to transfer.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

INDUSTRY OPTION REQUIREMENTS (121 HOURS) ❈ FYDA

At least 40 of the total hours required for the bachelor's degree in this program must be in 300-400-level courses. One of the following degree programs must be chosen and completed.

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>A S 101</td>
<td>3</td>
</tr>
<tr>
<td>A S 180</td>
<td>1</td>
</tr>
<tr>
<td>Chem 101 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107, 140 [N], 171 [N], 201, or 202 [N] (GER)</td>
<td>3 or 4</td>
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Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A S 166, 172, 174, 175, 176, or 178†</td>
<td>2</td>
</tr>
<tr>
<td>Bio 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 102 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>ComS† 102 [C] or H D 205 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 or 111 [A] (GER)</td>
<td>3</td>
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</tbody>
</table>

Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A S 260, 272, or 360</td>
<td>3</td>
</tr>
<tr>
<td>AgEc 201[S] or Econ 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 or 111 [A] (GER)</td>
<td>3</td>
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<td>V MS 361</td>
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Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>A S 406 [M]</td>
<td>3</td>
</tr>
<tr>
<td>A S 440</td>
<td>3</td>
</tr>
<tr>
<td>A S 454†</td>
<td>2</td>
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<tr>
<td>Electives†</td>
<td>6</td>
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Second Term Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A S 408†</td>
<td>3</td>
</tr>
<tr>
<td>A S 466, 472, 474 [M], 476, or 478 [M]†</td>
<td>3</td>
</tr>
<tr>
<td>A S 488 [M] or NATRS 351†</td>
<td>3</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
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<tr>
<td>Electives†</td>
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First Term Hours

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>A S 285, 488, CropS 302, 303, or NATRS 351</td>
<td>3</td>
</tr>
<tr>
<td>A S 406 [M]†</td>
<td>3</td>
</tr>
<tr>
<td>A S 440</td>
<td>3</td>
</tr>
<tr>
<td>A S 454†</td>
<td>2</td>
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Electives†          | 6     |

First Term Hours

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</tr>
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<td>3</td>
</tr>
<tr>
<td>Electives†</td>
<td>3</td>
</tr>
</tbody>
</table>

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

JOINT PROGRAM IN ANIMAL SCIENCES AND VETERINARY MEDICINE

In order to meet the increasing demand for food-animal veterinarians, the Department of Animal Sciences and the College of Veterinary Medicine have created a combined program designed to train selected, highly qualified students to earn both a Bachelor of Science in Animal Sciences and a Doctor of Veterinary Medicine degree within a seven-year program. Students will take a three-year animal science program, completing all General Education Requirements, the animal sciences core, and pre-veterinary medicine requirements. This program includes mathematics, chemistry, including organic and biochemistry; general biology; physics; and the core of animal sciences courses, including an introduction to farm animals; then further education in animal feeds and nutrition, breeding and genetics, reproduction, and the economics of animal production management. Students will then enter the College of Veterinary Medicine and complete the requirements for total hours and 300-400-level hours before earning the BS in Animal Sciences. Students will continue the curriculum, leading to the DVM degree after a total of seven years of college work.

Students will enter the University under normal procedures and must be advised in the Department of Animal Sciences. Qualified students will be invited to apply for the program. A high scholastic achievement and the promise of the same and demonstrated experience and interest in working with farm animals will be the primary criteria for initial invitation. Selected students will be identified and invited to apply for the AS-DVM program in the second semester of the first year. Students would then declare animal sciences as a major in the first semester of the sophomore year and enter the joint program in that year. The procedures for acceptance into the DVM program will be the same as those for other applicants. Successful participants will complete the three-year animal sciences program and begin the veterinary medicine curriculum in their fourth year of study. A 3.0 or higher grade point average for the first year and a 3.3 gpa upon completion of the third year will be required for the program. If the student is not accepted or withdraws from the AS-DVM program, the student could earn the BS in Animal Sciences and/or apply to the College of Veterinary Medicine under normal procedures.

Fourteenth Years

Those students finishing all required classes would complete only the DVM curriculum from this point on, with the exception of V MS/A S 414. Students who still need either A S 406 or 408 would enroll in one of those in lieu of V MS/A S 414. If two 400-level animal production courses (A S 466, 472, 474, 476, or 478) were not completed, then students would enroll in one of them. Students will receive the BS in Animal Sciences upon successful completion of at least 120 credit hours and the final two 400-level A S classes. Most students will meet these requirements after one year of the DVM program. Successful completion of the College of Veterinary Medicine program will earn the Doctor of Veterinary Medicine degree.
### First Year

#### First Term
- **A S 101** 3
- **A S 166, 172, 174, or 180** 1
- **Biol 106 or GER** 3 or 4
- **Chem 105 [P] (GER)** 4
- **Engl 101 [W] (GER) or GER** 3
- **Math 107, 171 [N], or GER** 3

#### Hours
- **A S 166, 176, or 178** 1
- **Arts and Humanities [H,G] or Intercultural Studies [I,G,K]** 3
- **Biol 106 or 107 [B] (GER)** 4
- **Chem 106 [P] (GER)** 4
- **GER** 3
- **H D 205 [C] (GER)** 3

#### Second Year

#### First Term
- **Biol 107 [B] (GER)** 4
- **Chem 345** 4
- **GenEd 110 [A] or 111 [A] (GER)** 3
- **Phys 101 [P] (GER)** 4

#### Second Term
- **Ag Ec 201 [S] or Econ 101 [S] (GER)** 3
- **Arts & Humanities [H,G]** or **Social Sciences [S,K]** (GER) 3
- **GenEd 110 [A]** or **111 [A]** (GER) 3
- **Intercultural [I,G,K]** (GER) 3
- **MBioS 301** 4

#### Third Year

#### First Term
- **A S 313** 3
- **Engl 402 [W] (GER)** 3
- **Stat 412** 3
- **V An 308** 3
- **Elective [i]** 3
- **Complete Writing Portfolio** 3

#### Second Term
- **A S 314** 3
- **A S 330** 3
- **A S 350** 3
- **A S 351** 3
- **A S 360** 3
- **Elective [i]** 3

#### Fourth Year

#### First Term
- **A S 380** 3
- **A S 406 [M] or 408 [M]** 3
- **A S 440** 3
- **A S 441** 3
- **MBioS 303** 4
- **Tier III Capstone (GER)** 3
- **A S 466, 468, 472, 474, 476** 3
- **Elective [j]** 3

#### Second Term
- **A S 408** 4
- **A S 466, 468, 472, 474 [M], 476 [M]** 3
- **Tier III Course [T]** (GER) 3
- **Electives** 3

#### Notes
2. Some courses offered fall or spring term only.

### Production Management Degree Program (121 Hours)

#### First Year

#### Hours
- **A S 101** 3
- **A S 166 or 178** 1
- **A S 180** 1
- **Chem 101 [P] (GER)** 4
- **Engl 101 [W] (GER)** 3
- **Math 107, 140 [N], 171 [N], 201 or 202 [N] (GER)** 3 or 4

#### Second Term

#### Hours
- **A S 172, 174, 175, or 176** 1
- **Biol 106 [B] (GER)** 4
- **Chen 106 [P] (GER)** 4
- **ComSt 102 [C], or H D 205 [C]** (GER) 3

#### Second Year

#### Hours
- **A S 260 or 272** 3
- **Ag Ec 201 [S] (GER)** 3
- **Arts & Humanities [H,G]** (GER) 3
- **GenEd 110 or 111 [A]** (GER) 3
- **V MS 361** 3

#### Third Year

#### Hours
- **A S 313** 4
- **Acttg 230** 3
- **Arts & Humanities [H,G]** or **Social Sciences [S,K]** (GER) 3
- **Engl 201 [W]** or **402 [W]** (GER) 3
- **Elective [k]** 3

#### Fourth Year

#### Hours
- **A S 285, 488, CropS 302, 303, or NATRS 351** 3-6
- **A S 406 [M]** 4
- **A S 454** 2
- **Ag Ec 430** 3
- **Elective [l]** 3

#### Notes
1. Some courses offered fall or spring term only.
2. Take Stat 212 unless math proficiency has been taken.
4. Strongly recommended.

### Minors

#### Animal Sciences

A minor requires a minimum of 16 semester hours of animal science courses, half of which must be in 300-400-level work. Students wishing to declare a minor should consult the department as early as possible to develop an approved schedule of courses.
# Description of Courses

## Animal Sciences Courses

### A S

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Introductory Animal Science</td>
<td>3 (2-3)</td>
<td>Types and breeds of livestock, terminology, methods, management systems, techniques of animal and poultry production and consumer impact.</td>
</tr>
<tr>
<td>166</td>
<td>Horse Management Laboratory</td>
<td>1 (0-3)</td>
<td>Introductory laboratory designed to familiarize students with approved management practices for horse enterprises. S, F grading. Cooperative course taught by WSU, open to UI students (AVS 166).</td>
</tr>
<tr>
<td>172</td>
<td>Dairy Cattle Management Laboratory</td>
<td>1 (0-3)</td>
<td>Management practices associated with a dairy enterprise. S, F grading. Cooperative course taught by UI (AVS 172), open to WSU students.</td>
</tr>
<tr>
<td>174</td>
<td>Beef Cow Calf Management Laboratory</td>
<td>1 (0-3)</td>
<td>Management practices associated with a beef cow calf enterprise for students without experience. S, F grading. Cooperative course taught jointly by WSU and UI (AVS 174).</td>
</tr>
<tr>
<td>198</td>
<td>Honors, Introductory Animal Science</td>
<td>3 (2-3)</td>
<td>Prereq Stat 212. Basic genetic concepts and methods for the genetic improvement of Mendelian and polygenic traits in animals. Cooperative course taught by WSU, open to UI students (AVS 330).</td>
</tr>
<tr>
<td>275</td>
<td>Special Topics: Study Abroad</td>
<td>3 (2-3)</td>
<td>Prereq A S 213 and 313. Cooperative course taught jointly by WSU and UI (AVS 275).</td>
</tr>
<tr>
<td>330</td>
<td>Animal Genetics</td>
<td>3 (2-3)</td>
<td>Prereq Stat 212. Basic genetic concepts and methods for the genetic improvement of Mendelian and polygenic traits in animals. Cooperative course taught by WSU, open to UI students (AVS 330).</td>
</tr>
<tr>
<td>345</td>
<td>Introduction to Animal Growth and Development</td>
<td>3 (2-3)</td>
<td>Prereq A S 101, Biol 106. Animal structure, composition, whole body and cellular growth, prenatal and postnatal growth; emphasis on skeletal muscle, bone and adipose tissue. Cooperative course taught by WSU, open to UI students (AVS 315).</td>
</tr>
<tr>
<td>346</td>
<td>Introduction to Skeletal Muscle Physiology</td>
<td>3 (2-3)</td>
<td>Structure, function and regulation of skeletal muscle; embryonic, neonatal, postnatal growth/atrophy; muscle-specific proteins. Cooperative course taught by WSU, open to UI students (AVS 316).</td>
</tr>
<tr>
<td>350</td>
<td>Physiology of Reproduction</td>
<td>3 (2-3)</td>
<td>Prereq Biol 106 or 107; Chem 102 or 106. Anatomy and physiology of reproductive organs; hormones of reproduction; production of gametes; artificial insemination; fertilization; prenatal development; fertility and infertility. Cooperative course taught jointly by WSU and UI (AVS 452).</td>
</tr>
<tr>
<td>351</td>
<td>Physiology of Reproduction Laboratory</td>
<td>1 (0-3)</td>
<td>Prereq A S 350 or c/. Laboratory and field techniques used in animal reproduction involving hormones, artificial insemination, semen evaluation and pregnancy.</td>
</tr>
<tr>
<td>367</td>
<td>Prevention and Management of Equine Health Problems</td>
<td>3 (2-3)</td>
<td>Same as V MS 367.</td>
</tr>
<tr>
<td>378</td>
<td>Advanced Livestock and Meat Selection and Evaluation</td>
<td>2 (0-6)</td>
<td>Prereq A S 260 or 272. Principles and practices of livestock and meat selection and evaluation. Off-campus and weekend participation required. May be repeated for credit.</td>
</tr>
<tr>
<td>380</td>
<td>Careers in Animal Science</td>
<td>1 (0-3)</td>
<td>Issues and preparation for careers in animal sciences areas.</td>
</tr>
<tr>
<td>396</td>
<td>Cooperative Education Externship</td>
<td>V 2-8</td>
<td>Cooperative education externship in livestock production or related field. May be repeated for credit; cumulative maximum in A S 398 and 399: 12 hours. S, F grading.</td>
</tr>
<tr>
<td>399</td>
<td>Practicum</td>
<td>V 1-8</td>
<td>Directed internship in livestock production and related fields conducted at WSU centers on or off campus. May be repeated for credit; cumulative maximum in A S 398 and 399: 12 hours. S, F grading.</td>
</tr>
<tr>
<td>401</td>
<td>Special Topics—Study Abroad</td>
<td>V 1-12</td>
<td>Animal sciences study abroad.</td>
</tr>
</tbody>
</table>

### Special Topics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>313</td>
<td>Feeds and Feeding</td>
<td>3 (3-3)</td>
<td>Prereq Biol 106. Utilization, practices, requirements, nutritive characteristics, and calculations of rations for animals. Field trip required. Credit not granted for both A S 213 and 313. Cooperative course taught jointly by WSU and UI (AVS 306).</td>
</tr>
<tr>
<td>408</td>
<td>Ruminant Nutrition</td>
<td>3 (3-3)</td>
<td>Prereq A S 313. Anatomyp, physiology, and metabolism in ruminant animals. Credit not granted for both A S 408 and 508.</td>
</tr>
<tr>
<td>410</td>
<td>Canine and Feline Nutritional Biology</td>
<td>3 (3-3)</td>
<td>Prereq A S 313, 314. Nutritional biology of the domestic canine and feline; topics include nutrition, reproduction, health and behavior.</td>
</tr>
<tr>
<td>428</td>
<td>Topics in Animal Breeding</td>
<td>2 (0-6)</td>
<td>Prereq A S 330. Systems of selection and mating for genetic improvement in farm animals. Credit not granted for both A S 428 and 528. May be repeated for credit; cumulative maximum 4 hours.</td>
</tr>
<tr>
<td>440</td>
<td>Physiology of Domestic Animals</td>
<td>3 (2-3)</td>
<td>Prereq V An 308. Basic animal functions; relationship and difference between domestic animals; measurement of functional processes.</td>
</tr>
<tr>
<td>452</td>
<td>Physiology of Lactation</td>
<td>3 (2-3)</td>
<td>Prereq A S 350. Anatomy, physiology, and endocrine control of mammary gland development and milk secretion process. Cooperative course taught jointly by WSU and UI (AVS 413).</td>
</tr>
<tr>
<td>454</td>
<td>Artificial Insemination and Pregnancy Detection</td>
<td>2 (0-6)</td>
<td>Prereq A S 351. Techniques in semen handling, insemination and pregnancy detection in cattle. Special clothing required. Cooperative course taught jointly by WSU and UI (AVS 218).</td>
</tr>
<tr>
<td>464</td>
<td>Companion Animal Management</td>
<td>3 (2-3)</td>
<td>Prereq in nutrition; course in statistics; Biol 102, 106, or 107. Care and management of companion animal species throughout the life cycle, including nutrition, reproduction, exercise and behavior. Cooperative course taught by WSU, open to UI students (AVS 464).</td>
</tr>
<tr>
<td>466</td>
<td>Horse Production</td>
<td>3 (2-3)</td>
<td>Prereq A S 313, 330, 350. Principles of breeding, feeding, and management of horses. Field trip required. Cooperative course taught by WSU, open to UI students (AVS 466).</td>
</tr>
<tr>
<td>468</td>
<td>Concepts in Aquaculture</td>
<td>2 Prereq NATRS 421, or permission of instructor. Same as NATRS 424.</td>
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</tbody>
</table>

474 [M] Beef Cattle Production 3 (2-3) Prereq A S 313, 330, 350. Breeding, feeding, and management; commercial and purebred enterprises; management of beef cattle on ranges, pastures and in the feedlot. Field trip required. Cooperative course taught jointly by WSU and UI (AVS 474).

476 Sheep Science 3 (2-3) Prereq A S 313, 330, 350. Application of principles of genetics, reproduction, nutrition, health, marketing to management; and use of wool. Cooperative course taught by UI (AVS 476), open to WSU students.

478 [M] Swine Production 3 (2-3) Prereq A S 313, 330, 350. Principles of breeding, feeding, management, and marketing of swine. Field trips and special clothing required. Cooperative course taught by WSU, open to UI students (AVS 478).

480 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

488 [M] Perspectives in Biotechnology 3 Prereq MBios 301. Theory and application of biotechnology in agriculture, industry, and medicine; methodological, environmental, social, and economic concerns. Credit not granted for both A S 488 and 588. Cooperative course taught by WSU, open to UI students (AVS 488).

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 Seminar in Animal Sciences 1 Current developments in animal sciences. May be repeated for credit.

504 Special Topics V 1-4 May be repeated for credit; cumulative maximum 12 hours. Cooperative course taught by UI (AVS 504), open to WSU students.

506 Non-Ruminant Nutrition 3 (2-3) Prereq A S 313. Graduate-level counterpart of A S 406; additional requirements. Credit not granted for both A S 406 and 506.

507 Advanced Nutrient Metabolism 3 Prereq A S 406 or 408; 504, MBios 303. Advanced topics in metabolic regulation of carbohydrate, fat and amino acid use by animals. Cooperative course taught by WSU, open to UI students (AVS 507).

508 [M] Ruminant Nutrition 3 Prereq A S 313. Graduate-level counterpart of A S 408; additional requirements. Credit not granted for both A S 408 and 508.

510 Digestion and Nutrient Utilization in Animals 2 (1-2) Gastrointestinal physiology, rate of passage, feed intake regulation, measures of digestibility, starch, fat and nonstarch polysaccharide, and digestion and utilization of nutrients. Cooperative course taught by WSU, open to UI students (AVS 510).

513 Mineral and Vitamin Metabolism 4 Prereq A S 406 or 408; MBios 303. Absorption, excretion, metabolism, dietary requirements and interactions of minerals and vitamins in animals and humans. Cooperative course taught by WSU, open to UI students (AVS 513).

520 Preparation of Scientific Literature in Animal Sciences 2 Prereq graduate standing. Preparation of grant proposals, manuscripts, and literature reviews on research topics.

528 Topics in Animal Breeding 2 Prereq A S 330. Graduate-level counterpart of A S 428; additional requirements. Credit not granted for both A S 428 and 528.

540 Seminar in Animal Physiology 1 Current developments in animal physiology. Cooperative course taught jointly by WSU and UI (AVS 540). May be repeated for credit.

550 Advanced Reproduction 4 (3-3) Prereq A S 350. Physiology of sexual maturation: gametogenesis; sexual cycle; fertilization; embryonic development; physiological, chemical and immunological characterization of hormones of reproduction. Cooperative course taught by WSU, open to UI students (AVS 550).

551 Endocrine Physiology 3 Graduate-level counterpart of A S 451; additional requirements. Credit not granted for both A S 451 and 551.

556 Embryo Transfer in Domestic Animals 2 Prereq A S 350. Embryo transfer in domestic animals including techniques, equipment, and state-of-the-art biotechnology.

557 Laboratory in Embryo Transfer 1 (0-3) Prereq c// in A S 556. Laboratory principles and practices in embryo transfer.

558 Molecular and Cellular Reproduction 3 (2-2) Same as MBios 528.

573 Advanced Dairy Management 3 (1-6) Prereq A S 472. Graduate-level counterpart of A S 475; additional requirements.

578 Perspectives in Biotechnology 3 Prereq MBios 301. Graduate-level counterpart of A S 488; additional requirements.

598 Advanced Topics in Animal Sciences 1 or 2 Recent research in various disciplines of animal sciences. Cooperative course taught by WSU, open to UI students (AVS 598). May be repeated for credit.

600 Special Projects or Independent Study Variable credit S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit S, F grading.
anthropology, as well as the ways in which these four subfields are interrelated;

2. Awareness of the basic research and analytical methods and underlying theories of the four subfields of anthropology;

3. Ability to read critically and synthesize information produced by professional anthropologists and published in academic books and journals;

4. Ability to write in accessible, standard, academic prose narratives that are marked by: a framework of clear, general statements; specific, concrete evidence that supports these statements; analysis and discussion of the material presented; and a coherent summary conclusion, indicating the significance of the work;

5. Ability to apply the principles, findings, and research and analytical methods of anthropology to new situations and data, including those of everyday life.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

ANTHROPOLOGY DEGREE PROGRAM

(120 HOURS) 4 FYDA

A minimum of 33 hours in anthropology courses are required. Grades of C- or higher are considered passing grades for all anthropology classes; D+ and lower are failing grades. No required course can be taken pass, fail.


First Year

First Term  Hours
Anth 203          3
Engl 101 [W]  (GER)  3
Foreign Language, if necessary, or Elective1  3 or 4
GenEd 110 [A]  (GER)  3
Science Elective [B,P]  (GER)  4

Second Term  Hours
Anth 260          4
Biological Sciences [B]  (GER)  4
Communication [C,W]  (GER)  3
Foreign Language, if necessary, or Elective1  3 or 4
GenEd 111 [A]  (GER)  3

Second Year

First Term  Hours
Anth 230          3
Math Proficiency [N]  (GER)2  3 or 4
Physical Sciences [P]  (GER)  4
Social Sciences [S,K]  (GER)  3

Second Term  Hours
Anth & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K]  (GER)  6
Biological Anth Elective1  3
Cultural Anth Elective1  3
Intercultural [I,G,K]  (GER)  3

Third Year

First Term  Hours
Archeology Anth Elective3  3
Anthropology Arts & Humanities [H,G]  (GER)  3
Arts & Humanities [H,G] or Social Sciences [S,K]  (GER)  3
Electives4  6

Second Term  Hours
300-400-level Electives4  9
Anth Electives4  6
Consider study abroad or summer field school

Fourth Year

First Term  Hours
300-400-level Electives4  9
Anth 401 [M], 403 [M], 405 [M], 430 [M] or 468[M]  3
Linguistic Anth Elective1  3

Second Term  Hours
300-400-level Electives4  9
Anth 490 [M]  3
Tier III Course [T]  (GER)  3

1 Two years of one foreign language from high school or one year at college required.
2 Math 212 preferred.

Minors

Anthropology

A student with 60 semester hours may certify a minor. A minor requires a minimum of 18 semester hours in anthropology, including three of the following: Anth 101 or 198, 203, 230, and 260. At least 9 hours must be 300-400-level work. A minimum grade of C- is required in each course contributing to the minor.

Description of Courses

Anthropology Courses


130 [I] Great Discoveries in Archaeology 3 Impact of great archaeological discoveries and the work of archaeologists on our sense of the past.

198 [K] Anthropology Honors 3 Open only to students in the Honors College.

201 [G] Art and Society 3 Art as an expression of social and cultural systems in non-Western societies.

203 [K] Peoples of the World 3 Principles of cultural anthropology through study of various ethnic groups from different parts of the world.

214 [S,D] Gender and Culture in America 3 Exploration or variation in gender roles, relationships, values, and institutions among men and women in US, ethnic, and other subcultures.

230 Introduction to Archaeology 3 Development of a dynamic picture of past human behavior from archaeological evidence.

256 Introduction to Syntax and Semantics 3 Same as Engl 256.

260 [B] Introduction to Physical Anthropology 3 Exploration or variation in gender roles, relationships, values, and institutions among men and women in US, ethnic, and other subcultures.

275 Special Topics: Study Abroad 3 V 1-15 May be repeated for credit. S, F grading.

300 Field Methods V 2-8 Prereq permission by application. Practice in methods of archaeological, ethnological, or linguistic field research.

301 [G] Arts and Media in Global Perspective 3 Contemporary arts and media around the world, and their impact on identity, society, and culture.


303 Gods, Spirits, Witchcraft and Possession 3 Non-Western religions; religion as a cultural system.

306 [K] Cultures and Peoples of the Middle East 3 Contemporary Arab cultures in a historical perspective within the framework of Western-Middle Eastern relations.

307 [K] Contemporary Cultures and Peoples of Africa 3 Introduction to family, social, political, economic and religious institutions of African cultures in context of African social issues.

309 [K] Cultural Ecology 3 Major findings of ecological anthropology relating to problems of population, resources, and environment in small-scale cultures.

312 [S,D] Native American Women in Traditional and Contemporary Societies 3 Same as CES 372.
316 [K] Gender in Cross Cultural Perspective 3 Prereq Anth 101, Psych 105, Soc 101, or W St 200; sophomore standing. Cross-cultural examination of the status and roles of women and men, sexuality and marriage; and folk concepts of sexual anatomy in traditional cultures in Western science; concepts of nature and culture are explored through a variety of perspectives.

317 [I] Global Feminisms 3 Same as W St 332.


327 [S,D] Contemporary Native Peoples of the Americas 3 Prereq Anth 101 or CES 171. Contemporary cultures of Native American communities emphasizing North America.

330 [S] Origins of Culture and Civilization 3 Prereq 3 hours Anth. Prehistoric roots of culture from the beginnings of humankind to the rise of the first civilizations in Africa and Eurasia.

331 [K] America Before Columbus 3 Prereq Anth 101 or GenEd 110. Cultures and environments of North/Middle America from the arrival of the earliest hunter-gatherers to the complex Mayan and Aztec civilizations.

334 [S,D] Time and Culture in the Northwest 3 Prereq Anth 101 or permission of instructor. The archaeologically reconstructed environmental and cultural past of the Northwest including contemporary scientific and social approaches and issues.


350 [S] Speech, Thought and Culture 3 The role of language in social situations and as a reflection of cultural differences.

355 Language in History 3 Writing systems, language in reconstruction of culture history, language families, evolution, and parallels.

370 Past Environments and Culture 3 People and their environments from the Ice Age to modern time; archaeological, ecological, and biological data.

395 Topics in Anthropology V 3-6 Prereq junior standing. Examination of selected topics in contemporary anthropological theory and practice. May be repeated for credit; cumulative maximum 6 hours.

399 Archaeological Field School V 2-8 (0-6)—(0-24) Prereq permission of instructor by application. Training in methods of archaeological data recovery and analysis.


404 [T] The Self in Culture 3 Prereq 100, 200, and 300-level (one of each) in Anth, Hist, Psych, Literature, or Soc; completion of one Tier I and three Tier II courses. Survey of anthropological theories exploring self in Western/non-Western cultures through dreams, history, and human development.

405 [T,M] Medical Anthropology 3 Prereq completion of one Tier I and three Tier II courses. Relationships among disease, curing, culture and environment; non-Western medical systems; political economy of health care.

410 History of American Indian Sovereignty and Federal Indian Law 3 Same as Hist 410.

417 [T] Anthropology and World Problems 3 3 credits Anth, completion of one Tier I and three Tier II courses. Data and methods of cultural anthropology applied to the solution of contemporary human problems, emphasizing sustainable development.

418 Human Issues in International Development 3 Interdisciplinary analysis of complex interaction between tradition and modernity in Third World societies.

419 Cultural Components of International Business 3 Introduction to the cultural aspects of business.

428 Historical Ethnography 3 Prereq 3 hours Anth. Culture history, ethnography, theoretical, and contemporary problems of selected culture areas. Credit not granted for both Anth 428 and 528. May be repeated for credit; cumulative maximum 9 hours.

430 [M] Introduction to Archaeological Method and Theory 3 Prereq Anth 230; 330 or 331. Archaeological theory in anthropological perspective; current trends in method and theory in American archaeology.

436 Ethnoarchaeology 3 Multidisciplinary approach (archaeology, ethnography and history) to the interpretation of past human cultures. Credit not granted for both Anth 436 and 536.

450 Descriptive Linguistics 3 Introduction to analysis and description of natural languages; phonological, syntactic, and semantic analysis of data from a variety of languages. Credit not granted for both Anth 450 and 550. Cooperative course taught by WSU, open to UI students (Anth 450).


466 Human Osteology 3 (2-3) Prereq Anth 260. Observations and measurements of human skeletons; variations based on age, sex, and race; comparisons with fossil human and higher primates. Credit not granted for both Anth 466 and 566. Cooperative course taught jointly by WSU and UI (Anth J451/J551).

468 [T] Sex, Evolution, and Human Nature 3 Prereq 3 hours Anth or Biol; completion of one Tier I and three Tier II courses. Human sexuality, male-female relations, cooperation, violence and parent-child relations examined cross-culturally and in nonhuman primates utilizing evolutionary and biocultural perspectives.

469 [T] Genes, Culture and Human Diversity 3 Prereq completion of one Tier I and three Tier II courses. Relationships between genes, language and culture are explored as a means to understanding world history, genetic and cultural diversity and unity.

480 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.


498 Anthropology Internship V 1-15 Prereq junior standing. Participation as archaeological or cultural anthropological intern in public or private sectors; requires special arrangement with faculty advisor. May be repeated for credit; cumulative maximum 15 hours. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 Field Methods 2 (0-6) to 8 (0-24) Prereq permission by application. Training in gathering and analyzing field data.

501 [M] History of Anthropological Theory 3 Prereq 6 hours Anth. Graduate-level counterpart of Anth 401; additional requirements. Credit not granted for both Anth 401 and 501.

502 Cross-cultural Gender and Kinship 3 Graduate-level counterpart of Anth 402; additional requirements. Credit not granted for both Anth 402 and 502.

504 Tribal Peoples and Development 3 Global and historic perspectives on the complex issues surrounding the problem of tribal peoples and development.

507 Advanced Studies in Culture Theory 3 Prereq 6 hours in social sciences. Evaluation of major theories and methods and their relationship to problems in cultural-social analysis. May be repeated for credit; cumulative maximum 6 hours.
510 Fundamentals of Cultural Anthropology
3 Overview of basic concepts and theory in cultural anthropology based on in-depth analysis of selected theoretical and ethnographic materials.

513 Lithic Technological Organization 4 (3-3) Methods and theory of lithic technology.

514 Ceramic Analysis 4 (3-3) Prereq graduate standing or permission of instructor. Basic concepts, methods, and approaches used in the analysis of archaeological pottery.

519 International Development and Human Resources 3 History of and recent changes in international development emphasizing anthropological perspectives.

528 Historical Ethnography 3 Graduate-level counterpart of Anth 428; additional requirements. Credit not granted for both Anth 428 and 528.

530 Archaeological Method and Theory 3 History of archaeological method and theory; analysis of current literature.

535 Cultural Resource Management 3 Prereq graduate standing. Role of archaeology in historic preservation and resource conservation; legal and institutional frameworks; research and interpretation in a CRM context. Cooperative course taught by WSU, open to UI students (Anth 535).

536 Ethnoarchaeology 3 Graduate-level counterpart of Anth 436; additional requirements. Credit not granted for both Anth 436 and 536.

537 Quantitative Methods in Anthropology 4 (3-3) Prereq undergraduate Stat course. Sampling, exploratory data analysis, inferential statistics, and use of SAS in anthropological research with emphasis on archaeology. May be repeated for credit; cumulative maximum 8 hours.

539 Prehistory of the Southwest 3 Prehistory of the American Southwest; emphasis on Pueblo, Mogollon and Hohokam traditions and relationships to historic native groups.

540 Prehistory of the Northwest Coast 3 Prehistoric cultures, chronologies, and inter-relationships on the northwest coast of North America.

542 Prehistory of Alaska and Eastern Siberia 3 Prehistoric cultural developments in the Arctic and sub-Arctic zones of Asia and North America.

543 Plateau Prehistory 3 Archaeology of the interior Northwest.

545 Historical Archaeology 3 Excavation and analysis of historical archaeological sites; cultural rational implications. Cooperative course taught by UI (Anth 531), open to WSU students.

546 Prehistory of the Desert West 3 Changing desert environments and human adaptations; perspectives for understanding desert prehistory; ancient lifeways of the Desert West.

547 Models and Simulation 3 Models and model-building as an anthropological approach to present and past cultures.

548 Hunters and Gatherers: Past and Present 4 (3-3) Prereq graduate standing. Introduction to hunter-gatherer studies in anthropology and archaeology exploring uses of evolutionary approaches to modeling and reconstructing hunter-gatherer behavior in contemporary and prehistoric contexts.

550 Descriptive Linguistics 3 Graduate-level counterpart of Anth 450; additional requirements. Credit not granted for both Anth 450 and 550.

554 Anthropological Field Methods Seminar 3 Prereq Anth 450 or 550. Elicitation, recording techniques and analysis of sociocultural and linguistic field data.

561 Current Trends in Physical Anthropology 3 Prereq Anth 465. Intensive review of major current trends in physical anthropology. May be repeated for credit.

562 Evolutionary Method and Theory in Anthropology and Archaeology 3 Prereq permission of instructor. A graduate-level seminar-based course focusing on the evolutionary analysis of past and present human behavior.

563 Human Races 3 Prereq Anth 260, Graduate-level counterpart of Anth 463; additional requirements. Credit not granted for both Anth 463 and 563.

565 Human Evolution 3 Prereq Anth 260. Graduate-level counterpart of Anth 465; additional requirements. Credit not granted for both Anth 465 and 565.

568 Paleanthropology 4 (3-3) Prereq Anth 565. An in-depth survey of the fossil evidence for human evolution, incorporating research methods and theory.

569 Evolutionary Cultural Anthropology 3 Prereq graduate standing. Evolutionary nature of culture and its interactions with human biology (genes) and ecology.

570 Sediments in Geoarchaeology 4 (3-3) Sediment-forming processes, sedimentological techniques, reconstruction of Quaternary environments, and sedimentology of site-forming processes.

573 Zooarchaeology 4 (2-6) Identification of animal bones from archaeological sites, methodological and theoretical techniques for interpreting faunal remains. Cooperative course taught by WSU, open to UI students (Anth 573).

576 Palynology 4 (3-3) Pollen and spore morphology, evolution, production, dispersal, and preservation; index fossils, dating, archaeology, and vegetational history. Field trip required.

591 Special Topics in Anthropology 3 Examination of current areas of anthropological theory and research. May be repeated for credit; cumulative maximum 9 hours.

592 Special Topics in Anthropology 3 Examination of current areas of anthropological theory and research. May be repeated for credit; cumulative maximum 9 hours.

593 Publishing and Professional Communication 3 Preparation of original research reports; survey of types of professional communication, and of standards and techniques.

598 Advanced Anthropology Internship V 1-15 Prereq graduate standing. Participation as archaeological or cultural anthropological intern in public or private sectors; requires special arrangement with faculty advisor. May be repeated for credit; cumulative maximum 30. S, F grading.

599 Archaeological Field School V 2-8 (0-6) (0-24) Prereq graduate standing and permission of instructor by application. Training in methods of archaeological data recovery and analysis.

600 Special Projects or Independent Study Variable credit S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

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Department of Anthropology

amdt.wsu.edu/

Interim Chair, A. Kirschner; Professor, L. Arthur; Associate Professor, C. Salusso; Assistant Professors, J. Anderson, K. Cho, L. Khosa; Instructors, P. Fischer, C. Urquhart.

Apparel, Merchandising, Design, and Textiles offers Bachelor and Master of Arts degrees, and can participate in the Interdisciplinary Doctoral Program.

The Department of Apparel, Merchandising, Design, and Textiles has no peers in the state when considering the range and depth of programs at the undergraduate and graduate levels. The Washington textile and apparel industry is global, massive, multi-faced, and in close competition with California for level of productivity and profit. The apparel and textiles industry is the fifth largest industry in the state of Washington. Apparel, merchandising, design, and textiles graduates are thoroughly prepared to participate in the interdisciplinary Doctoral Program.

The curriculum options are designed to:

- Develop an understanding of the societal, psychological, and cultural factors that influence consumer response to apparel and textile products.
• Provide opportunities for students to practice methods and skills required for developing apparel and textile products, merchandising those products, analyzing consumer uses, and mediating consumer responses to apparel and textile products.
• Develop analytical, evaluative, communication, teamwork, and leadership skills necessary to succeed in today’s work environment.

Certification Requirements
Students wishing to certify in apparel merchandising, design, and textiles must have a minimum 2.70 cumulative GPA. Students must receive a C or better grade in all AMT courses and a course may only be repeated once. Courses required in these programs cannot be taken on a pass, fail basis.

Areas of Study
All apparel, merchandising, design, and textile majors complete core courses that introduce fundamental concepts and methods. Students then develop an area of expertise by selecting an option in apparel design, merchandising, or textile design plus a minor or combination of courses reflective of career interests and goals.

Internships
Students in the merchandising option must complete an internship, while apparel design and textiles design option students are highly encouraged to complete a cooperative internship in the apparel, merchandising, and textile industry. Opportunities exist within the apparel, merchandising, and textile complex throughout Washington, across the United States and through our active study abroad program. Internships provide a competitive edge and yield higher-level positions upon graduation as well as significantly better entry salaries.

Preparation for Graduate Study
Normally, the applicant for graduate study should have an undergraduate major in apparel, merchandising, design, and textiles. However, candidates with a good record in related fields may be well prepared for certain areas of advanced study. Students from related disciplines are required to take some courses required of undergraduate majors in these fields. Please refer to WSU Graduate catalog and Web site at www.wsu.edu:8080/~gradsch/.

Schedules of Studies
Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

APPAREL DESIGN REQUIREMENTS
(122 HOURS)
Apparel design focuses on the interaction between design and merchandising and offers depth in apparel design. Students typically complete a minor in fine arts and/or business administration.

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<thead>
<tr>
<th>First Year</th>
<th>Hours</th>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td></td>
<td>AMT 108</td>
<td>3</td>
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<td></td>
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<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<td>FA 101 [H] (GER) recommended</td>
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<td></td>
<td></td>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<td></td>
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<td>Soc 101 [S] or Psych 105 [S] (GER) recommended</td>
<td>3</td>
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<tr>
<td>Second Term</td>
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<td>AMT 208</td>
<td>3</td>
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<td>ComS 102 [C] or H D 205 [C] (GER) recommended</td>
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<td>FA 110 or 111</td>
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<td>FSHN 130 [B] (GER) recommended GenEd 111 [A] (GER)</td>
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<tr>
<th>Second Year</th>
<th>Hours</th>
<th>First Term</th>
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MERCHANDISING REQUIREMENTS
(120 HOURS)
Merchandising includes courses designed to allow students to develop competence in the planning, buying, and selling of merchandise in either manufacturing or retail organizations. Curriculum includes a focus on marketing. Students often pursue one of the minors in business.

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<td>ComS 102 [C] or H D 205 [C] (GER) recommended</td>
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Description of Courses
Apparel, Merchandising, and Textiles Courses
AMT
108 Introduction to Apparel, Merchandising, Design and Textiles 3 An introduction to apparel, textiles, merchandising and design with an emphasis on an examination of industry structures and careers.
208 Visual Merchandising and Promotion 3 (2-2) Examination of fashion promotion components of visual display store layout, fashion show, and fashion forecasting. Cooperative course jointly taught by WSU and UI (FCS 208).

211 Apparel and Textile Product Development 3 (0-6) Problem solving approach to apparel and textile product assembly with emphasis on product development process.

215 Textile Fundamentals 4 (3-2) Examination of basic textile components including natural and manufactured fibers, yarns, fabric construction, dyes, and finishes.

220 Historic Costumes and Textiles 3 Historical survey of western dress and textiles from prehistory to mid-1800s.

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

311 Draping and Flat Pattern 3 (0-6) Prereq AMT 211, 215. Introductory draping, drafting, and flat pattern techniques for apparel patternmaking.

314 Fashion Forecast 3 (2-2) Prereq AMT 208, 215 or by permission. Developing forecasting expertise needed to work in merchandising environment; examined through influences on acceptance and rejection of apparel/textile products.


316 Advanced Patternmaking 3 (0-6) Prereq AMT 211, 311. Advanced level exploration of draping and flat pattern techniques; fit; industry and couture practices.

318 Merchandise Buying and Planning 3 (2-2) Prereq Econ GER, Math GER, AMT 314, Ag Ec 210 or by permission. In-depth study of apparel buying and planning, application of buying and planning principles, problem solving skill development.

320 Textiles Design I 3 Prereq AMT 108, 215. Textile design with emphasis upon weaving, dying, surface design, or graphics.

321 Textile Design II 3 (0-6) Prereq AMT 320 or by permission. Development of conceptual and technical abilities in the textile arts with an emphasis on individual expression and designing for industry.

322 Textile Design III 3 (0-6) Prereq AMT 320 or permission. Computer-aided design techniques for professional textile design portfolio development. May be repeated for credit; cumulative maximum 6 hours.

368 Illustration and Rendering Techniques 3 (0-6) Prereq AMT 208; 220. Illustration and rendering used for costume and fashion design.

370 Theatrical Costuming 3 (0-6) Prereq AMT 211 or permission. Creation of costumes for play following design throughout production process; parallels between costume shop and apparel industry couture shop.

408 Visual Analysis and Aesthetics 3 Prereq AMT 368, Com 321, F A 304 or Mktg 360. In-depth analysis of the visual interaction among apparel, accessories and the body; indentifying effective visual communication.

410 Advanced Assembly Techniques 3 (0-6) Prereq AMT 215, 311, 316. Advanced assembly techniques for a range of textiles and multilayer garments; emphasis of high-quality execution on final products.

411 Fashion Line Pre-development 1 (0-2) Prereq AMT 311. Exploration of design inspiration and development of theme and strategy for a fashion line presented in an annual fashion show event.

412 Fashion Line Development 3 (0-6) Prereq AMT 410. Development of original fashion lines for an annual fashion event.

413 M International Trade in Textiles and Apparel 3 Prereq Mktg 360. Economic/social conditions influencing apparel trade and consumption; comparison of production, distribution, and consumption of apparel in the global economy.

417 T.D.M Multicultural Perspectives on the Body and Dress 3 Prereq 6 hours social science; completion of one Tier I and three Tier II courses. Engagement in multidisciplinary approaches that explore the social importance of the body, gender, and dress.

419 Regional Experience in Apparel/Textiles Field V 1-3 Prereq certified majors or permission of instructor. Field trips to experience the textile and apparel industry from the perspective of professionals within a wide range of careers. May be repeated for credit; cumulative maximum 4 hours.

420 M History of Fashion Design 3 Prereq AMT 215 or by permission. Overview of apparel design, designers and social history in the 20th century.

429 National Experience in Apparel/Textiles Field V 1-3 Prereq junior standing. Field trip to experience national culture integrated with the field of textiles and apparel in industry centers in the US. May be repeated for credit; cumulative maximum 6 hours.

439 International Experience in Apparel/Textiles Field V 1-3 Field trip to experience international culture integrated with the field of textiles and apparel in industry centers worldwide. May be repeated for credit; cumulative maximum 6 hours.

450 Strategy Planning and Decision Making 3 Prereq AMT 318. Examination and synthesis of advanced merchandising theory; strategic planning, decision-making and the role of technology in the textile and apparel industry.

460 M Costume Museum Management 3 Prereq junior standing. Skills and techniques for handling textiles and apparel artifacts in museums.

480 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

490 Cooperative Education Internship V 1-10 Experience with business, industry or government unit. May be repeated for credit; cumulative maximum 10 hours.

492 Computer Applications in Apparel, Textile, and Design 3 (1-4) Prereq AMT 316, AMT/F A/Theat 368 or permission. Computer-aided design techniques in fashion graphics; portfolio development and presentation.

495 Instructional Practicum V 1-4 Prereq by interview only. May be repeated for credit; cumulative maximum 4 hours.

496 Special Event Production V 1-3 Prereq AMT 208 or 211, department major and permission of instructor. Producing, exhibiting, and promoting product lines/special events or apparel, textiles and illustrations exhibits. May be repeated for credit; cumulative maximum 6 hours.

498 Special Topics V 1-3 Current issues, trends, and merchandising strategies in apparel and textiles. May be repeated for credit; cumulative maximum 6 hours.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

508 Theoretical Frameworks Underlying Scholarship 3 Exploration of current topics through readings in apparel, merchandising, and textiles.

512 Apparel Design Graduate Studio 3 Prereq AMT 508. Integration of consumer demand target market research with the development, application, and testing of prototype products for specific end uses.

517 Theory and Methods of Culture, Gender and Dress 3 Prereq graduate standing. Exploration of appearance issues, theory, and research from the perspective of social science, feminist theory, postmodern and poststructural discourses.

518 Apparel Merchandising Analysis 3 Analysis of marketing and retailing strategies, trends and technological developments in relation to business and consumer aspects within a global context.

519 Research Methods 3 Prereq graduate standing; AMT 508; graduate course in statistics or permission of instructor. Analysis and understanding of research methods, exploration of thesis topic as applicable to the fields of apparel, merchandising, design and textiles.

520 Aesthetic Analysis of Fashion Design 3 Prereq graduate standing. In-depth analysis of apparel fashion design provided through exploration of aesthetic and human perception theories within a socio-historic context.

596 Advanced Instructional Practicum 3 Prereq Univ 390 or c/. Information and direction for graduate student teaching assistants seeking professional development in classroom teaching. S, F grading.

598 Topics in Apparel and Textiles V 1-3 Current topics in apparel and textile theory and research. May be repeated for credit; cumulative maximum 8 hours.
School of Architecture and Construction Management

www.arch.wsu.edu/
Carpenter Hall
509-335-5539


Architecture

The School of Architecture and Construction Management offers courses of study leading to two baccalaureate degrees, the Bachelor of Science in Construction Management and Bachelor of Science in Architectural Studies.

We expect that our architecture and construction management graduating students will be able to: 1) understand the role of architecture and construction management within current cultural and global conditions, 2) understand the role of architecture and construction management in the enhancement and preservation of natural resources, 3) understand the role of history and its transformations over time, 4) develop a desire and passion for life-long learning, and 5) develop intellectual and analytical skills that will be the foundation for future leaders.

The School offers a professional Master of Architecture degree. This degree is the professional degree accredited by the National Architectural Accrediting Board (NAAB) which allows students to take state exams and become licensed architects. Students must successfully complete a four-year undergraduate degree in architecture or a previous five-year Bachelor of Architecture degree in order to be eligible for the Master of Architecture. Please consult the WSU Graduate Catalog for specific information regarding this degree as well as admission requirements and course descriptions.

The School of Architecture and Construction Management also offers a post-professional course of study leading to a Master of Science in Architecture. This degree is available at the Spokane campus. The four-year, pre-professional degree at WSU is not accredited by NAAB. This degree is useful to those aspiring to pursue the field of architecture, as preparation for either continued education in a professional degree program or for employment opportunities in fields related to architecture.

The architecture curriculum is planned so that foreign study and other off-campus programs can be incorporated in the fourth year of study as well as during the summer. Options include a semester overseas during the spring semester as well as a year of study at the WSU Spokane campus. Foreign studies options include WSU sponsored programs, as well as programs offered by other institutions. Each year one section of fourth-year students as well as one-third of the Master of Architecture students study at the Spokane campus. The Spokane campus offers the opportunity to pursue interdisciplinary work as well as service learning projects in an urban environment. Students in Spokane study interdisciplinary issues with students majoring in construction management, interior design, and landscape architecture. Foreign studies options are available to both Pullman and Spokane students.

Construction Management

The construction manager is expected to understand a wide variety of structures that make up the built environment. This awareness includes properties of materials and construction systems, applications and how they are utilized in conjunction with managing the constructions process. Students in this program are encouraged to develop an inquisitive and inventive mind in order to understand new construction methods and management techniques. It is also important that the graduate in construction management be knowledgeable in the field of business. Courses offered in a variety of departments are required to assure this breadth of understanding. Construction management students spend their fourth year of study in Spokane at the WSU urban campus. The Bachelor of Science in Construction Management degree program is accredited by the American Council for Construction Education.

The School of Architecture and Construction Management is a member of the Association of Collegiate Schools of Architecture and the Associated Schools of Construction. Student chapters of the American Institute of Architects and the Associated General Contractors provide link with their professional counterparts.

Once certified in the major, students must maintain an overall gpa of 2.5 or be dismissed from the program. During the last semester students are required to take the CPC (Constructors Professional Certification) exam. The fee for this exam is $100.

ARCHITECTURE (PRE-PROFESSIONAL PROGRAM)

General Requirements—BS in Architectural Studies

1. Due to limitations of space and faculty, enrollment in second-year courses and certification as a master in architecture can be granted to only the most qualified students. Prospective applicants for these programs are responsible for familiarizing themselves with the school's requirements and procedures.

2. Students who wish to transfer from another institution may find it possible to take some of the first year of coursework at these institutions. Please consult the WSU Transfer Guide and contact the School of Architecture and Construction Management for information regarding transfer requirements.

3. Transfer students and former WSU students must submit an application for admission to the University, a supplemental application, and current academic records to the School by the dates listed in this catalog.

4. Students transferring from another institution into the second year of architecture must submit a portfolio in order for the School to evaluate their potential for success in the program. Contact the School for portfolio requirements.

5. A student may not enroll in 300- or 400-level Arch courses without being certified in architecture.

6. A student may not take courses required by the School on a pass, fail basis.

7. Third-year, fourth-year, and graduate students will be required to participate in one off-campus study tour each year.

8. Beginning fall 2006, the school will require second year students in architecture and construction management to purchase laptop computers. Please contact the school for specific requirements.

Students who enter WSU and have an interest in architecture should contact the academic coordinator for the School for specific advising.

First Year

First Term Hours

Arch 101 3
Arts & Humanities [H,G] (GER) 3
Communication Proficiency [C,W] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Math 107, if necessary, or Electives 3

Second Term Hours

Arch 103 3
Arch 202 3
F A GER Elective [H,G]1 3
GenEd 110 [A] or 111 [A] (GER) 3
Math 171 [N] or 206 [N] (GER)2 3 or 4

1 3 hours of Fine Arts Electives are required. Fine Arts GERs will fulfill this requirement.

2 Students who are not adequately prepared for Math 171 or 206 should take Math 107 as needed during the fall semester of their first year. All freshmen must take the math placement exam.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.
The Bachelor of Science in Architectural Studies is a program primarily for those who want a foundation in the study of architecture. This degree was designed for students who want to work in an architecturally related discipline such as planning, technology, project and community development, or within government agencies. This degree may also be used as a preparation for professional, accredited graduate education. Students who pursue this option at WSU must complete all University requirements in addition to School requirements listed below.

Pre-Architecture
Students who enter WSU and have an interest in architecture will be assigned an advisor in the School of Architecture and Construction Management.

Certified Program
The School of Architecture and Construction Management accepts 50-55 students into the second year. WSU students who wish to enroll in the second year must submit an application to the School of Architecture and Construction Management during the previous spring semester. To be considered, a student must have completed at least 26 semester credit hours of architectural program requirements, including the following courses, or their equivalents from other institutions: Arch 101, 103, 202, Engl 101, GenEd 110 or 111; Math 171 or 206 or Phys 101 or 201. A grade of C or better must be achieved in Arch 101 and 103. Selection is based on the student's GPA in the 26-semester credit hours of required course work. If students do not complete Arch 101, 103 and 202 at WSU, they will be required to submit visual evidence of their architectural graphic and design work for review by the Admissions Committee. Most of the students will be selected at the end of the WSU spring semester but some positions will be held open until summer for transfer students.

Transfer Students
Students who wish to transfer into the second year must demonstrate equivalent course work from another institution. Transfer students must make application to Washington State University, the School of Architecture and Construction Management, and submit a portfolio of design work (see schedule below). Transfer students will be evaluated based upon grades from coursework that is equivalent to first year requirements at WSU. Portfolios will be judged relative to content that is equated to Architecture 101 and 103.

Application/Portfolio/Notification

Deadlines:

May 1 All second-year applications due.
May 1 Portfolios due from applicants who did not complete Arch 101, 103, 201, 202, 203 at WSU.
June 1 Screening complete: Applicants will be classified as accepted or denied. Applicants will be notified by mail.

WSU Spokane

The School sends 15 fourth-year and 1/3 of the graduate students to the WSU Spokane urban campus. Students are given the option of selecting either Pullman or Spokane for their fourth year of studies when they apply for certification. In the event that there are not enough requests to fill positions at either location, a selection process will be implemented to fill remaining positions. Second year acceptance letters will notify students as to whether they will spend their fourth year in Pullman or Spokane. Students accepting admission to the second year also accept the conditions of their place of study during the fourth year. Selection of graduate students to either Pullman or Spokane will be made at the time of acceptance to the Graduate School.

NOTE:
Students offered positions in the second-year courses must promptly notify the School of their acceptance of the position or the next alternate will be offered the position.

Students that are admitted must be registered for the fall semester and attend the first day of classes or lose their position.

Second Year

First Term
Arc 201 3
Arch 220 3
Arch 330 3
Intercultural [I,G,K] (GER) 3
Phys 101 [P] or 201 [P] (GER) 4
Second Term
Arch 203 3
Arch 209 1
Arch 324 [M] 2
Physical Sciences [P] (GER)\(^1\) 3 or 4
Social Sciences [S,K] (GER) 3
Third Year

First Term
Arch 301 5
Arch 309 2
Arch 351 3
Arch 353 1
Arch 432 3
Complete Writing Portfolio
Second Term
Arch 303 5
Arch 352 3
Arch 354 1
Arch 433 3
Biological Sciences [B] (GER) 3 or 4
Fourth Year

First Term
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Arch 401 5
Arch 409 2
Arch 451 3
Arch 472 3
Second Term
Arch 403 5
Arch Emphasis Electives\(^2\) 8
Tier III Course [T] (GER) 3

\(^1\) At least 3 hours of Physical Science Electives from the school’s approved list are required for graduation.

\(^2\) At least 8 hours of Architectural Emphasis Electives from the school’s approved list are required for graduation.

CONSTRUCTION MANAGEMENT (PRE-PROFESSIONAL PROGRAM)

Construction management is a four-year program structured into one year of preconstruction management and three years of construction education. Construction management students are required to spend their fourth year at the WSU urban campus in Spokane.

The degree of Bachelor of Science in Construction Management is for those students who wish to work in the profession of construction management or in a management capacity in other facets of the construction industry.

Upon completion of the preconstruction management program requirements, or their equivalent for transfer students, application must be made for certification into the Construction Management program at the end of the first year.

Beginning fall 2006, the school will require second-year students in architecture and construction management to purchase laptop computers. Please contact the school for details and specifications.

Students in the third year of the Construction Management program will be required to participate in one off-campus study tour.

Certification Requirements:
The School of Architecture and Construction Management has separate admissions and certification policies and procedures for its different degree programs. Admission to the Construction Management program will be considered for those who have qualified for admission to WSU and fulfill the requirements outlined below.

The undergraduate Construction Management program has a one-step screening process leading to certification. The screening process takes place between the first and second year. Qualified students will be certified at this time and allowed to take upper-level coursework as well as construction management courses. This limitation is imposed because of limited space, equipment, and faculty resources. Students may transfer to the school during the two-year process or apply directly for second-year certification.

Application Requirements and Deadlines:
All second-year applications are due by May 1. Grade records for transfer students for the semester or quarter must be available to the construction management coordinator before June.

The construction management coordinator reviews all applications and makes recommendation to the School of Architecture’s Admissions and Academic Affairs committee regarding applicants. Selection will be made on or about June 15; all applicants will be notified of their status by letter mailed from the school.
Course and GPA Requirements for Screening:

Because the school receives more applications from qualified students than can be accommodated, screening for entry into the second year is based on the applicant fulfilling the minimum requirements listed and the applicant’s overall GPA. To be considered for admission, an applicant must:

1. Qualify for admission into Washington State University.
2. Complete the first year as listed herein under preconstruction management.
3. Earn a grade of C or better in Arch 101, Cst M 102, GenEd 110 [A] (GER), Geol 101, Math 171, and Phys 101 or 201.
4. Complete and submit an application to the Construction Management program by May 1.
5. Maintain an overall minimum GPA of 2.5.

First Year

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CONSTRUCTION MANAGEMENT DEGREE PROGRAM (2ND THROUGH 4TH YEARS)

First Year

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Second Year

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Third Year

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<td>Arch 352</td>
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Fourth Year

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Minors

Architectural Studies

The minor in architectural studies requires a minimum of 18 hours of which at least half must be upper-division. To be eligible to apply for the minor a student must have Arch 101 and minimum GPA of 2.50. The minor is limited to 10 students per year. The required courses are Arch 103, 209, 309, 201, or 324, and 6 hours of upper-division architectural emphasis coursework.

Construction Management

The minor in construction management requires a minimum of 17 hours of which at least half must be upper-division. To be eligible to apply for the minor a student must have Arch 101 and minimum GPA of 2.50. The minor is limited to 10 students per year. The required courses are Cst M 102, 252, 360, 370, and 6 hours of business or construction emphasis electives. One business elective may be 200-level. Construction emphasis electives must be upper-division.

Description of Courses

Architectural Courses

Arch

101 Graphics Communication 3 (1-6) Drawing to perceive three-dimensional space; freehand (architectural) drawing; drafting, isometric and orthographic drawing; perspective, shades and shadows, lettering, and rendering techniques.

103 Visual Design 3 (0-6) Prereq Arch 101. Two- and three-dimensional design and spatial studies; abstract studies in form, color and texture; introduction to architectural design processes.

201 Innovation in Design 2 Same as M E 120.

203 Architectural Design I 3 (0-6) Prereq Arch 103, c// in Arch 207. Introduction to architectural design focusing on cultural/symbolic issues.

202 [H] The Built Environment 3 Design and planning of the built environment: products, interiors, structures, landscapes, cities, regions, earth; human-environmental interactions, sustainability, and quality.

203 Architectural Design II 3 (0-6) Prereq Arch 201, c// in Arch 209. Introduction to architectural design as influenced by building technology, building systems and craft.

209 Design Theory I 1 Prereq c// in Arch 203. Design theory relating to building technology, systems and crafts which influence design decisions.

220 [H] Architectural History I 3 Historic development of world architecture from prehistory to late medieval; social, technical and scientific influences.

221 [H] Architectural History II 3 Development of American architecture; native American architecture, colonial styles to contemporary architecture; effects of European styles upon America.

301 Architectural Design III 5 (0-10) Prereq certified Arch major. Introduction of architectural design focusing on environmental and social issues.

303 Architectural Design IV 5 (0-10) Prereq Arch 301; c// in Arch 309. Continuation of study of architectural design/form as influenced by cultural, spiritual and symbolic issues.

309 Design Theory II 3 Prereq Arch 301 and c// in Arch 303. Design theory relating to cultural/symbolic issues which influence design decisions.

324 [M] Renaissance to Baroque Architecture 2 Western architecture from the Renaissance to Baroque to pioneers of modern architecture.

330 Materials and Construction I 3 Prereq second year architecture student. Wood, steel, concrete, and masonry systems materials; introduction of materials related to building systems; frame bearing wall and roof systems.

332 Materials and Construction II 3 Prereq major in Arch or Cst M. Theory and application of various construction systems and material applications explored through drawing.

341 Computers in Architecture 2 (1-3) Prereq certified major in Arch or Cst M. Introduction to computers, terminology, and software applications, applicable to the field of architecture.
351 Architectural Structures I 3 Prereq major in Arch or Cst M. Introduction to statics and mechanics; analysis and design of statically determinate architectural structures using timber, steel, and reinforced concrete systems.

352 Architectural Structures II 3 Prereq Arch 351. Continuation of Arch 351.

353 Structures Studio I 1 (0-2) Prereq Arch 351 or c//. Design principles of architectural structures systems; available systems for spanning and enclosing architectural space.

354 Structures Studio II 1 (0-2) Prereq Arch 352 or c//. Continuation of Arch 353.

390 Topics—Study Abroad 3 Special topics in architecture taught in NCSA study abroad programs.

401 Architectural Design V 5 (0-10) Prereq Arch 303. Advanced architectural design focusing on technology, systems and crafts of buildings.

403 Architectural Design VI 5 (0-10) Prereq Arch 401; c// in Arch 409. Advanced study of architectural design/form as influenced by social and environmental issues applied to large-scale developments.

409 [M] Design Theory VI 2 Prereq Arch 401, c// in Arch 403. Advanced design theory relating to social and environmental issues which influence housing design for the urban environment.

411 Architectural Design VII 6 (0-12) Prereq Arch 403. Comprehensive building design incorporating programming, space planning, interiors, site planning and landscaping.

413 Architectural Design Thesis 6 (0-12) Prereq Arch 411. In-depth study of architectural design problems; thesis relating to architectural project selected by student and approved by faculty.

425 [M] Architectural Theory I 2 Architectural criticism and theory as viewed from contemporary and historical precedents.

426 Architectural Theory II 2 Continuation and expansion of Arch 425 including applications to design concepts and methodologies.

427 Site and Landscape Design 3 (1-4) Prereq Arch 203. Exploration of issues and development of skills relative to site and landscape design.

428 [T] Architecture and Culture in the Islamic World 3 Prereq completion of one Tier I and three Tier II courses. A thematic course exploring the relationship between architecture and culture in the context of Islamic civilization.

432 Environmental Control of Buildings I 3 Mechanical systems for buildings; building heating, ventilating, and air conditioning systems, heat flow concepts.

433 Environmental Control of Buildings II 3 Prereq Arch 432. Water supply, drainage, electrical and lighting systems for buildings.

436 Contemporary Furniture Design 3 (1-4) Prereq Arch 103. Investigation of issues related to the design and fabrication of furniture; students design and fabricate projects in the school shop.

438 Energy, Design and Computers 2 (1-2) or 3 (1-4) Design theory and methods of energy and resource conservation in architecture through the use of daylight modeling and computers.


446 Architectural Animation 3 (1-4) Prereq certified Arch major, Cpt S 121 or 205. Introduction to computer animation production, building simulation and related CAD modeling techniques.

451 Computer-aided Design I 3 (2-2) Prereq basic CAD course. Computer-aided design related to 3D modeling and construction documents.

452 Computer-aided Design II 2 (1-2) Prereq basic CAD course. Continuation of Arch 451.

456 Field Sketching/Journal Keeping 3 (2-2) Prereq junior standing. Field-sketching/journal-keeping strategies to facilitate investigation and comprehension of the built environment.

463 Architectural Structures III 3 Prereq Arch 351, 352. Wind and seismic loads on architectural structures; high-rise systems; reinforced concrete and masonry structures. Credit not granted for both Arch 463 and 563.

464 Architectural Structures IV 3 Prereq Arch 352. Deflection theory; classical and computer analysis for statically indeterminate architectural structure systems. Credit not granted for both Arch 464 and 564.

472 Codes and Acoustics 2 Prereq third year architecture student. Building codes and specifications; sound theory, control, and acoustic systems applied to buildings.

480 Architectural Internship V 1-4 Prereq major in Arch or Cst M. Placement in an approved industrial, professional, or governmental situation for specialized or general experience. May be repeated for credit; cumulative maximum 4 hours.

490 Seminar in Architectural Design V 1-4 Prereq major in Arch. Advanced study in architectural design. Cooperative course taught by WSU, open to UI students (Arch 490). May be repeated for credit; cumulative maximum 4 hours.

491 Seminar in Architectural Communications V 1-4 Prereq major in Arch. Advanced study in graphic communication. May be repeated for credit; cumulative maximum 4 hours.

492 Seminar in Architectural History V 1-4 Prereq major in Arch. Advanced study in architectural history. May be repeated for credit; cumulative maximum 4 hours.

493 Seminar in Environmental Control V 1-4 Prereq major in Arch or Cst M. Advanced study in environmental control of buildings. May be repeated for credit; cumulative maximum 4 hours.

494 Seminar in Urban and Regional Planning V 1-4 Advanced study in urban and regional planning. May be repeated for credit; cumulative maximum 4 hours.

495 Seminar in Construction Management V 1-4 Advanced study in construction practice management. May be repeated for credit; cumulative maximum 4 hours.

496 Seminar in Computer Applications V 1-4 Prereq Cpt S 151, 153, 154, or 203. Architectural and construction applications of computer graphics, management, computer-aided design. May be repeated for credit; cumulative maximum 4 hours.

497 Seminar in Professional Practice V 1-4 Prereq senior in Arch. Advanced study in architectural practice management. May be repeated for credit; cumulative maximum 4 hours.

498 Seminar in Architectural Structures V 1-4 Prereq Arch 301, 351 or c//. Advanced study in architectural structures systems. May be repeated for credit; cumulative maximum 4 hours.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

511 Design VIII/Graduate Design Project 6 (0-12) Prereq Arch 403. Studio course divided between urban design and preliminary design on graduate project.

513 Graduate Design Project 6 (0-12) Prereq Arch 511, 515. Final graduate design studio focusing on individualized topics.

515 Research Methods and Programming 3 Prereq Arch 403. Exploration of traditional research methods and investigations for architects.

520 Directed Topics in Architecture V 1-3 Topics related to areas of emphasis in the program and student specialization. May be repeated for credit; cumulative maximum 6 hours.

525 History and Theory 3 Prereq Arch 409. History and theory of 20th century architecture focusing on cultural and philosophical principles related to design.

527 Site and Landscape Design 3 Prereq Arch 403. Exploration of issues of site context analysis, topography, planning, and landscape design.

530 Philosophies and Theories of the Built Environment 3 Prereq graduate standing in Arch/I D/L A. Focus on systematic thought which may describe behavior of the built environment.

531 Advanced Tectonics 3 Prereq Arch 330, 403. Tectonic theory of concrete and metal construction with focus on skin design and technology as formative elements in architecture.
534 Theory Case Studies 3 Prereq Arch/ID/LA 530 and/or graduate standing. In-depth exposure to the literature of selected theory typologies covered in Arch 530; Necessity Empirical Observation, History, Comparison, etc.

535 Design/Theory Case Studies 3 Prereq graduate standing, Arch/ID/LA 530. In depth analysis of social-cultural-technological factors affecting designs of the built environment.

540 Research Methods 3 Prereq graduate standing. Research methods, from quantitative to technical to philosophical, directed toward qualitative research.

542 Issues in Architecture 3 Prereq graduate standing; Arch 409, 525. Examination of issues in architecture related to society, culture, environment, politics, and philosophy.

546 Computer Animation 3 Prereq Arch 446 or Cpt S 446; by interview only. Advanced computer animation techniques; advanced specialization in building/design simulation, dynamic modeling and visualization, engineering animation. May be repeated for credit; cumulative maximum 9 hours.

550 Design Applications 2 Prereq Arch/I D/L A 530. Emphasizes the cognitive and behavioral practices of design; exploration in terms of content and value.

551 Design/Build Firm Management 3 Prereq graduate standing. Introduction to design/build firm management procedures.

552 Design/Build Project Management 3 Prereq graduate standing, Arch 551. Introduction to policies, contracts and joint venture organizational structures related to management of design build projects.

553 Design and Construction Law 3 Prereq graduate standing. Introduction to contract law affecting the design and construction industry.

554 Design/Build Case Studies 3 Prereq graduate standing. Case studies of specific design/build projects from legal, economics, technology, or firm management perspectives.

560 Interdisciplinary Seminar 3 Prereq graduate standing. Explores the chronological development of selected place-types in the U.S., Western Europe, and Asia.

561 Interdisciplinary Seminar II 3 Prereq Arch/I D/L A 560. Builds upon knowledge gained from Arch/I D/L A 560; expected to conduct an in-depth investigation of a specific aspect of dwelling.

563 Architectural Structures III 3 Prereq Arch 515 or c/. Graduate-level counterpart of Arch 463; additional requirements. Credit not granted for both Arch 463 and 563.

564 Architectural Structures IV 3 Prereq Arch 511 or c/. Graduate-level counterpart of Arch 464; additional requirements. Credit not granted for both Arch 464 and 564.

570 Advanced Architectural Studio/Laboratory 6 (0-12) In-depth study of design problems relating to cultural, environmental, technological and other issues as related to the student’s area of emphasis.

573 Ethics and Practice 3 Prereq Arch 472. Ethical and professional practice issues related to the business and practice of architecture; investigations into marketing client and business orientation.

577 Theories and Methods of Urban Construction 3 Prereq graduate standing. Morphology, theoretical concepts, planning and spatial structure of cities and analysis of the transformation of the city core in Europe and America.

580 Architecture Internship V 1-4 Prereq graduate student in MS Arch degree program. Placement in an approved industrial, professional, or governmental situation for specialized or general experience. May be repeated for credit.

600 Special Projects or Independent Study Variable credit. S, F grading.


702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Construction Management Courses

Cst M

102 Introduction to Construction and Architecture 2 (1-3) Introduction to the construction industry; reviewing contract documents, methods of project management and current issues pertaining to the industry.

232 Construction Systems 3 (2-2) Prereq major in Cst M or by permission, Arch 101 or M E 103, Arch 330. Theory and application of various construction systems and material applications.

252 Construction Administration and Documentation 3 Prereq major in Cst M, Cst M 102. Study and understanding of administrative procedures found within construction projects and respective documentation.

253 Building Codes and Zoning 3 Fundamental understanding of how to research, interpret, and apply zoning regulations and building code requirements.

360 Planning and Scheduling 3 (2-3) Planning construction processes and utilizing computer applications as they pertain to scheduling computations.


442 [M] Theory of Urban Design and Development 3 Same as Arch 442.


452 Construction Practice Management 3 Business/management practices for a construction firm; building construction project management.

456 Methods Procedures I 4 Basic knowledge of site layout, heavy earth moving equipment, excavation and related safety issues.

457 Methods Procedures II 4 Examination of components in a commercial building form; soils as a design material to finishes.

460 Construction Cost Accounting 3 (2-3) Prereq Cst M 451. Examination of cost accounting utilized for specific project control as well as overall company control.

475 Senior Project 3 Prereq Cst M 4th year student. Senior course designed to integrate and employ learned concepts acquired during the student’s education.

495 Seminar in Construction Management V 1-4 Advanced study in construction practice management. May be repeated for credit; cumulative maximum 4 hours.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

Asia Program

libarts.wsu.edu/asia/
Wilson 310
509-335-3267

Program Director and Associate Professor, N. Kawamura (History, East Asia); Professors, P. Tansuhaj (International Business, South East Asia), M. Tolmacheva (History, Middle East), M. Myers (Philosophy and Religion, South Asia, East Asia), C. S. Ivory (Art History, the Pacific); Associate Professors, Z. Dong (Chinese), R. A. Jussaume (Community and Rural Sociology, Japan), R. Sun (History, East Asia), D. Sonnenfeld (Community and Rural Sociology, Southeast Asia); Assistant Professors, C. Lupke (Chinese), D. Pietz (History, East Asia), P. Thiers (Political Science, East Asia); Instructors, L. Gerber (History, China), R. Staub (History, Middle East), I. Suzuki (Japanese), R. Chan (History, East Asia); Librarian, A. M. Spitzer (South Asia).

The Asia Program is designed to provide a broad, systematic knowledge of Asia through interdisciplinary study and is intended to serve four major objectives:

1. To prepare students intending to teach courses on Asia in public schools,
2. To provide academic background for those planning to pursue graduate work on Asia,
3. To prepare students for business careers dealing with Asia, and
4. To train those interested in governmental and various private career opportunities related to Asia.
The flexibility of the program affords both an area concentration and a departmental specialization. The program offers the degree of Bachelor of Arts in Asian Studies.

Upon completion of the Asia Program curriculum, graduates will be able to: 1) identify, locate, and critically evaluate resources for the study of Asia; 2) understand the commonalities, complexity, and diversity of Asia; 3) understand disciplinary approaches to the study of Asia; 4) identify problems and questions related to Asia and place in appropriate context; 5) understand traditions and transformations of Asian cultures; and 6) have competency in an Asian language equivalent to 2nd year level.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

ASIA DEGREE PROGRAM (120 HOURS)

A minimum of 40 hours of courses on Asia, including 16 hours of an appropriate language and 18 hours at the 300 level or above, are required. 18 of the 40 credits of the Asia major must be earned at WSU.

First Year

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Second Term

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Second Year

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Second Term

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Third Year

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Minors

ASIAN STUDIES

A minor in Asian Studies requires 23 hours, including one year of a single Asian language or 8 hours of Asian study abroad credit. Of the 23 required credits, at least half must be upper division, and at least 9 credit hours must be earned at WSU. Native speakers of an Asian language are exempt from the language requirement for the minor (they instead take 8 additional credit hours of Asian courses).

Description of Courses

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<td>Asia 131</td>
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Fourth Year

First Term

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Second Term

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Final Year

Complete Writing Portfolio

16 hours of college level study of a single Asian language (e.g., CHIN/JAPN 101, 102, 203, 204). Languages not taught at WSU may be studied through distance learning programs, intensive summer courses, etc. For the second year of languages not taught at WSU, students may substitute 8 hours of any Asian study abroad credit. Although native speakers of an Asian language may be exempt from the language requirement and take 16 additional credit hours of Asian courses, they are encouraged to complete a minimum of one year college level study of a different Asian language.

Disciplinary Distribution: 12 hours (3 hours minimum from EACH the following groups): East Asia (Asia 131, 275, or 315); South Asia (Asia 270 or 314); and Middle East (Asia 272, 273, or 306).

Geographic Distribution: 9 hours (3 hours minimum from EACH the following groups): Asian humanities courses (H or G GER); and Asia social science courses (S or K GER).

Additional requirements: A minimum of 18 hours of 300-400-level Asia courses; and 6 hours of Writing in the Major (M GER). Note: Courses may be used to satisfy requirements in more than one of the above categories. Students should consult their advisor to determine when courses are offered. Relevant 300-400-level courses not cross-listed with Asia may be counted toward a major or minor if approved by the Director of the Asia Program.

Study Abroad is very strongly encouraged. Contact your advisor and the Education Abroad Office for more information.

Minors

ASIAN STUDIES

A minor in Asian Studies requires 23 hours, including one year of a single Asian language or 8 hours of Asian study abroad credit. Of the 23 required credits, at least half must be upper division, and at least 9 credit hours must be earned at WSU. Native speakers of an Asian language are exempt from the language requirement for the minor (they instead take 8 additional credit hours of Asian courses).
School of Biological Sciences

www.sci.wsu.edu/sbs
Abelson 312
509-335-3553


The School of Biological Sciences offers training in cellular, organismal, population, and environmental biology, with an emphasis on plants and animals. The school offers bachelor of science programs in biology and zoology, master of science programs in biology, botany, and zoology, and doctoral programs in botany and zoology. The school also offers undergraduate minors in zoology, biology, and ecology.

Facilities

There are modern facilities for study in cell and developmental biology, genetics, plant and animal physiology, anatomy and ultrastructure, functional morphology, ecology, molecular systematics, and behavioral, environmental, and evolutionary biology. The University’s rural location is conducive to field studies. Special facilities include the collections of the Charles R. Conner Museum, the Marion Ownbey Herbarium, the George E. Hudson Biological Preserve of 760 acres, the Electron Microscopy Center, plant growth facilities, and the Eastlick Vivarium for maintaining lab animals.

Cooperation with many other campus units extends research opportunities. Cooperative arrangements with faculty in units such as molecular biosciences, animal sciences, natural resource sciences, and the College of Veterinary Medicine are readily achieved.

Undergraduate Programs

Introductory biological sciences courses provide background in the concepts common to life sciences and an overview of the diversity of animals, plants, and microorganisms. Advanced biological sciences courses probe specific areas in depth.

Undergraduate preparation in either biology or zoology provides a student with a basis for pursuing career opportunities in ecology, laboratory research and technology, human health, animal health and welfare, and a variety of other biological specializations.

Candidates for the Bachelor of Science in Biology and Zoology must fulfill the University and the College of Sciences requirements for graduation as described elsewhere in this catalog. Honors students complete honors requirements in place of general education requirements. The math and science components of those requirements are fulfilled as part of the departmental requirements below. Other University requirements include 120 total credit hours of which 40 must be 300-400-level credits, the writing portfolio, and two writing in the major courses (identified by [M] in the course listings).

College requirements include one year of foreign language if two years were not taken in high school. A “C” minimum grade is required in all coursework in the major. No courses graded pass, fail (except those designated S, F only; i.e., 490, 491, 495, 496, 499) can be applied toward fulfilling departmental requirements or program options.

Biology

Six options are available for the Bachelor of Science degree in Biology: biology education, botany, general biology, ecology/evolutionary biology, entomology, and allied health option. The biology education option is particularly suitable for students who would like to teach biology at the high school level. The botany option is available for students with a special interest in plants and is particularly suitable for those who would like to pursue graduate studies. The general biology option provides very appropriate, broad training in the life sciences, particularly for students seeking to continue in professional or graduate school. The ecology/evolutionary biology program provides the graduate with a broad-based ecological understanding applicable to such fields as environmental and wildlife biology. The entomology option is available for students who wish to focus on insect biology. The allied health option is designed for students who would like to pursue studies in physical therapy, occupational therapy, or physician assistant programs.

We expect that students graduating with a B.S. in biology will have acquired: (1) an understanding of the biology of plants, animals, and microorganisms at all levels of biological organization, from genes to ecosystems; (2) a capacity for and interest in continued learning; (3) the ability to apply critically their knowledge and practical skills to real-life problems, and (4) the ability to communicate effectively with diverse audiences, both orally and in writing.

Zoology

Three options are available for the Bachelor of Science degree in Zoology: general zoology, prevetinary/animal care, and prehealth. Each of these options includes a core curriculum consisting of an array of courses plus 12 hours of additional courses taken in the particular program option. The flexible curriculum leading to a zoology degree meets the needs of students with various interests and goals. The general zoology option provides a broad, solid foundation in zoology. It is aimed especially at students desiring a well-rounded background for further professional studies, such as in graduate or veterinary school. Students aspiring to enter medical, or dental school will find the prehealth sciences option to be particularly appropriate. Washington State University has no certified major or degree specifically designated as pre-medicine or pre-dentistry. The prehealth option is offered by the School of Biological Sciences as a course program designed to provide a solid academic foundation that successfully prepares the student for admission into medical or dental school. The preveterinary/animal care option prepares students for careers involving animal care and maintenance in research institutions, zoos, aquaria, and clinics and application to schools of veterinary medicine.

We expect that students graduating with a B.S. in zoology will have acquired: (1) an understanding of the biology of both invertebrate and vertebrate animals at all levels of biological organization, from genes to ecosystems; (2) a capacity for and interest in continued learning; (3) the ability to apply critically their knowledge and practical skills to real-life problems, and (4) the ability to communicate effectively with diverse audiences, both orally and in writing.

Transfer Students

Science courses taken at other institutions will be evaluated and credits accepted where possible. Inquiries should be directed to the Associate Director of Undergraduate Program.

Graduate Programs

At the graduate level, the school awards masters of science degrees in biology, botany, and zoology, and doctoral degrees in botany and zoology. Faculty interests and research programs are diverse, ranging from cellular and developmental biology, through various aspects of organismal biology to ecology and evolutionary biology. A list of specific faculty interests can be obtained at www.sci.wsu.edu/sbs or by writing to the school.

Preparation for Graduate Study in Botany or Zoology

Students with undergraduate majors in such fields as microbiology, biology, botany, zoology, and plant or animal sciences may be prepared for graduate study in the School of Biological Sciences. Graduate Record Examination scores from the general aptitude section are required.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

ALLIED HEALTH REQUIREMENTS

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<td>First Term</td>
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<td>Biol 106 [B] (GER)</td>
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<td>Biol 107 [B] (GER)</td>
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<td>Phys 101 [P] or 201 [P] (GER)</td>
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**BIOLOGY—EDUCATION OPTION (137 HOURS)** 

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<th>Year</th>
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<th>Hours</th>
<th>Notes</th>
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<td>Chem 105 [P] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Second Term</td>
<td>Hours</td>
<td>Biol 107 [B] (GER)</td>
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<td>Chem 106 [P] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<td>Math 140 [N] or 171 [N] (GER)</td>
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<tr>
<td>Third Year</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Biol 345 or 346</td>
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<td>Communication Proficiency [C,W] (GER)</td>
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<td>Phys 101 [P] or 201 [P] (GER)</td>
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<td>Second Term</td>
<td>Hours</td>
<td>Biol 301</td>
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<td></td>
<td>MBioS 303</td>
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<td>Phys 102 [P] or 202 [P] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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<td>Third Year</td>
<td>First Term</td>
<td>Arts &amp; Humanities [H,G] or</td>
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<td>Biol 372 [M]</td>
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<td>Fourth Year</td>
<td>First Term</td>
<td>Biol 372 [M]</td>
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<td>MBioS 303 or MBios 401 and 452</td>
<td>4 or 6</td>
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1. 24 hours from a minimum of four of the following six areas: physiology and biochemistry, ecology, evolution, animal, plant, conservation/management. See advisor.

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**School of Biological Sciences**
### School of Biological Sciences

**Biology—Entomology Option**

**First Year**
- **First Term**
  - Biol 106 [B] (GER) 4
  - Chem 105 [P] (GER) 4
  - Engl 101 [W], 201 [W], or 301 [W] (GER) 3
  - Math 140 [N] or 171 [N] (GER) 3
- **Second Term**
  - Biol 107 [B] (GER) 4
  - Chem 106 [P] (GER) 4
  - GenEd 111 [A] (GER) 3
  - Math 140 [N] or 171 [N] (GER) 4

**Second Year**
- **First Term**
  - Biol 301 4
  - Biol 321, 322, or 324 4
  - Program Option Course 6
  - Social Sciences [S,K] (GER) 3
- **Second Term**
  - Biol 372 [M] 4
  - Program Option Course 3 or 4

**Third Year**
- **First Term**
  - Biol 106 [B] (GER) 4
  - Biol 107 [B] (GER) 4
  - Biol 301 4
- **Second Term**
  - Biol 350, 353, or MBioS 303; or Biol 352 and 452; or MBioS 401 and 452 3 or 4
  - Biol 405 3
  - Program Option Courses or Electives 6

**Fourth Year**
- **First Term**
  - Biol 352 or MBioS 401 3
  - Biology Electives 5
  - Biol 405 3
  - Electives 5 or 6
- **Second Term**
  - Biol 107 [B] (GER) 4
  - Biol 106 [B] (GER) 4
  - Biol 105 [P] (GER) 4
  - Biol 101 [W] (GER) 3
  - Math 140 [N], 171 [N], or 202 [N] (GER) 4

**Zoology—Pre-Health Option**

**First Year**
- **First Term**
  - Biol 106 [B] (GER) 4
  - Biol 105 [P] (GER) 4
  - Biol 101 [W] (GER) 3
  - GenEd 111 [A] (GER) 3
- **Second Term**
  - Biol 301 4
  - Biol 312, 322, or 324 4
  - Biol 372 [M] 4

**Third Year**
- **First Term**
  - Biol 352 or MBioS 401 3
  - Biology Electives 5
  - Biol 405 3
  - Electives 5 or 6
- **Second Term**
  - Biol 107 [B] (GER) 4
  - Biol 106 [B] (GER) 4
  - Biol 105 [P] (GER) 4
  - Biol 101 [W] (GER) 3
  - Math 140 [N], 171 [N], or 202 [N] (GER) 4

**Zoology—General Option**

**First Year**
- **First Term**
  - Biol 106 [B] (GER) 4
  - Biol 105 [P] (GER) 4
  - Biol 101 [W] (GER) 3
  - GenEd 111 [A] (GER) 3
- **Second Term**
  - Biol 107 [B] (GER) 4
  - Biol 106 [P] (GER) 4
  - GenEd 111 [A] (GER) 3
  - Math 140 [N] or 171 [N] (GER) 4

**Second Year**
- **First Term**
  - Biol 301 4
  - Biol 312, 322, or 324 4
  - Biol 372 [M] 4
  - Program Option Course 3 or 4

**Third Year**
- **First Term**
  - Biol 352 or MBioS 401 3
  - Biology Electives 5
  - Biol 405 3
  - Electives 5 or 6
- **Second Term**
  - Biol 107 [B] (GER) 4
  - Biol 106 [B] (GER) 4
  - Biol 105 [P] (GER) 4
  - Biol 101 [W] (GER) 3
  - Math 140 [N], 171 [N], or 202 [N] (GER) 4

**Fourth Year**
- **First Term**
  - Biol 352 or MBioS 401 3
  - Biology Electives 5
  - Biol 405 3
  - Electives 5 or 6
- **Second Term**
  - Biol 107 [B] (GER) 4
  - Biol 106 [B] (GER) 4
  - Biol 105 [P] (GER) 4
  - Biol 101 [W] (GER) 3
  - Math 140 [N], 171 [N], or 202 [N] (GER) 4
ZOOOLOGY—PRE-VETERINARY/ANIMAL CARE OPTION

A minimum of six years is required to obtain the DVM degree. Two or more years of preprofessional (pre-veterinary) training must be taken followed by four years of professional study in veterinary medicine. The following curriculum will allow students to finish preprofessional academic requirements in two years. This schedule is rigorous. A student who cannot maintain a high GPA following this schedule should choose to finish the preprofessional requirements in three years.

All preprofessional academic requirements must be completed by the end of the academic year during which the application is under consideration. Students wishing to apply to Veterinary School during the sophomore year must complete the Graduate Record Exam (GRE) General Test and have sufficient veterinary medical exposure and/or animal experience. Applications are due by October of the sophomore year if prerequisites will be met by the end of the sophomore year.

First Year

First Term

Hours

Biol 106 [B] (GER)\(^1\)
3
Chem 105 [P] (GER)
4
GenEd 110 [A] (GER)
3
Math 140 [N] or 171 [N] (GER)\(^1\)
4

Second Term

Hours

Biol 107 [B] (GER)\(^1\)
4
Chem 105 [P] (GER)
4
GenEd 111 [A] (GER)
3

Second Year

First Term

Hours

Biol 305, 332, 401 and 452 or Biol 352 and 452
4 or 5
Biol 452 [M]
2
Chem 346
3
Phys 102 [P] (GER)
4

Third Year

First Term

Hours

Biol 322, 418, or MBioS 302
4
Biol 405
3
Communication Proficiency [C,W] (GER)
3
Electives
4

Second Term

Hours

Biol 305
4
Intercultural [I,G,K] (GER)
3
Electives
3

Fourth Year

First Term

Hours

Biol 315, 321, or 324
4
MBioS 303
4
Electives
7

Second Term

Hours

Biol 315, 321, or 324
4
Stat 212, 412, or Psych 311
3 or 4
Tier III Course [T] (GER)
3
Electives
3

Chem 106 [P] (GER)\(^1\)
4
Communication Proficiency [C,W] (GER)
3
Engl 101 [W] (GER)
3
GenEd 111 [A] (GER)
3

Zoology

Requires a minimum of 20 hours, including Biol 106, 107, 321, 322, or 324; 8 additional hours of biological sciences courses focused on animals, 12 of which must be upper division. No more than 2 hours of Biol 496, 497, 498, or 499 may be included in the 20 hours.

Description of Courses

Biological Science Courses

Biol

101 [B] Direction in Biological Sciences

Understanding biology as a science and its effect on issues within society. Credit not granted for more than one of Biol 101, 102, 107.

102 [B] General Biology

(3-3) Not open to students who have taken a college-level course in general biology or botany. Nature of living things, methods, and function of diverse organisms. Credit not granted for Biol 102 and 101, 107 or 105.

105 [B] Biological Science Laboratory

(0-3) Prereq college-level nonlaboratory general biology course. Elements of structure and function of organisms. For non-majors in the biological sciences. Credit not granted for more than one of Biol 102, 107, 105.

106 [B] Introduction Biology: Organismal Biology

(3-3) First semester of a one-year sequence recommended for pre-professional students. Biology of organisms: plants, animals, ecology and evolution.

107 [B] Introductory Biology: Cell Biology and Genetics

(3-3) Prereq one semester of chemistry or any. First semester of a one-year sequence for science majors. Continuation of Biol 106. Cellular and molecular biology including genetics.

120 [B] Introduction to Botany

(3-3) A survey of the plant kingdom; structure and function of vascular plants.

135 [B] Animal Natural History

Identification, life history, habitat relations, ecology, behavior, and conservation of animals commonly found in the Pacific Northwest.

150 [Q] Evolution

3 Basic principles and implications of Darwinian evolution.

201 [B] Contemporary Biology

1 Prereq Biol 101, 107, 120, or MBioS 101. Biological information that provides a framework for understanding life processes; impact of biological information on human affairs.

251 Introductory Human Physiology

(3-3) Rec one semester chemistry. Basic physiological processes in humans from the cellular to the organismal level.

298 [B] Biological Science Honors

(3-3) Open only to students in the Honors College.

301 General Genetics

(4-3) Prereq Biol 107; two semesters Chem. Same as MBioS 301. Credit not normally granted for Biol/MBioS 301 and Biol 408.

308 [B] Marine Biology 3 Prereq college-level biology or chemistry. Introduction to the marine environment including oceanic, near-shore and estuarine communities of organisms and their roles and interactions.

315 Gross and Microanatomy 4 (3-3) Prereq one semester biology. Gross and microscopic anatomy of the human body.

318 Introductory Plant Physiology 3 Prereq Biol 106 or 120; organic chemistry or c/w. Introductory plant physiology; lecture portion of Biol 320.

319 Introductory Plant Physiology Laboratory 1 (3-3) Prereq Biol 106 or 120; organic chemistry or c/w. Introductory plant physiology laboratory; lab portion of Biol 320.

320 Introductory Plant Physiology 4 (3-3) Prereq Biol 106 or 120; org chem or c/w. Water relations, mineral nutrition, photosynthesis, respiration, and growth of plants.


324 Comparative Vertebrate Anatomy 4 (2-6) Prereq Biol 106. Evolution of vertebrates and their organ systems; correlation of structural modification with function. Cooperative course taught by WSU, open to UI students (Biol 324).

325 Plant Biotechnology 3 Prereq Biol 120, 301. Introduction to the genetic engineering of plants.

330 [B] Principles of Conservation 3 Prereq Biol 101, 102, 106 or 107, or MBioS 101. Conservation of major natural resources through a biological approach; philosophical, economic, and political aspects of important conservation issues.

332 Systematic Botany 4 (2-6) Prereq Biol 102, 106 or c/w, or 120. Identification and classification of vascular plants with emphasis on the local flora.

350 Comparative Physiology 4 (3-3) Prereq Biol 106. Analysis of systems and integrative physiology with an emphasis on evolutionary adaptation among mammalian and non-mammalian vertebrates.

352 Cell Physiology 3 Prereq Biol 107, organic chemistry, certified major. Function and control at the cell-tissue level.

353 Mammalian Physiology 4 (3-3) Prereq Biol 106; Rec c/w in organic chemistry. Function and control at the organ-organismic level with emphasis on mammals, including humans.

372 [M] General Ecology 4 (3-3) Prereq Biol 106, one semester chemistry. Relationship of organisms with physical and biotic components of their environment at the population, community, and ecosystem level.

390 [B] Stream Monitoring 1 (0-3) Prereq Biol 101 or 106, Chem 101 or 105, or equivalent. Principles and methods of water quality monitoring, including habitat assessment, water chemistry, and biological assessment. Field work and independent research required.

393 [M] Seminar 2 Literature investigation, oral presentation and written reports of selected topics in zoology.

394 Medicine as a Career 1 Prereq junior standing, by interview only. Current issues in medicine; ethical, financial, and personal aspects of medical practice.

401 [T] Plants and People 3 Prereq Biol 102, 106, or 120; completion of one Tier I and three Tier II courses. Relationships between plants and people, especially cultural and economic applications of plants.

405 Principles of Organic Evolution 3 (2-3) Prereq Biol 301. The evolutionary processes that influence adaptation, population differentiation, and speciation in organisms. Credit not granted for both Biol 405 and 505.

406 Microtechnique 4 (2-6) Prereq by interview only. Same as E Mic 406. Credit not granted for both Biol 406 and 506.

407 [T] Biology of Women 3 Prereq Biol 102, 106, or 298; junior standing; completion of one Tier I and two Tier II courses. Biological basis of body function, role of medical technology in health care of women, impact of social and cultural perspectives of female role.


409 Plant Anatomy 4 (2-6) Prereq Biol 120. Developmental anatomy and morphology of vascular plants; economic forms. Credit not granted for both Biol 409 and 509.

410 Marine Ecology 3 Prereq 6 hours of physical and/or biological science. Marine environments: their ecology, role in human development, and hazards to their well being.

411 [M] Limnology and Aquatic Ecosystem Management 3 (2-3) Prereq Biol 102 or 120; Chem 101. Same as NATRS 411.


413 Fish Ecology 3 Prereq Biol 106, 107. Examination of physical, chemical, and biological factors that affect fish populations and communities, with emphasis on environmental stressors. Cooperative course taught by UI (Fish 314), open to WSU students.

416 Principles of Fisheries Management 4 (3-3) Same as NATRS 416.

417 Stress Physiology of Plants 3 Rec Biol 320. Temperature, light, salinity, water effects on physiological processes; mechanistic understanding of stress. Credit not granted for both Biol 417 and 517.


421 Vertebrate Histology and Organology 4 (2-6) Prereq Biol 106 or 251. Microscopic anatomy of tissues and major mammalian organs. Cooperative course taught by UI (Zool 427), open to WSU students.


429 General Plant Pathology 3 Same as PL P 429.

430 Methods of Teaching Science 3 (2-3) Prereq admission to secondary teacher prep; 36 hours science. Methods, philosophy, and structure of science; application in teaching middle and secondary school science courses. Taken during last semester prior to student teaching.

431 Principles of Systematic Biology 3 Prereq Biol 322 or equivalent animal course. Systematic theory; history and current views; approaches to phylogenetic analysis and classification. Credit not granted for both Biol 431 and 531.


436 Wildlife Nutrition 3 (2-3) Same as NATRS 431. Credit not granted for both Biol 436 and 536.


451 Comparative Vertebrate Reproduction 3 Prereq Biol 106. Physiology of major events in reproductive cycles of vertebrates, emphasizing mammals. Credit not granted for both Biol 451 and 551. Cooperative course taught by UI (Biol 450), open to WSU students.
452 [M] Cell Physiology Laboratory 2 (1-3) 
Prereq cell biology or physiology. Experiments and techniques in cell biology and physiology.

460 Plant Ecophysiology 3 Prereq Biol 320, 372. Relationships of biotic and abiotic environment to plant distribution and evolution through study of physiological processes. Credit not granted for both Biol 460 and 560.

461 Environmental Physiology 3 Prereq Biol 350 or 353. Individual and evolutionary adaptations to changing environments with emphasis on recent literature. Credit not granted for both Biol 461 and 561.

462 Community Ecology 3 Prereq Biol 106. Assembly, essential properties, levels of interactions, succession, and stability of natural communities; emphasizes an experimental approach to community investigation. Credit not granted for both Biol 462 and 562.

463 [M] Field Ecology 2 (0-6) Prereq Biol 462. Field implementation of descriptive and experimental techniques to quantify the structure, composition, and interactions within natural communities. Field trips required. Credit not granted for both Biol 463 and 563. Cooperative course taught by WSU, open to UI students (Biol 537).

465 Field Stream Ecology 2 Prereq general ecology. Ecological roles of immature insects in different size streams; pattern changes along the stream continuum; other ecological characteristics.

466 Population Biology and Genetics 3 (2-3) Prereq Biol 301. Population and gene frequency dynamics as fundamental units in ecological interaction and evolutionary change.


469 Ecosystem Ecology and Global Change 3 Prereq Biol 372; Chem 106. Same as ES/ROP 469. Credit not granted for both Biol 469 and 569.

470 Diversity of Plants 3 Morphological, life history, and ecological diversity of major plant clades; emphasis on principles of homology, character transformation, and macroevolution.

480 [M] Writing in Biology 2 Discussion and practice in relating thinking and writing; popular and professional communication in biology.


491 Physical Therapy Clinical Experience V 1-4 May be repeated for credit; cumulative maximum 20 hours. Prereq Psych 105; Biol 315; major in biology; junior standing; by interview only. Work experience under supervision of a qualified professional in treatment of human physical disabilities. S, F grading.

492 Topics in Biology V 1-3 May be repeated for credit; cumulative maximum 6 hours.

495 Internship in Biology, Botany, and Zoology V 2-4 May be repeated for credit; cumulative maximum 8 hours. Prereq major in Biol or Zool. By interview only. Experience in work related to specific career interests. S, F grading.


497 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 8 hours. Academic traineeship in laboratory teaching and tutoring.

498 Senior Thesis 3 Prereq senior standing, 4 research hours. Experimental/literature research leading to written thesis and oral examination.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 Seminar 1 May be repeated for credit. Prereq 20 hours Biol, S, F grading.

501 Proposal Defense Seminar 2 Research proposal defense as part of the preliminary examination for candidacy in the Ph.D. program.

504 Experimental Methods in Plant Physiology 3 (2-3) Rec Biol 320. Advanced techniques and instrumental methods applicable to research in plant physiology.

505 Principles of Organic Evolution 3 (2-3) Prereq Biol 301. The evolutionary processes that influence adaptation, population differentiation, and speciation in organisms. Credit not granted for both Biol 405 and 505.

506 Microtechnique 4 (2-6) Prereq by interview only. Graduate-level counterpart of Biol 406; additional requirements. Credit not granted for both Biol 406 and 506.

509 Plant Anatomy 4 (2-6) Graduate-level counterpart of Biol 409; additional requirements. Credit not granted for both Biol 409 and 509.

510 Fish Population Ecology 2 Review of abiotic and biotic factors controlling or regulating fish population densities and critical review of relevant literature. Cooperative course taught by UI (Fish 514), open to WSU students.

511 Reproductive Biology of Fishes 2 Prereq graduate standing. A graduate-level course covering all aspects of the reproductive biology of fishes. Cooperative course taught by UI (Biol 558), open to WSU students.

512 Molecular Mechanisms of Plant Development 3 Prereq Biol 320. Physiology of growth; metabolism during development and reproduction.

513 Plant Metabolism 3 Prereq Biol 320, MBioS 303. Metabolic processes unique to plants, including the primary incorporation of nitrogen, sulfur, carbon dioxide and phosphate into biomolecules.

514 Fish Genetics 2 Prereq Biol 301. Chromosomal, biochemical, quantitative, and ecological aspects of fish genetics with emphasis on applications to aquaculture and fish management. Cooperative course taught by WSU, open to UI students (FISH 519).

515 Fish Physiology 4 Prereq Fish 511 and permission. Principles and methods used to study vital organs, organ systems, growth, and reproduction of fishes; emphasis on osmoregulation, metabolism, endocrinology, and respiration. Cooperative course taught by UI (Fish 511), open to WSU students.

516 Nutrient Transport and Partitioning in Plants 3 Prereq Biol 320. Structure, physiology, biochemistry and molecular biology of transport and partitioning of water, mineral nutrients and assimilated organic compounds within plants.

517 Stress Physiology of Plants 3 Graduate-level course taught by UI (Biol 417); additional requirements. Credit not granted for both Biol 417 and 517.


519 Introduction to Population Genetics 3 Prereq Biol 301. Survey of basic population and quantitative genetics. Cooperative course taught by WSU, open to UI students (For 511/Gen 505).

520 Conservation Genetics 2 Prereq Biol 301. Genetic studies and approaches relevant to efforts to conserve threatened and endangered populations of organisms.

521 Quantitative Genetics 2 Prereq Biol 519 or permission of instructor. Fundamentals of quantitative genetics; evolutionary quantitative genetics.

522 Molecular Population Genetics and Evolution 2 Prereq MBioS 531. Evolutionary change of molecular sequences; genetic distance and phylogeny; genomic evolution.

523 Advanced Fishery Management 3 Contemporary management of marine and freshwater fish and shellfish populations; commercial, recreational and subsistence fisheries; policy interface of biological systems.

525 Experimental Plant Ecology 1 (0-3) Same as NATRS 525.

526 Population Analysis 1 Same as NATRS 526.

527 Fish Behavior 3 Causes, mechanisms, and functions of fish behavior, including reproduction, communication, schooling, feeding, migration, and orientation. Cooperative course taught by UI (Fish 520), open to WSU students.

529 Principles of Population Dynamics 1 Same as NATRS 529.
530 Statistical Ecology 4 (2-6) Prereq introductory statistics course. Collection and interpretation of ecological data according to biometrical procedures.

531 Principles of Systematic Biology 3 Graduate-level counterpart of Biol 431; additional requirements. Credit not granted for both Biol 431 and 531.

532 Biology of Amphibians and Reptiles 4 (3-3) Graduate-level counterpart of Biol 432; additional requirements. Credit not granted for both Biol 432 and 532.

533 Modern Methods in Systematics 4 (2-6) Rec Biol 431 or 511. Selecting, gathering, and analyzing morphological, cytological, molecular data for phylogenetic and evolutionary studies.

535 Angiosperm Families of the World 3 (2-3) Prereq Biol 332 or 431. Description, classification, and geographic distribution of families of flowering plants of the world.

536 Wildlife Nutrition 3 (2-3) Same as NATRS 531.

538 Animal Behavior 3 (2-3) Graduate-level counterpart of Biol 438; additional requirements. Credit not granted for both Biol 438 and 538.


548 Evolutionary Ecology of Populations 3 Rec Biol 372, 405. Evolutionary dynamics of natural populations and the co-evolution of species. Cooperative course taught by WSU, open to UI students (WLF 548).

551 Comparative Vertebrate Reproduction 3 Graduate-level counterpart of Biol 451; additional requirements. Credit not granted for both Biol 451 and 551. Cooperative course taught by UI (Biol 550), open to WSU students.

553 Development and Plasticity of the Nervous System 3 Comparative approach to neural development and repair in the invertebrates and vertebrates. Cooperative course taught jointly by UI WSU and UI (Biol 509).

555 General and Cellular Physiology 4 (3-3) Prereq cell physiology or genetics course. Same as V Ph 555.

557 Advanced Mammalian Physiology 4 Prereq V Ph 555. Same as V Ph 557.

558 Molecular and Cellular Reproduction 3 (2-2) Same as MBioS 528.

559 Hormones, Brain and Behavior 3 Prereq upper-division biology, psychology or anthropology course. Classical behavioral endocrinology from molecular to whole organisms, integrating evolutionary ecology, neuroethology and behavioral neuroendocrinology.

560 Plant Ecophysiology 3 Graduate-level counterpart of Biol 460; additional requirements. Credit not granted for both Biol 460 and 560.

561 Environmental Physiology 3 Prereq Biol 350 or 353. Graduate-level counterpart of Biol 461; additional requirements. Credit not granted for both Biol 461 and 561.

562 Community Ecology 3 Graduate-level counterpart of Biol 462; additional requirements. Credit not granted for both Biol 462 and 562.

563 Field Ecology 2 (0-6) Graduate-level counterpart of Biol 463; additional requirements. Credit not granted for both Biol 463 and 563. Cooperative course taught by WSU, open to UI students (Biol 537).

564 Molecular Ecology and Phylogeography 3 Prereq Biol 301 or equivalent; Biol 405 or equivalent. Use of genetic markers for the study of ecological phenomena, including kinship, population structure, and phylogeography.

566 Mathematical Genetics 3 Same as Math 563.

567 Ecological Restoration 3 Prereq graduate standing or by permission. Introduction to major issues in restoration ecology; major ecological dimensions of restoration.

568 Conservation Ecology 3 Graduate-level counterpart of Biol 468; additional requirements. Credit not granted for both Biol 468 and 568.

569 Ecosystem Ecology and Global Change 3 Prereq Biol 372; Chem 106. Same as ES/RP 569. Credit not granted for both Biol 469 and 569.

570 Diversity of Plants 3 Prereq graduate standing. Graduate-level counterpart of Biol 470; additional requirements. Credit not granted for both Biol 470 and 570.


586 Special Projects in Electron Microscopy 2 (0-6) or 3 (0-9) May be repeated for credit. By interview only. Practical training in one or more areas of electron microscopy; TEM, SEM, ultramicroscopy, specimen processing, darkroom procedures and light microscopy.

587 Special Topics in Electron Microscopy 1 May be repeated for credit; cumulative maximum 4 hours. S, F grading.

589 Advanced Topics in Zoology V 1-3 May be repeated for credit; cumulative maximum 4 hours. Zoology laboratory teaching internship. S, F grading.

593 Seminar I 1 May be repeated for credit. Literature and problems.

594 Advanced Topics on Vertebrate Form and Function V 1-3 May be repeated for credit. Analysis of animal structure and function emphasizing the evolution of complex systems; constructional morphology; ecomorphology; phylogenetics; heterochrony; size and shape.

595 Seminar II 1 May be repeated for credit; cumulative maximum 8 hours. Literature and problems.

597 Teaching Practicum V 1-4 May be repeated for credit; cumulative maximum 4 hours. Zoology laboratory teaching internship. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Electron Microscopy Courses

E Mic 406 Microtechnique 4 (2-6) Prereq by interview only. Modern methods for preparation of biological specimens for microscopy; paraffin and resin embedding, microtomy, anatomical, cytological and histochemical techniques. Credit not granted for both E Mic 406 and 506.

506 Microtechnique 4 (2-6) Prereq by interview only. Graduate-level counterpart of E Mic 406; additional requirements. Credit not granted for both E Mic 406 and 506.

507 Electron Microscopy Laboratory 4 (2-6) Prereq one year biology; one year org chem; one year phys; by interview only. Techniques of transmission electron microscopy, especially those applicable to biological materials; theory and practice for electron optics and specimen preparation.

586 Special Projects in Electron Microscopy 2 (0-6) or 3 (0-9) By interview only. Practical training in one or more areas of electron microscopy; TEM, SEM, ultramicroscopy, specimen processing, darkroom procedures and light microscopy. May be repeated for credit.

587 Special Topics in Electron Microscopy 1 May be repeated for credit; cumulative maximum 4 hours. S, F grading.
Agriculture (majors in agricultural education, agricultural communications, general agriculture, and agriculture extended degree).

For complete information about all departmental programs, please see our Web page at www.bsyse.wsu.edu.

AGRICULTURAL TECHNOLOGY AND MANAGEMENT

The agriculture options within the Department of Biological Systems Engineering offer flexible courses of study that allow students to prepare themselves for a broad range of careers in agriculture while earning a Bachelor of Science in Agriculture or a Bachelor of Science in Agricultural Technology and Management in agriculture (agricultural education, agricultural communications, general agriculture, and agriculture, extended degree).

In each major, emphasis is placed on gaining a solid background in the agricultural sciences while studying specific subjects that prepare graduates for their chosen fields.

BIOLOGICAL SYSTEMS ENGINEERING

Only graduate degrees are offered. See department for more information.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

AGRICULTURAL EDUCATION DEGREE PROGRAM

(137 HOURS) 1 FYDA

For complete information, visit www.aged.wsu.edu.

The agricultural education major prepares students to teach high school agriculture. A minimum of 46 hours in agricultural sciences is required for graduation.

This course of study leads to the degree of Bachelor of Science in Agriculture. The program includes minimum requirements for initial teacher certification.

At least 20 hours in this degree must be in agriculture. Students electing a major in agricultural education must complete at least 6 hours in the College of Education.

Communication Proficiency. 3 hours in Arts and Humanities, 6 hours in Social Sciences, 3 hours in Mathematics, 8 hours in Biological Sciences, 8 hours in Physical Sciences, and 41 hours in professional education. The program requires a minimum of 134 semester hours for graduation. Students must take all core agriculture courses plus 15 additional credits in agriculture from the College of Agricultural, Human, and Natural Resource Sciences. Students must also meet the College of Education certification requirements for entry into the program.

Students must take all core agriculture courses plus 16 additional credits in technical agriculture from the College of Agricultural, Human, and Natural Resource Sciences. (Student teaching requires Ag Ed 407 and T & L 415.).

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Intercultural [J, G, K] (GER) 3 |
T & L 528 [M] 2 |
T & L 445 2 |
Tier III Course [T] (GER) 3

Fourth Year

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1 Students must take all core agriculture courses plus 17 additional credits in technical agriculture from the College of Agricultural, Human, and Natural Resource Sciences.

2 Student teaching requires Ag Ed 407 and T & L 415.

AGRICULTURAL TECHNOLOGY AND MANAGEMENT DEGREE PROGRAM (122 HOURS) 3 FYDA

For complete information, visit www.agtm.wsu.edu.

The Agricultural Technology and Management degree program is located in the Biological Systems Engineering Department and prepares students for the application of technology to operations or management in agriculture. The areas of application are: precision agricultural operations, services, management of agricultural businesses, sales, production operations, and promotional work in domestic and international agricultural communities.

Emphasis is placed upon the practical application of technology to agricultural enterprises. The curriculum prepares students to own, operate, and manage their own enterprises or to provide services for private or governmental entities. Agricultural technology and management combines students’ inherent creativity and interest in physical and biological sciences, mathematics, business, and other subjects and the desire to develop innovative solutions to a variety of agricultural problems.

A wide variety of agricultural technology and technical management courses is available to non-majors in support of programs in other departments. Many courses can be used as electives by students who wish to explore the field or to use the information for other personal reasons.

The Bachelor of Science degree in Agricultural Technology and Management requires a minimum of 122 credit hours for graduation. Of these, at least 40 hours, including 12 hours of Ag electives, must be courses numbered 300 or above. The department also offers a minor in Agricultural Technology and Management.
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### AGRICULTURE—GENERAL OPTION (121 HOURS) ☼ FYDA

For complete information, visit www.bsyse.wsu.edu/ag or www.tadda.wsu.edu.

General agriculture is designed for students who wish to prepare for careers requiring broad training in agriculture. A maximum number of electives is permitted to enable the student to emphasize one or two fields, or otherwise to tailor the curriculum to fit particular needs. Students desiring to qualify as conservationists in the Natural Resources Conservation Service should have 12 hours of soils. To qualify as soil scientists, a total of 15 hours in soils is required. Soils 201, 301, 413, 421, and 451 are recommended.

A total of 46 agriculture credits are required. 15 credits must be from one department and 9 credits from another department.

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<td>H D 205 [C] or ComSt 102 [C] (GER)</td>
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<td>Biol 106 [B] (GER)</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Complete Writing Portfolio</td>
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¹ Students must complete one of the following sequences: Ag Ec 340/440, Ag Ec 360/460, Ag Ec 350 or 370/450 [M] or two 300-level business courses chosen from the required list for business minors.

² During the junior or senior year, students must take one more writing in the major course [M] in addition to AgTM 433 [M], for a total of two [M] courses.

³ Choose from these required Ag courses: A S 101; Ag Ec 350 or 360; AgTM 312, 315, 416, 426; CropS 302, 303 305; Entom 340; Hort Elective; IPM 201 or Pl P 429; Soils 201; Stat 412.

### COMMUNICATION—AGRICULTURAL (125 HOURS) ☼ FYDA

For complete information, visit www.agcom.wsu.edu.

A major in agricultural communications is offered in cooperation with the School of Communication.

Students declaring this major must select one of the six options and complete the requirements of the general agriculture curriculum and earn a minimum of 30 hours in the School of Communication, including any communications courses used to satisfy general agriculture requirements. Those electing this major should make known that decision as early as possible in their academic career.

A total of 46 agriculture credits are required. 15 credits must be from one department and 9 credits from another department.

See department for options within required agriculture courses. Consult with a School of Communication advisor before registering for elective courses. Specialized programs patterned for individual career aspirations may be developed in conjunction with the head of the School of Communication or a designated representative.

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3. Choose from these required Ag courses: A S 101; Ag Ec 350 or 360; AgTM 312, 315, 416, 426; CropS 302, 303 305; Entom 340; Hort Elective; IPM 201 or Pl P 429; Soils 201; Stat 412.
Description of Courses

Agricultural Education Courses

Ag Ed

317 Secondary School Practicum 2 Prereq T & L 301. Ag Ed classroom experience prior to student teaching to provide observation, reflection, and limited teaching responsibilities. May be repeated for credit; cumulative maximum 6 hours.

342 Methods of Teaching Agriculture 3 Prereq T & L 303 and admitted to College of Education. Methods and strategies for teaching agricultural science.

345 Agriculture Curriculum Development and Theory 2 (1-3) Prereq certified Ag Ed major, admission to program. Planning and developing of an agricultural science curriculum to meet the specific needs of a given community.

401 Adult Programs and Development 3 Organizing and conducting adult programs in agriculture, management, program planning, learning styles, resources; strategies for formal and non-formal adult programs.

407 Student Teaching in Agricultural Education V 4-16 Prereq Ag Ed 342, 442, 471; make application; pay certification fees; complete all other coursework for degree and teacher certification; receive fingerprint clearance from WSP, FBI, and Office of Professional Practices; maintain 2.5 GPA overall and in endorsement and professional core classes; placement by interview only. Supervised teaching in public schools including seminars reflecting effective teaching. S, F grading.

440 [M] Principles of Career and Technical Education 2 or 3 Prereq 9 hours in Educ. Local, state, and national vocational technical educational legislation, policies, programs, and organizations.

442 Program Planning in Agricultural Education 2 Prereq Ag Ed 342. Organization and management of a total vocational agricultural program.

470 Directed Work Experience V 1-3 Job analysis and description; weekly work experience reports and analysis coordinated with problems related to the student’s employment in an approved occupation. May be repeated for credit; cumulative maximum 6 hours.

471 Student Organizations in Agricultural Education 2 Prereq certified College of Education major. Role of Future Farmers of America (FFA) in student organizations; role of advisor; principles of leadership; characteristics of successful FFA chapters. Course equivalent to OSU’s Ag 421/521.

490 Advanced Ag Ed School Practicum V 1-3 Prereq Ag Ed 345, admission to College of Education. Directed group study of selected advanced topics in agriculture and related areas. May be repeated for credit; cumulative maximum 4 hours.

497 Internship in Agricultural Education V 2-12 By interview only. Off-campus professional experience. May be repeated for credit; cumulative maximum 12 hours.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

504 Special Topics in Vocational Education V 1-3 Special topics in agricultural education or agriculture that will provide advanced training for teachers of agriculture.

508 Foundations of Vocational Education 2 Historical, philosophical, social, political and economic factors that influence education in vocational environments.

511 Seminar in Vocational Education 1 Prereq graduate standing. Seminar addressing new and emerging legislation and educational programs in vocational education.

536 Microcomputers in the Vocational Classroom 3 (2-3) Implications and applications of microcomputers for experienced classroom teachers.

597 Cooperative Education Programs 3 Program principles and design; teacher coordination procedures and responsibilities; classroom and on-the-job instruction; public relations; teacher administrative responsibilities.

598 Internship V 1 (0-3) to 3 (0-9) Supervised experience in continuing, extension, and/or vocational educational environments. May be repeated for credit; cumulative maximum 12 hours.

600 Special Projects or Independent Study Variable credit S, F grading.

General Agriculture Courses

Agri

501 Agriculture Master’s Practicum 2 or 3 Prereq admission to graduate program, advisor approval. Course individually designed to provide practical participation/experience under professional supervision in areas related to student’s specialization. May be repeated for credit; cumulative maximum 6 hours.

502 Graduate Seminar 3 Prereq admission to graduate program. Presentations and discussions of contemporary issues, trends, and recent research and development by graduate students, faculty, and visiting scholars.

560 Advanced Agricultural Topics V 1-3 Prereq admission to graduate program. Directed group study of selected advanced topics in agriculture and related areas. May be repeated for credit; cumulative maximum 4 hours.

562 Advanced Topics V 1-3 Prereq admission to graduate program. Directed group study of selected advanced topics in agriculture and related areas. May be repeated for credit; cumulative maximum 4 hours.

587 Issues in Agriculture 3 Prereq admission to graduate program. Exploration and assessment of current issues associated with domestic and international agriculture programs.

598 Graduate Seminar V 1-3 Prereq admission to graduate program. Discussion of contemporary agricultural issues, trends, legislation, and recent research and international development by graduate students, faculty, and visiting scholars. S, F grading.

600 Special Projects or Independent Study Variable credit S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit S, F grading.

Agricultural Technology and Management Courses

AgTM

110 Introduction to Agricultural Technology and Management 1 For freshmen. Basic skills for analyzing, solving, and presenting problems in modern agriculture.
201 Metal Fabrication 3 (1-6) Theory, applications, and practices of welding, machining, and associated techniques in fabricating with metals.

203 Agricultural Structures 3 (2-3) Principles and practices in farm building construction; foundations, frames, materials, tools and plans; experience with tools and materials. Cooperative course taught by WSU, open to UI students (ASM 203).

210 Small Engines 2 (1-3) Repair, adjustment, protective maintenance, operation, and safety of small gasoline engines. Cooperative course taught by UI (ASM 210), open to WSU students.

205 Agricultural Precision Systems 3 (2-3) Prereq junior standing or permission of instructor. Systems for precision agriculture, equipment, software uses, principles, construction, care, tillage, planting, spraying, harvesting, and materials handling machinery. Field trips required. Cooperative course taught jointly by WSU and UI (ASM 305).

215 Agricultural Structures and Environmental Systems 3 (2-3) Planning farm buildings, construction materials, beam and column design, insulation and ventilation for environmental control. Cooperative course taught by UI (ASM 306), open to WSU students.

314 Agricultural Power Units and Mobile Electrical Systems 3 (2-3) Principles of thermodynamics, engine cycles, transmissions, electrical, starting, braking, steering, suspension systems, differentials and hydraulic systems.

315 Irrigation Systems and Water Management 3 (2-3) Prereq Soils 201. Principles of irrigation and drainage, water measurement, irrigation methods and practices, selection of irrigation system components. Cooperative course taught jointly by WSU and UI (ASM 315).

320 Fruit and Vegetable Harvesting and Processing Technology 3 (2-3) Prereq Math GER. Technologies for harvesting, handling, storing, processing, and packaging of value-added fruit and vegetable products.

325 Vineyard and Winery Equipment Systems 3 Overview of machinery systems used in vineyards and wineries.

330 Electrical Power Systems for Agriculture 3 (2-3) Prereq sophomore standing. Methods of selecting and installing electrical power circuits in agricultural operations; light frame construction; motor and control circuits; Programmable Logic Controllers (PLCs).

346 Landscape Irrigation Systems 3 (2-3) System component selection; layout, installation, operation of irrigation systems for turf and landscape plantings; basic system hydraulics; efficient water use.

402 Methods, Materials, and Machines for Teaching Ag Mechanics 3 (1-6) Prereq AgTM 201, 203; 9 hours in EduC. Development of shop programs in project planning, demonstrations, and skills performance; safety and management of materials, tools, and machines.

403 Laboratory Projects Teaching Techniques 1 (0-3) Teaching techniques for laboratory projects in agricultural mechanics. May be repeated for credit; cumulative maximum 2 hours.

405 Advanced Agricultural Precision Systems 2 (1-3) Prereq AgTM 305 or instructor approval. Advanced principles of precision agricultural systems, software uses, management of controllers on equipment, geophysical information systems and global positioning systems.

412 Human and Machinery Risk Management 3 Prereq junior standing or permission of instructor. History and current status of farm worker injury prevention programs in the US including worker's compensation insurance.

416 Fluid Power Systems 3 (2-3) Fluid power principles applied to the selection, design, operation, and management of agricultural and industrial machinery. Field trips required. Cooperative course taught by WSU, open to UI students (ASM 416).


434 Agricultural Processing Laboratory 1 (0-3) Rec AgTM 433 or c//. Experiments in heat transfer, fluid flow and dehydration. Cooperative course taught by WSU, open to UI students (FST 434).

436 Agricultural Technology Design 2 Prereq junior standing, AgTM 305, 405, or permission of instructor; c//AgTM 437. Design applications to methodologies as applied to precision agricultural systems; group problem solving activities, data analysis utilizing computers, and team design efforts. Credit not allowed for both AgTM 436 and 536.

437 Agricultural Technology Design Laboratory V 1 (0-3) to 2 (0-6) Prereq junior standing, AgTM 305, 405, or permission of instructor; c//AgTM 436. Lab for AgTM 436. Credit not allowed for both AgTM 437 and 537. May be repeated for credit; cumulative maximum 4 hours.

443 Special Topics 1 Prereq permission of instructor. Laboratory and research techniques for AgTM. May be repeated for credit; cumulative maximum 3 hours.

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447 Special Topics 1 Prereq permission of instructor. Laboratory and research techniques for AgTM. May be repeated for credit; cumulative maximum 3 hours.

451 Seminar 1 Prereq junior standing. Readings and interviews, research, and oral presentation of professional subjects. May be repeated for credit; cumulative maximum 2 hours.

453 Agricultural Waste Management 2 Prereq junior standing. Waste treatment processes, management plan, regulations and permits.

469 Aquacultural System Design 2 (1-3) Prereq Biol 107; Rec A S 468. Aquaculture production system design, species adaptation to aquaculture, management of water flows, oxygen and nutrient consumption, system impacts and economics.

481 Advanced Topics V 1-4 By interview only. May be repeated for credit; cumulative maximum 8 hours.

495 Internship in Agricultural Technology and Management 2 or 3 Prereq sophomore standing; prior approval of supervisor and advisor required. Work experience related to academic learning. May be repeated for credit; cumulative maximum 6 hours, S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

505 Precision Agricultural Systems Management 3 Prereq admission to graduate program. Evolving technologies involved in precision agriculture and their application to agricultural systems.

530 Agricultural Technology Design 2 Graduate-level counterpart of AgTM 436; additional requirements. Credit not allowed for both AgTM 436 and 536.

537 Agricultural Technology Design Laboratory V 1 (0-3) to 2 (0-6) Prereq junior standing, AgTM 305, 405, or permission of instructor; c//AgTM 436. Graduate-level counterpart of AgTM 437; additional requirements.

Biological Systems Engineering Courses

BSysE

120 Innovation in Design 2 Same as M E 120.

210 Biological Systems Analysis and Design 3 (2-3) Prereq Biol 107, Chem 105; Cpt S 153 or 203. Application of computer-assisted tools for the engineering analysis and design of biological systems.
215 Professional Preparation for Biological Systems Engineering 1 May be repeated for credit; cumulative maximum 3 hours. Preparation for professional, ethical, and social issues and for career development in biological engineering profession. S, F grading.


351 Environmental Hydrology 3 Prereq Math 140, 171, 202, or 206. Hydrologic cycle; commonly used methods for analysis of components of the cycle; importance of hydrology to the environment. Cooperative course taught by WSU, open to UI students (AgeE 353). Credit not granted for both BSySE 351 and 353.

353 Hydrology 3 Prereq one semester of calculus. Analysis of precipitation and runoff events; principles of climatology, evaporation, infiltration, and snowmelt. Credit not granted for both BSySE 353 and 353. Cooperative course taught by UI (AgeE 351), open to WSU students.

410 [M] Project Design I 3 (2-2) Prereq BSYSE 310, 320. Part I of capstone engineering design project; customer needs, design requirements, conceptual design, business plan, project proposal, and presentation.

411 Project Design II 3 (2-2) Prereq BSySE 311 or c/. Detailed design of a biological engineering-related process, machine, structure, or system.

440 Biological Dynamics and Control Systems 3 (2-3) Prereq BSYSE 210, Biol 107, Math 315, E E 304 or c/. Descriptions of biological systems interactions primarily in food processing and eco-environmental systems and strategies to control these systems.

441 Process Control 3 Same as Ch E 441.

452 Eco-environmental Engineering Design 3 (2-3) Prereq junior standing. Engineering design to monitor, evaluate, and minimize non-point pollution from agriculture, environmentally acceptable disposal of wastes; bioremediation. Cooperative course taught jointly by WSU and UI (BSyE 452).

453 Irrigation and Drainage System Design 3 (2-3) Prereq junior standing. Crop water requirements, irrigation scheduling and water management, selection and design of irrigation systems; pump selection. Cooperative course taught by UI (AgeE 456), open to WSU students.

455 Natural Systems for Wastewater Treatment 3 Prereq senior standing. Principles and design procedures of natural systems for wastewater treatment for agricultural and non-agricultural applications.

456 Surface Hydrologic Processes and Modeling 3 (2-3) Prereq Math 315; BSySE 351, C E 351, or Geol 475. Fundamental hydrologic processes, governing equations and solution methods, GIS techniques commonly used in hydrology, class project on modeling surface hydrology. Credit not granted for both BSySE 456 and 556.

457 Design for Watershed Management 3 (2-3) Prereq junior standing. Modeling water movement and mass transport; design for balance between animal, plant, soil, water, and air resources in watershed. Credit not granted for both BSySE 457 and 557. Cooperative course taught by WSU, open to UI students (BSyE 457).

482 Food Process Engineering Design 3 Prereq BSySE 481 or Ch E 330. Design of food processing systems; design and simulation of sterilization and pasteurization processes in foods. Credit not granted for both BSySE 482 and 582. Cooperative course taught by WSU, open to UI students (AgeE/TST 487).

483 Food Separation Processes Design 3 Prereq BSySE 482. Design of food separation unit operations including concentration, dehydration, and membrane processes. Credit not granted for both BSySE 483 and 583. Cooperative course taught by WSU, open to UI students (BSyE 483).

484 Thermal Processing of Foods 3 (2-3) Prereq Ch E 332 or M E 404. Principles and practices of food preservation methods based on application of heat. Credit not granted for both BSySE 484 and 584.

486 Food Rheology 3 (2-3) Prereq BSySE 481. Principles and applications on the rheology of foods, including fundamental and empirical equations; viscoelasticity; normal forces, time dependency and instrumentation. Credit not granted for both BSySE 486 and 586. Cooperative course taught by WSU, open to UI students (BSyE 486).

487 Food Plant Design 3 Prereq BSySE 482. Preliminary design of food processing plants, including engineering principles, equipment selection, economic analysis, and regulatory aspects. Cooperative course taught by WSU, open to UI students (BSyE 487).

488 Food Powders 3 Engineering principles applied to handling and processing of food powders, including particle size distribution, morphology, physical properties, agglomeration, attrition, and segregation. Credit not granted for both BSySE 488 and 588. Cooperative course taught by WSU, open to UI students (BSyE 488).

491 Advanced Topics V 1-3 May be repeated for credit; cumulative maximum 8 hours. Prereq junior standing.

495 Internship in Biological Systems Engineering V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq sophomore standing. Prior approval of supervisor and advisor required. Work experience related to academic learning. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

510 Fundamentals of Research 3 Prereq graduate standing. The research process and the graduate research project; objectives, techniques, and challenges; scientific method and the design process; use of literature; creativity; writing and speaking about research; preparation of a research proposal. Cooperative course taught by UI (For 510), open to WSU students.

512 Research and Teaching Methods 2 (1-3) Prereq graduate standing. Analysis and scientific communication.

541 Instrumentation and Measurements 3 (2-3) Prereq Math 172; Phys 102 or 202. Instrumentation systems and measurement concepts, electronic signal-conditioning components and circuitry, digital electronics and microprocessor basics. Cooperative course taught by UI (AgeE 541), open to WSU students.

551 Advanced Biological Systems Engineering Topics V 1-4 May be repeated for credit; cumulative maximum 6 hours. Directed group study of selected advanced topics in biological systems engineering. Cooperative course taught by WSU, open to UI students (AgeE 561).

552 Advanced Biological Systems Engineering Topics V 1-4 May be repeated for credit. Directed group study of selected advanced topics in biological systems engineering. Cooperative course taught by WSU, open to UI students (AgeE 561).

555 Natural Systems for Wastewater Treatment 3 Prereq senior or graduate standing. Principles and design procedures of natural systems for wastewater treatment for agricultural and non-agricultural applications.

556 Surface Hydrologic Processes and Modeling 3 (2-3) Graduate-level counterpart of BSYSE 456; additional requirements. Credit not granted for both BSySE 456 and 556.

557 Design for Watershed Management 3 (2-3) Prereq junior or graduate standing. Graduate-level counterpart of BSySE 457; additional requirements. Credit not granted for both BSySE 457 and 557. Cooperative course taught by WSU, open to UI students (BSyE 457).

558 Fluid Mechanics of Porous Materials 3 Statics and dynamics of multi-flow systems in porous materials, properties of porous materials; steady and unsteady flow. Cooperative course taught by UI (AgeE 558), open to WSU students.

562 Systems in Integrated Crop Management 3 (2-3) Same as Entom 562.

581 Advanced Physical Properties of Foods 3 Prereq BSYSE 481, Math 315. Analysis, modeling, and experimental procedures to measure food physical properties for use in food processing system design.
582 Food Process Engineering Design 3 Graduate-level counterpart of BSysE 482; additional requirements. Credit not granted for both BSysE 482 and 582. Cooperative course taught by WSU, open to UI students (AgE/FST 587).

583 Food Separation Processes Design 3 Graduate-level counterpart of BSysE 483; additional requirements. Credit not granted for both BSysE 483 and 583.

584 Thermal Processing of Foods 3 (2-3) Prereq Ch E 332 or M E 404; graduate standing. Graduate-level counterpart of BSysE 484; additional requirements. Credit not granted for both BSysE 484 and 584.

586 Food Rheology 3 (2-3) Graduate-level counterpart of BSysE 486; additional requirements. Credit not granted for both BSysE 486 and 586. Cooperative course taught by WSU, open to UI students (BSyE 586).

587 Food Plant Design 3 Graduate-level counterpart of BSysE 487; additional requirements. Credit not granted for both BSysE 487 and 587. Cooperative course taught by WSU, open to UI students (FST 587).

588 Food Powders 3 Graduate-level counterpart of BSysE 488; additional requirements. Credit not granted for both BSysE 488 and 588. Cooperative course taught by WSU, open to UI students (BSyE 588).

589 Food Quality Instrumentation 3 (2-3) Instrumentation used in food quality assessment; classification of assessment techniques by product properties and evaluation methods. Cooperative course taught by WSU, open to UI students (BSyE 589).

594 Advanced Topics in Bioprocessing and Biotreatment 3 Analysis of bioprocessing and biotreatment processes including energetics, stoichiometry, species competition, process infiltration, product separation and optimization.

595 Groundwater Flow and Contaminant Transport 4 (3-3) Prereq Math 315; BSysE 351 or C E 351 or Geol 475. Physics of flow and contaminant transport in saturated porous media including governing equations, well hydraulics and computer modeling.

598 Graduate Seminar 1 May be repeated for credit. Required of all graduate students in biological systems engineering. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. (For PhD in engineering science only.) S, F grading.

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**College of Business**

www.cbe.wsu.edu/

Todd Hall 570

509-335-3596

In the WSU College of Business and Economics, motivated students are inspired and challenged to become world-class entrepreneurs, innovators, and leaders of the future. They experience collaborative, active learning in a high-tech environment and work side-by-side with professors who are acclaimed researchers in their fields. They seize opportunities, such as competing to join the team of finance seniors that invests $1 million of University money. They place high in PAC-10 business case competitions. They can be “virtual teammates” in special 24/7, around-the-globe information systems projects with real clients. And they intern for, and build careers in, leading international companies and organizations.

This is a time of unparalleled change in the College. Tremendous efforts and investments by faculty, staff, partners, and alumni are focused on propelling the school to be rated among the best in the nation. Students at all levels are benefiting from this energized commitment to excellence.

Recently, comprehensive graduate and undergraduate curricular reviews were conducted to ensure courses and content are relevant in today's global marketplace. The number of major and minor offerings has been streamlined, allowing the College to capitalize and focus its resources on its strongest and most contemporary fields of study. Engaged, world-class professors are rewarded for being innovative teachers and recognized for publishing meaningful scholarly research in leading academic journals. Top, motivated students are often invited to assist faculty in their work, gaining significant resume-building experiences.

Students enjoy top-rate facilities in Todd Hall, the home of the College. It is continuously upgraded and reorganized for top efficiency. A special infrastructure supports fast, wireless computer connectivity in every classroom and study area. The new $500,000 Boeing Wireless Classroom—a showcase for team-based, futuristic learning on the Pullman campus—is equipped with digital whiteboards, videoconferencing technologies, and laptop computers in a “family room” environment furnished with sofas. A professional kitchen and formal dining room promotes hands-on learning about the hospitality industry. And an electronic trading room, complete with a ticker board, enables students to experience the “buy” and “sell” decisions for their portfolio.

A minimum business gpa of 2.5 is required for graduation.

**Certification Requirements**

Given high demand for business courses and strict accreditation requirements, certifying as a business major is competitive and course enrollments are limited. A student must meet the following minimum requirements to be eligible to apply to certify a major in business: 1) Complete Acctg 230, 231; B Law 210; MgtOp 215; Econ 101, 102; Engl 101; Math 201, 202; and MIS 250 with a grade of no lower than C in each course; 2) Have a cumulative gpa of at least 2.5; and 3) Have earned at least 60 credit hours. Students will then be placed in rank order based on cumulative GPA and other performance criteria. The top students then are certified based on the number of spots available that semester.

To be eligible to apply to certify a business minor, a student must be certified in a major, have a cumulative gpa of at least 2.5, and have earned at least 60 credit hours. Students will then be placed in rank order based on cumulative GPA and other performance criteria. The top students then are certified based on the number of spots available that semester.

**Graduation Requirements**

General Program Requirements

General course requirements, core courses, and fields of specialization are presented below. Requirements vary depending upon the field of specialization selected. For a detailed description of degree requirements (with changes approved since publication of the latest catalog), see current degree requirements for BA majors, available in the College of Business and Economics.

By the completion of 60 hours of credit, all students, including transfer students, must have completed English, Math, and 100-200-level CBE core courses: Acctg 230, 231; B Law 210; MgtOp 215; Econ 101, 102; Engl 101; Math 201, 202; and MIS 250 with a grade of C or better. Enrollment in 300-level business courses is restricted to those students who have met these requirements and have certified as BA or HBM majors. Students certified in non-busi-
ness majors may enroll in required 300-400-level business courses as space permits.

All students majoring in business must complete 50% of their course work outside of the College of Business and Economics.

Residence Requirements: 1) At least 50% of business core and major specialization course requirements must be taken at WSU; 2) At least nine 300-400-level business/economics courses must be taken in residence at WSU; and 3) The last 30 hours of course work must be taken at WSU.

The chair of the department and/or the associate dean of the college must approve in writing any course work that is not accepted as transferable equivalents to 300-400-level courses.

Second Bachelor's Degree
Students who have received a bachelor's degree in another area may obtain a Bachelor of Arts degree in Business Administration by presenting total credits of at least 150 hours and by fulfilling the following departmental requirements: Acctg 230, 231; B Law 210; ComSt or H D [C]; Econ 101, 102; Engl 402 [W] or 403 [W]; Fin 325; Math 201, 202; MgtOp 215, 301, 340; MgtOp 491 or 492; MIS 250; Mktg 360; Pol S Elective; Soc or Psych [S]; and the courses required for the student's chosen major in business.

The second degree can usually be completed in less than two years, depending on the number of business requirements completed as electives for the first undergraduate degree. Second degree students must have completed Acctg 230, 231; B Law 210; MgtOp 215; Econ 101, 102; Engl 101; Math 201, 202; and MIS 250 before enrolling in 300-400-level business courses. Students should consult the CBE Business Advising Office for specific requirements.

Transfer Students
Students planning to transfer to Washington State University at the end of the freshman or sophomore year should follow, as closely as possible, the general and core course requirements set forth above. If this is done, there should be no difficulty in completing the requirements for the bachelor's degree within the normal period of four years. It should also be noted that courses taken at community colleges are not accepted as transferable equivalents to 300-400-level courses at WSU.

Department of Accounting

www.cbe.wsu.edu/acctg
Todd 242
509-335-8541

Professor and Department Chair, R. Greenberg; Professors, A. Frakes, D. Sanders, J. Sweeney, R. Toolson, B. Wong-on-Wing; Associate Professors, J. Cote, S. Gill, C. Latham, T. Nanamaker; Assistant Professors, C. Bame-Aldred, J. Thornton; Professor Emeritus, G. Johnson.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

ACCOUNTING AND INFORMATION SYSTEMS DEGREE PROGRAM (120 HOURS)

The objectives of the Bachelor of Arts in Business Administration with a major in accounting and information systems are to provide knowledge about practical and conceptual accounting, management information systems, and the use of accounting information for managerial decision-making purposes. This provides preparation for careers in private, governmental, and nonprofit accounting and information systems, consulting in public accounting and management consulting firms.

First Year

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ACCOUNTING DEGREE PROGRAM (120 HOURS)

The objectives of the Bachelor of Arts in Business Administration with a major in accounting are to provide knowledge about practical and conceptual accounting, basic accounting information systems, and the use of accounting information for managerial decision-making purposes. This provides preparation for careers in private, governmental, and nonprofit accounting. It also provides a foundation to enter the Master of Accounting program for those interested in a professional career in public accounting or consulting.

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Elective 3  
Acctg 331  
Acctg 335 or 338  
Elective  
Mgt 301  
Tier III Course [T] (GER)  

Fourth Year

First Term  
Hours
Acctg 433 [M]  
Acctg or General Elective  
Econ 301,320 or 340  
Engl 402 [W] or 403 [W] (GER)  
Elective  

Second Term  
Hours
Acctg 438 [M] or 439 [M]  
MgtOp 491 or 492  
Two of Acctg 430, 434, 435, 438 [M], or 439 [M]  
Elective  

Minors

Accounting

Required courses: Acctg 230, 231, 330, and 331. In addition, 6 hours from Acctg 335, 338, 433, 434, 435, 438, 439.

A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100- or 200-level only. All other course work for the minor must be WSU course work.

Description of Courses

Accounting Courses

Acctg

230 Introduction to Financial Accounting  
3 Prereq sophomore standing. Introduction to corporate financial reporting via the preparation and interpretation of financial statements.

231 Introduction to Managerial Accounting  
3 Prereq Acctg 230. Introduction to managerial accounting; generation and use of accounting data for planning and controlling business operations.

275 Special Topics: Study Abroad  
V 1-15 May be repeated for credit. S, F grading.

330 Intermediate Accounting I  
3 Prereq Acctg 231; MIS 250. Theory underlying the determination of income; analysis of financial statements.

331 Intermediate Accounting II  
3 Prereq Acctg 330. Continuation of Acctg 330.

333 Business Processes and Controls  
3 Prereq Acctg 230; 231. Introduction to business processes, internal controls including risk assessment and internal audit.

335 Introduction to Taxation  

338 Cost Accounting  
3 Prereq Acctg 231; MgtOp 215; Math 107 or 201; 202; MIS 250. Management uses of cost information; cost systems and system design; cost analysis.

430 Advanced Accounting  
3 Prereq Acctg 331. Partnership equity and extended forms of corporate ownerships and entities.

431 Accounting Theory  
3 Prereq Acctg 331. Accounting theory and contemporary issues.

433 [M] Accounting Systems and Auditing  
3 Prereq Acctg 330; MIS 250. Accounting systems design; internal control and computerization.

434 Accounting for Public Organizations  
3 Prereq Acctg 331. Conceptual and procedural accounting issues involving public sector organizations.

435 Individual Income Taxes  
3 Prereq Acctg 335. The study of individual income taxes from both compliance and planning perspectives. Credit not granted to those taking Acctg 335 prior to Fall 1999.

438 [M] Advanced Cost Accounting and Management  
3 Prereq Acctg 338. Cost/managerial accounting as it is used for decision making and strategic planning. Emphasis on budgeting, product cost, and performance measurement.

439 [M] Auditing  
3 Prereq Acctg 331, 433; MIS 250. Nature of auditing, generally accepted auditing standards, and audit procedures as related to auditing of financial statements by independent accountants.

498 Accounting Internship  
V 2-15 Cooperative educational internship with a business, government or nonprofit organization. May be repeated for credit; cumulative maximum 15 hours. S, F grading.

499 Special Problems  
V 1-4 May be repeated for credit. S, F grading.

530 Accounting Theory  
3 Recent developments with respect to the determination of income and the valuation of assets.

531 Federal Taxation  
3 Prereq Acctg 335. Overview of federal taxation of individuals, partnerships, corporations, estates and gifts.

532 Contemporary Accounting Cases and Problems  
3 Accounting theory applied to external financial reporting practices.

533 Administrative Control  
3 Managerial evaluation of budgeting, cost accounting, and financial analysis techniques; their utilization in control of operations.

535 Taxation of Partners and Partnerships  
3 Prereq Acctg 335. Federal income tax impact on partners and partnerships of forming, operating, and liquidating partnerships.

536 Taxation of Corporations and Stockholders  
3 Prereq Acctg 335. Federal income tax impact on corporations and their stockholders from forming, operating, and liquidating corporations.

537 Professional Research  
3 Methodology used by accounting professionals to research applied problems in taxation, accounting, and auditing; communicate results.

538 Seminar in Cost/Managerial Accounting  
3 Cost concepts, cost and managerial accounting systems; current issues and research in cost and managerial accounting.

539 Seminar in Public Accounting and Auditing  
3 Prereq Acctg 439. Public accounting and auditing to present; current issues including statistical sampling and computers.

550 Introduction to Financial and Managerial Accounting  
3 Fundamentals of financial and managerial accounting; primarily for graduate students who wish to meet the MBA core requirements in accounting.

596 Doctoral Topics  
3 Advanced topics in accounting. May be repeated for credit; cumulative maximum 15 hours.

600 Special Projects or Independent Study  
Variable credit S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination  
Variable credit S, F grading.

800 Doctoral Research, Dissertation, and/or Examination  
Variable credit S, F grading.

Business Law Courses

B Law

210 Law and the Legal Environment of Business  
3 Fundamentals of business law; the legal system, legal reasoning, public, commercial, managerial and property law, and government regulation.

410 Commercial Law  
3 Prereq B Law 210. Contracts, sales, leasing, and licensing; commercial paper; and debtor creditor relations.

411 Managerial Law  
3 Prereq B Law 210. Law of agency, partnerships, limited liability companies and corporations; and securities regulation.

414 [M] Law of Real Estate  
3 Prereq B Law 210. Legal principles and precedents as they apply to the real estate environment.

415 [M] Law of International Trade  
3 Prereq B Law 210. Legal organization of the international community; international aspects of trade and development, economic cooperation, and technical, social, and cultural cooperation.

416 [M] Public International Law  
3 Prereq B Law 210. Law governing states, intergovernmental organizations, and nongovernmental organizations (including multinational enterprises); human rights law; environmental law; and dispute settlement.

417 [M] Law of Cyberspace  
3 Prereq B Law 210. Laws regulating intellectual property rights; contracts, communications, torts, and crimes in cyberspace.

418 Ethics in Cyberspace  
3 Prereq B Law 210 and MIS 250. Examination of the moral and ethical parameters of doing business in cyberspace.

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1 For a total of 7 hours of Biological and Physical Sciences.
2 Acctg 438 and 439 can only be used once.
College of Business

498 Business Law Internship V 2-15 Cooperative educational internship with a business, government or nonprofit organization. May be repeated for credit, cumulative maximum 15 hours. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

510 Business Law and Ethics 3 Legal process and reasoning; commercial, managerial, and employment law; government regulations; contracts, torts, crimes; ethical conflicts and ethical decision making.

511 Business Law II 3 Prereq B Law 210 or 510. Law of partnerships, corporations, securities regulations, negotiable instruments, secured transactions, property, insurance and bankruptcy; government regulation of businesses and professions.

Center for Entrepreneurial Studies

www.cbe.wsu.edu/~entrep/

Johnson Twr 501
509-335-5051

Directors, D. Huber, J. Huber; Chair of Entrepreneurial Studies J. Rose; Instructors, J. Harris, K. Owen, S. Zawovsky.

The WSU Center of Entrepreneurial Studies and the Entrepreneurial Studies Program are designed to provide education in the critical skills essential for business creation and innovation. Included in the mission is the desire to promote research directed toward the understanding of these processes and to develop practical solutions to the management problems of small and medium-sized businesses. It is intended to build the human resources necessary to stimulate, develop, and promote a climate for accelerated business development and expansion in the Washington State region. The Entrepreneurial Studies Program offers the Bachelor of Arts degree with either a major or a minor. Students interested in starting their own business, working in a family business, or looking for positions as general managers will find entrepreneurship an attractive major.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

ENTREPRENEURSHIP DEGREE PROGRAM (120 HOURS) FYDA

The entrepreneurship major has been developed for students interested in venture management, new venture startups and small business, and the management of family firms.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
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Second Term

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Second Year

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Third Year

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Second Term

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<td>Entrp 426</td>
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Fourth Year

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<td>Entrp 489</td>
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Second Term

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<td>MgtOp 491</td>
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<tr>
<td>Two from: Group A²</td>
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<tr>
<td>Elective</td>
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1 For a total of 7 hours of Biological and Physical Sciences.
2 Group A electives are: Acctg 338; B Law 410; Econ 301; Entrp 485, 496, 498 (3 hours), and 499 (3 hours); Ins 420 [M]; MIS 372 [M]; Mgt 450, 455; Mktg 478 [M].

Minors

Entrepreneurship

Three from Econ 301, Fin 325, MgtOp 301, Mktg 360; and three from Entrp 375, 426, 485, 489, 490, 492 [M], 496, 498 (no more than 3 hours), or 499 (no more than 3 hours).

A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100-200-level only. All other course work for the minor must be WSU course work.

Description of Courses

Entrepreneurship Courses

Entrp

375 Electronic Commerce and the Internet 3 Same as MIS 375.

399 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

426 Entrepreneurial Finance 3 Same as Fin 426.

485 Entrepreneurship for E-Commerce 3 Prereq Fin 325, Mktg 360, MgtOp 301, MIS 375. Understanding new ventures in the e-commerce environment.

489 Entrepreneurial Management 3 Prereq Econ 101, 102, Fin 325, MgtOp 301, MIS 250, Mktg 360. Same as MgtOp 489.

490 [M] Entrepreneurship 3 Same as Mktg 490.


496 Special Topics V 1-3 Course covers new or time-sensitive topics in entrepreneurship. May be repeated for credit; cumulative maximum 6 hours.

498 Entrepreneurship Internship V 2-15 Cooperative educational internship with a business, government, or nonprofit organization. May be repeated for credit; cumulative maximum 15 hours. S, F grading.

499 Special Problems V 1-4 Individualized study for students with special interests or needs. May be repeated for credit. S, F grading.

Department of Finance, Insurance, and Real Estate

www.cbc.wsu.edu/fire/

Todd 480
509-335-8727

Professor and Department Chair, G. Lai; Professors, Victor L. Lyon/CCIM Distnguished Professor of Real Estate D. Epley, Brinson Chair of Investment Management R. Sias; Associate Professors, Mutual of Enumclaw/Field Distinguished Professorship in Insurance M. McNamara, J. Nofsinger, Omer L. Carey Chair H. Turtle, D. Whidbee; Assistant Professors, J. Becker-Blease, K. Beller (Clinical), G. Caton, S. Kalpathy, E. Kelley, D. Paul.
Schedules of Studies

**Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.**

**FINANCE DEGREE PROGRAM (120 HOURS)**

Preparation for careers in financial management, investment analysis, financial institutions management, financial services, real estate, or risk management and insurance.

**First Year**

**First Term**
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Engl 101 [W] (GER) 3
- Math 201 3
- Tier I Science [Q] (GER) 3

**Second Term**
- Biological Sciences [B] (GER) 3 or 4
- Econ 101 [S] or Econ 102 [S] (GER) 3
- GenEd 111 [A] (GER) 3
- Intercultural [J,G,K] (GER) 3
- Math 202 [N] (GER) 3

**Second Year**

**First Term**
- Acctg 231 3
- Arts & Humanities [G,H] (GER) 3
- B Law 210 3
- Physical Science [P] (GER) 3 or 4

**Second Term**
- Acctg 231 3
- MgtOp 215 4
- MIS 250 3
- Oral Com [C] (GER) 3
- Soc or Psych [S,K] (GER) 3
- Complete Writing Portfolio

**Third Year**

**First Term**
- 300-400-level Elective 3
- Acctg 330 3
- Fin 325 3
- MgtOp 301 3
- Pol S Elective 3

**Second Term**
- Econ 301 3
- Fin 421 3
- Finance Elective2 3
- MgtOp 340 3
- Mktg 360 3

**Fourth Year**

**First Term**
- Engl 402 [W] or 403 [W] (GER) 3
- Fin 427 [M] or Fin 437 [M] 3

**Description of Courses**

**Finance Courses**

**Fin 323 Personal Finance** 3 For nonbusiness majors.
Consumer credit, financial institutions, investments, mutual funds, insurance, social security, home ownership, taxes, estate planning.


**345 Real Estate** 3 Prereq B Law 210, Econ 102 and Fin 325 or c/. Relationships between location and value; patterns of urban land use; legal, financial, and organizational framework of the real estate business.

**346 Washington Real Estate Regulations** 1 Washington real estate regulations found in the Revised Code of Washington (RCW) and the Washington Administrative Code (WAC). S, F grading.

**350 Risk and Insurance** 3 Prereq B Law 210; Econ 102. Concepts in risk management and insurance; personal risks and treatment methods; legal principles in risk and insurance; overview of the insurance industry, company operations, and insurance regulation.

**409 Real Estate Finance** 3 Same as RE 409.

**421 Financial Institutions and Intermediation** 3 Prereq Fin 325. Characteristics of financial markets and institutions; analysis of fixed-income securities; and introduction to financial risk management.

**422 Financial Institutions Management** 3 Prereq Fin 325. Problems facing financial institution managers and solution techniques; credit risk analysis and management; financial institutions structure and regulation.

**423 Financial Management in the Digital Enterprise** 3 Prereq Fin 325. Financial management in e-commerce ventures; issues and tools including investment under uncertainty, real options, and financing high-tech firms.


**426 Entrepreneurial Finance** 3 Prereq Acctg 231; Fin 325. Raising capital for new enterprises; venture capital, IPOs, debt financing, leasing and valuing start-up ventures.

**427 [M] Investment Analysis** 3 Prereq Fin 325. Investment objectives, modern portfolio theory, valuation, equilibrium, market efficiency and principles of security analysis.


**437 [M] Cougar Investment Fund I** 3 Prereq Fin 325. Students manage a portion of the University’s endowment; including security analysis, valuation, equilibrium, market efficiency, and modern portfolio theory.

**438 Cougar Investment Fund II** 3 Prereq Fin 325, Fin 437 (or Fin 427 with instructor permission). Students manage a portion of the University's endowment. Topics include portfolio risk management, return attribution, private equity, and hedge funds.

**445 [M] Real Estate Valuation** 3 Prereq Fin 325; Fin 345. Principles and practices of real property valuation; factors affecting real property values and income; appraisal and location theory.

**447 Real Estate Investments** 3 Prereq Fin 325. Instruments, techniques, and institutions of real estate investment; forms of ownership, tax law, decision-making tools and applications.

**449 Real Estate Finance** 3 Prereq Fin 325. Analysis of primary and secondary mortgage markets, financing techniques, mortgage securities, mortgage risk, and real estate portfolios.

**451 Life Insurance and Financial Planning** 3 Prereq Fin 325. Analysis of the personal risks of premature death, poor health, and retirement security; financial planning solutions to these risks, including life insurance, health insurance and annuities.

1 For a total of 7 hours of Biological and Physical Sciences.

2 Finance majors are required to take four elective courses from the following list: Acctg 331, 338, Econ 320, Fin 345, 350, 422, 426, 428, 438, 445, 449, 451, 452, 456, 481, 498 and 499. A minimum of 3 credit hours is required for Fin 498, 499, or a combination of credit hours from the two courses to count toward a student’s finance elective requirement. In addition, Fin 498 and/or 499 may count for no more than ONE of the finance elective requirements.

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**Minors**

**Finance**

The minor in finance requires 18 hours and must include Acctg 231; MgtOp 215; Fin 325, 421, 427 [M]; and one from Fin 345, 350, 422, 425, 427 [M], 426, 428, 438, 445, 447, 449, 451, 452, 456, 481, 498, or 499.

A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100- or 200-level only. All other course work for the minor must be WSU course work.

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**College of Business**
542 Property and Liability Insurance 3 Prereq Fin 330. Analysis and management of business property, liability and consequential loss exposures; issues in the property and liability insurance industry.

546 Risk Management 3 Prereq Fin 325. Identification and analysis of loss exposures of business and nonprofit organizations; application of risk treatment measures including loss control and risk financing alternatives.

581 International Finance 3 Prereq Bus 311. Financial problems of multinational business; international financial environment; long-term capital commitment to an international venture, financial techniques for firm operation, and international investment.

593 Financial Management for High Tech Firms 3 Prereq Fin 335. Application of finance principles to firms in high-tech industries; financial management, capital investment, and mergers/acquisitions.

542 Advanced Topics in Real Estate 3 Basic forces that motivate and affect investors in their use and possession of real estate.

581 International Finance 3 Same as 1 Bus 581.

590 Advanced Topics in Mathematical and Quantitative Methods V 1-6 Prereq Ag Ec 500, 501, or permission of instructor. Same as Ag Econ 590.

591 Advanced Topics in Monetary and Public Economics V 1-6 Same as Econ 591.

592 Advanced Topics in International and Development Economics V 1-6 Same as Econ 592.

593 Advanced Topics in Health, Education, Labor, and Demographic Economics V 1-6 Same as Econ 593.

594 Advanced Topics in Markets and Industrial Organization V 1-6 Prereq Ag Ec 500; 501, or permission of instructor. Same as Ag Ec 594.

595 Advanced Topics in Resource and Production Economics V 1-6 Prereq Ag Ec 500; 501, or permission of instructor. Same as Ag Ec 595.

596 Advanced Topics in Financial Economics V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Fin 504 and 512 or permission of instructor. Topics may include financial theory and empirical methods as applied to financial management, investments, international finance, and markets/institutions.

600 Special Projects or Independent Study Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

MANAGEMENT INFORMATION SYSTEMS

DEGREE PROGRAM

(120 HOURS)  ☐ FYDA

Preparation for careers in every field of business, using information systems technology to solve business problems. Provides excellent training in systems design, development, networking, and support to meet the demands of this fast-growing occupational area.

First Year

First Term

Econ 101 [S] or Econ 102 [S] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 201 3
Tier I Science [Q] (GER) 3

Second Term

Biological Sciences [B] (GER) 3 or 4
Econ 101 [S] or Econ 102 [S] (GER) 3
Intercultural [I, G, K] (GER) 3
Math 202 3
MIS 250 3

Second Year

First Term

Acctg 230 3
Arts & Humanities [G, H] (GER) 3
GenEd 111 [A] (GER) 3
MIS 171 3
Physical Sciences [P] (GER) 3 or 4

Second Term

Acctg 231 3
B Law 210 3
MgtOp 215 4
MIS 271 2
Oral Com [C] (GER) 3

Third Year

First Term

Fin 325 3
MgtOp 301 3
MIS 322 [M] 3
Mktg 360 3
Elective 3

Second Term

Engl 402 [W] or 403 [W] (GER) 3
MgtOp 340 3
MIS 325 3
MIS 372 [M] 3
MIS 374 3

Fourth Year

First Term

MgtOp 491 or 492 3
MIS 375 or 426 3

Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

Department of Information Systems

www.cbe.wsu.edu/mis/
Todd 242
509-335-8541

Associate Professor and Department Chair, M. Fuller; Professor, Marion E. Smith Presidential Endowed Chair and Hubman Distinguished Professor in MIS J. Valacich; Associate Professors, K. Joshi, Suprateek Sarker; Assistant Professors, P. Datta, M. Featherman, T. Hess, K. Maretz, G. Rose, Suomee Sarker, J. Wells.
MIS 425 [M] 3
Soc or Psych [S] (GER) 3
Elective 3

Second Term Hours
MIS 448 [M] 3
Pol S Elective 3
Tier III Course [T] (GER) 3
Electives 6

1 For a total of 7 hours of Biological and Physical Sciences.

Minors

Management Information Systems
MIS 171, 250, 271, 322; two of the following: MIS 325, 372, 374, 375, 425, or 426.

Description of Courses

Management Information Systems Courses

MIS

153 BASIC Programming 3 Same as Cpt S 153.
171 Introduction to Business Programming 3 Fundamentals of business programming logic and development environments.

201 Network and Operating System Essentials 2 Introduction to network, operating systems, and the technologies that support them; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

202 Implementing and Supporting Windows 2000 3 Installation, configuration, and management of Windows 2000 Professional and Server; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

203 Implementing Network Infrastructure 3 Installation, configuration, and management of network services within Windows 2000 networks; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

204 Implementing Directory Services 3 Installation, configuration, and management of Windows 2000 Directory Services; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

205 Designing Network Infrastructure 3 Designing network infrastructures using Windows 2000 technologies; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

206 Designing Directory Services 2 Designing directory services using Windows 2000; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

207 Designing Secure Networks 3 Designing secure networks using Windows 2000 technologies; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

208 Updating Support Skills to 2000 3 Provides updated information for those already familiar with Windows NT 4.0 seeking Windows 2000 knowledge; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

209 Internet Information Server 2 Various features of MS internet information server and Web hosting; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

210 MS FrontPage 2 Practical and logical Web design using MS FrontPage; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

220 Oracle Operator 3 Extensive introduction to Oracle dataserver technology; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

221 Introduction to ORACLE SQL and PL/SQL 3 Using Oracle to manage relational and object-oriented databases; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

250 Managing Information Technology 3 (2-2) Comprehensive overview of the role of management information systems in business, principles and application of MIS, and hands-on computer labs.

271 Intermediate Business Programming 3 Prereq MIS 171. Top-down program design, structured programming techniques, and program testing.

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

322 [M] Systems Analysis and Design 3 Prereq MIS 250. The application of systems analysis and design to the development of information systems; structured and interactive development methodologies.

325 Enterprise Business Programming 3 Prereq MIS 250, 271. Basic principles of designing and developing enterprise-level business applications.

350 Management Information Systems 3 Prereq MIS 150. Management information systems foundations; current trends; MIS technology fundamentals; applications to business functions and management practice.

372 [M] Database Management Systems 3 Prereq MIS 171, 322. Database management systems and non-procedural languages; principles of file design and optimization.

374 Telecommunications and Networking in Business 3 Prereq MIS 250. Data communications; infrastructure, and protocols; network topologies and management; business applications of communication technologies.

375 Electronic Commerce and the Internet 3 Prereq MIS 250. Capabilities of the Internet to support and enable electronic commerce; effective design and implementation; managerial issues.


418 Ethics in Cyberspace 3 Prereq B Law 210 and MIS 250. Same as B Law 418.

425 Emerging Technologies I 3 May be repeated for credit; cumulative maximum 12 hours. Prereq MIS 250. Special and advanced topics in MIS.

426 Emerging Technologies II 3 May be repeated for credit; cumulative maximum 12 hours. Prereq MIS 250. Special and advanced topics in MIS.

427 Emerging Technologies III 3 Prereq MIS 250. Special and advanced topics in MIS.

428 Emerging Technologies IV 3 Prereq MIS 250. Special and advanced topics in MIS.

448 IS Project Team Management 3 Prereq MIS 325, 372: MIS 425 or c/. IS project team management principles, project planning, execution and control.

475 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

498 Management Information Systems Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

572 Database Management Systems 3 Prereq admission to MBA program. Database management, data modeling, system design and implementation; the application of DBMS technologies to organizational and business problems.

574 Telecommunications and Networking in Business 3 Prereq admission to MBA program. Business applications of data communications, infrastructure, protocols and management, the design of wired and wireless solutions, and related research issues.

575 Electronic Commerce and the Internet 3 Prereq admission to the MBA Program. Technologies underlying electronic commerce and the Internet; strategies and implementation plans for managing the implementation of electronic commerce systems.

576 Emerging Technologies 3 Prereq admission to the MBA Program. Special and advanced topics in MIS.
International Business Institute

www.cbe.wsu.edu/ibi/

Johnson Twr 501

509-335-2180


The International Business Institute (IBI) was established to coordinate international activities in the College of Business and Economics. The IBI draws faculty, staff, and students together to achieve excellence in the internationalization of business education, research, and service. It administers the international business curriculum and advises all international business majors. The IBI aims at encouraging the business and economics faculty, staff, and students to be involved in interesting and exciting activities in the global business.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

INTERNATIONAL BUSINESS DEGREE PROGRAM

(122 HOURS) E FYDA

Preparation for careers with multinational corporations, governmental and intergovernmental agencies both domestic and international. Students must complete 9 credits of foreign study except for students studying at WSU who reside outside the US and who attended at least one year of secondary school in a foreign country. One year of foreign language is required except for non-native speakers of English from outside the US who may substitute satisfactory TOEFL scores. Bilingual Americans may substitute satisfactory ETS scores or certification by a WSU faculty member who is a native speaker of the target language.

First Year

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<td>Engl 402 [W] or 403 [W] (GER)</td>
<td>3</td>
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<td>Foreign Language Elective</td>
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<td>Group A Electives</td>
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<td>MgtOp 340</td>
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</table>

Fourth Year

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Abroad</td>
<td>12</td>
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Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 402 [W] or 403 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>MgtOp 491 or 492</td>
<td>3</td>
</tr>
<tr>
<td>Group A Elective</td>
<td>9</td>
</tr>
</tbody>
</table>

1 For a total of 7 hours of Biological and Physical Sciences.
2 Group A Electives are: 1 Bus 415, 416 [M], 435, 453, 481, 482 [M], 492 (may not be used under both International Business and Business core), 496, 498, 499; one of Econ 416, 472, or I Bus 470. No more than 3 hours of 498 may be used.
3 Study Abroad coursework must be approved by I Bus director before it is taken.

Description of Courses

International Business Courses

I Bus

375 Aspects of Sustainable Development 3

380 [M] International Business 3

Foreign Study V 1-15 May be repeated for credit; cumulative maximum 15 hours. Prereq program approval required. Participation in approved programs of study at a foreign educational institution. F, S grading.

415 [M] Law of International Trade 3

416 [M] Public International Law 3

417 Comparative Economic Systems 3

435 International Tourism 3

453 Comparative International Management 3

470 International Trade and Finance 3

472 Economic Development 3

International Finance 3

International Marketing 3

International Dimensions of E-Commerce 3

Small Business Policy 3

Minors

International Business

I Bus 380 [M]; one of I Bus 435, 453, 496, 498, 499 (3 credits only of 498 or 499); two of the following pairs of courses: B Law 210, I Bus 415 or 416 [M]; I Bus 482, Mktg 360; Econ 102, I Bus 375, 417, 470, 472, or Ag Ec 453; Fin 325, I Bus 481. Up to 9 hours of foreign study may be substituted for the above courses. Pre-approval is required.

A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100- or 200-level only. All other course work for the minor must be WSU course work.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

INTERNATIONAL BUSINESS DEGREE PROGRAM

(122 HOURS) E FYDA

Preparation for careers with multinational corporations, governmental and intergovernmental agencies both domestic and international. Students must complete 9 credits of foreign study except for students studying at WSU who reside outside the US and who attended at least one year of secondary school in a foreign country. One year of foreign language is required except for non-native speakers of English from outside the US who may substitute satisfactory TOEFL scores. Bilingual Americans may substitute satisfactory ETS scores or certification by a WSU faculty member who is a native speaker of the target language.

First Year

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Econ 101</td>
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<tr>
<td>Engl 101</td>
<td>3</td>
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<tr>
<td>GenEd 110</td>
<td>3</td>
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<tr>
<td>Math 201</td>
<td>3</td>
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<tr>
<td>Tier I Science</td>
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Second Term

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>Biological Sciences [B]</td>
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<tr>
<td>Econ 101</td>
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<td>GenEd 111</td>
<td>3</td>
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<td>Intercultural [I,L,G,K]</td>
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<td>Math 202</td>
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Second Year

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Acctg 230</td>
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<td>Physical Sciences [P] (GER)</td>
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<td>Pol S Elective</td>
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<tr>
<td>Acctg 231</td>
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<td>B Law 210</td>
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<td>MgtOp 215</td>
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<td>Oral Com [C] (GER)</td>
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<tr>
<td>Soc or Psych [S,K] (GER)</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Third Year

First Term

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>300-400-level Elective</td>
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<tr>
<td>Fin 325</td>
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<td>I Bus 380 [M]</td>
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<td>MgtOp 301</td>
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<td>Mktg 360</td>
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Second Term

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1 For a total of 7 hours of Biological and Physical Sciences.
2 Group A Electives are: 1 Bus 415, 416 [M], 435, 453, 481, 482 [M], 492 (may not be used under both International Business and Business core), 496, 498, 499; one of Econ 416, 472, or I Bus 470. No more than 3 hours of 498 may be used.
3 Study Abroad coursework must be approved by I Bus director before it is taken.
496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.
498 International Business Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.
580 International Business Management 3 Decision making in the international environment; political, cultural, and economic risk management.
581 International Finance 3 Prereq Fin 502, I Bus 380 or 580. Principles of international finance; financial management of multinational corporations; international investments.
582 International Marketing Management 3 Prereq Mktg 505. Principles of international marketing, marketing decision making in international environments, problems of adapting marketing programs to international markets.
595 Seminar in Research and Theory Development 3 Theory development and research on business in a global context.
596 Doctoral Topics 1 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Advanced topics in international business.
600 Special Projects or Independent Study Variable credit. S, F grading.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Management and Operations

www.cbe.wsu.edu/mgtops/
Todd 342
509-335-7527
Professor and Department Chair, R. Reed; Professors, S. Ahn, B. Chen, J. Cullen, S. Fotopoulos, J. Goodstein, D. Lenak, T. Tripp, M.C. Wang; Associate Professors, T. Baker, K. Butterfield, K. Kuhn, C. Munson; Assistant Professors, J. Arthur, M. Grays, S. Shin, D. Stewart, L. Trevino, K. Wade.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

MANAGEMENT & OPERATIONS DEGREE PROGRAM (120 HOURS) § FYDA

Students may emphasize preparation for one of three careers in this major: (1) careers as production executives in manufacturing and enterprises and for other administrative positions in business and government for which production training is useful and desirable; (2) careers for which an understanding of international business is desirable; and (3) careers in management which require an understanding of people in organizations as well as the production function.

First Year
First Term
Econ 101 [S] or 102 [S] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 201 3
Tier I Science [Q] (GER) 3
Second Term
Biological Science [B] (GER) 3 or 4
Econ 101 [S] or 102 [S] (GER) 3
Intercultural [I,G,K] (GER) 3
Math 202 [N] (GER) 3
MIS 250 3
Second Year
First Term
300-400 level Elective 3
Acctg 230 3
Arts & Humanities [H,G] (GER) 3
GenEd 111 [A] (GER) 3
Physical Sciences [P] (GER) 3 or 4
Second Term
Acctg 231 3
B Law 210 3
MgtOp 215 4
Oral Com [C] (GER) 3
Soc or Psych [S] (GER) 3
Complete Writing Portfolio
Third Year
First Term
300-400 level Elective 3
Fin 325 3
MgtOp 301 3
Mktg 360 3
Elective 3
Second Term
300-400 level Elective 3
Engl 402 [W] or 403 [W] (GER) 3
MgtOp 340 3
MgtOp 401 [M] 3
Pol S Elective 3
Fourth Year
First Term
MgtOp 491 or 492 3
MgtOp Track Electives 9
Elective 3
Second Term
MgtOp Track Electives 9
Tier III [T] Course (GER) 3
Elective 3

1 For a total of 7 hours of Biological and Physical Sciences
2 For students selecting the Operations Management track, at least four of the MgtOp 300-400 courses electives must be from MgtOp 412, 418, 440, 452, 470. For those selecting the Organization Management track at least four of the MgtOp 300-400 courses must be from MgtOp 315, 450, 453, 455, 456, 483, 485, 487, 489.

Minors

Business Administration
Not more than three from Acctg 230, 231; B Law 210; Econ 101, 102; MgtOp 101, 215. Not less than three from Fin 325, 345, 350; I Bus 380; MIS 372; Mktg 360.
A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100- or 200-level only. All other coursework for the minor must be WSU coursework.

Human Resource/Personnel
MgtOp 215 or Psych 311; MgtOp 301, 401[M], 450, 455, or 456[M].
A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100- or 200-level only. All other coursework for the minor must be WSU coursework.

Description of Courses

Management and Operations Courses

MgtOp

100 Doctoral Topics 3 Advanced topics in management. May be repeated for credit; cumulative maximum 15 hours.

101 Introduction to Business 3 Introduction to the practice of business with explanations of business environments, strategy, organization, functional areas, terminology, processes, tasks and ethics. Credit not allowed for MgtOp 101 if credit already earned in MgtOp 301 and/or Mktg 360.

215 Statistics 4 (3-3) Prereq Math 201. Data presentation, probability, distributions, inferences, and linear regression as applied to business and economics.

301 Principles of Management and Organization 3 Principles of management and administration aimed at improving effectiveness of all types of organizations. Credit not allowed for MgtOp 101 if credit already earned in MgtOp 301.

315 [S,D] Women in Management and Leadership 3 Same as W St 315.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>401 [M]</td>
<td>Leadership Skills for Managers</td>
<td>3 PreReq MgtOp 301. Leadership, motivation, team building, group dynamics, interpersonal and group conflict, and job design</td>
</tr>
<tr>
<td>418</td>
<td>Quality Improvement for Management</td>
<td>3 PreReq MgtOp 215. Total quality management as used in industries; philosophy of Deming and others, control charts, process capability analysis, team tools.</td>
</tr>
<tr>
<td>450</td>
<td>Personnel and Human Resources Management</td>
<td>3 PreReq MgtOp 215; 301. Policy and practice in human resource utilization, selecting, training, motivating, evaluating, and compensating employees; labor relations; EEO legislation.</td>
</tr>
<tr>
<td>451</td>
<td>Business Statistical Analyses</td>
<td>3 PreReq admission to MBA program. Advanced preparation for graduate-level business analyses, applied finite math and statistics principles.</td>
</tr>
<tr>
<td>453</td>
<td>Comparative International Management</td>
<td>3 Cross-cultural implications of management theories and approaches; the role of national culture in management theory and practice.</td>
</tr>
<tr>
<td>455 [M]</td>
<td>Staffing</td>
<td>3 PreReq MgtOp 450 or c/. Selection issues; methods of forecasting, planning, recruitment, selection; analysis of psychometric properties of tests; techniques for assessing reliability and validity.</td>
</tr>
<tr>
<td>456</td>
<td>Compensation Administration</td>
<td>3 PreReq MgtOp 450 or c/. Theoretical, research, and applied issues related to the compensation of employees.</td>
</tr>
<tr>
<td>470</td>
<td>Business Modeling with Spreadsheets</td>
<td>3 PreReq Math 202 or 220; MIS 250. Spreadsheet modeling and solution of business problems with emphasis on operations management and logistics applications.</td>
</tr>
<tr>
<td>485</td>
<td>Negotiation Skills</td>
<td>3 Bargaining skills across a broad range of business settings; experiential work. Credit not granted for both MgtOp 485 and 585.</td>
</tr>
<tr>
<td>487</td>
<td>Business Ethics</td>
<td>3 PreReq MgtOp 301. The nature and sources of ethical conflicts and dilemmas individuals and organizations confront in the business context.</td>
</tr>
<tr>
<td>489</td>
<td>Entrepreneurial Management</td>
<td>3 PreReq Econ 101, 102, Fin 325, MgtOp 301, MIS 250, Mktg 360. Philosophy and nature of entrepreneurship for all business organizations; analytical, financial and interpersonal entrepreneurial skills.</td>
</tr>
<tr>
<td>492</td>
<td>Small Business Policy</td>
<td>3 PreReq Acctg 230, B Law 210, Fin 325, MgtOp 301, Mktg 360. Application of management theory and principles to small firms; applied consulting experience with operating businesses.</td>
</tr>
<tr>
<td>496</td>
<td>Seminar</td>
<td>3 May be repeated for credit.</td>
</tr>
<tr>
<td>498</td>
<td>Internship</td>
<td>V 2-15 Cooperative educational internship with a business, government or nonprofit organization. May be repeated for credit; cumulative maximum 15 hours. S, F grading.</td>
</tr>
<tr>
<td>501</td>
<td>Management of Organizations</td>
<td>3 Leading, organizing, decision making, planning, controlling, conflict management, and behavior in work organizations.</td>
</tr>
<tr>
<td>516</td>
<td>Time Series</td>
<td>3 PreReq MgtOp 515 or Stat 443. ARIMA models; identification, estimation, diagnostics, and forecasting; seasonal adjustments, outlier detection, intervention analysis and transfer function modeling.</td>
</tr>
<tr>
<td>517</td>
<td>Quality Improvement for Management</td>
<td>3 Philosophy and evolution of quality control, control charts, process capability analysis, applications.</td>
</tr>
<tr>
<td>518</td>
<td>Techniques of Sampling</td>
<td>3 PreReq MgtOp 591. Sample surveys for business use; theory and application with emphasis on appropriate sample types and the estimation of their parameters.</td>
</tr>
<tr>
<td>519</td>
<td>Applied Multivariate Analysis</td>
<td>3 PreReq MgtOp 591 or Stat 443. Principal components, factor analysis, discriminant function, cluster analysis, multivariate normal distribution, Hotelling’s T2 and MANOVA.</td>
</tr>
<tr>
<td>540</td>
<td>Deterministic Business Models</td>
<td>3 Decision analysis, linear optimization models, nonlinear models, network analysis including PERT, and dynamic programming as applied to business.</td>
</tr>
<tr>
<td>582</td>
<td>Personnel and Human Resource Management</td>
<td>3 PreReq MgtOp 501. Human resources and personnel administration; selection, training, compensation, performance appraisal, labor relations, health and safety, EEO legislation.</td>
</tr>
<tr>
<td>583</td>
<td>Organization Design</td>
<td>3 Development and design of contemporary systems of organization and management.</td>
</tr>
<tr>
<td>585</td>
<td>Negotiation Skills</td>
<td>3 Graduate counterpart of MgtOp 485; additional requirements. Credit not granted for both MgtOp 485 and 585.</td>
</tr>
<tr>
<td>587</td>
<td>Business Ethics</td>
<td>3 Graduate-level counterpart of MgtOp 487; additional requirements. Credit not granted for both MgtOp 487 and 587.</td>
</tr>
<tr>
<td>588</td>
<td>Management of Innovation</td>
<td>3 PreReq Graduate standing. Technological transitions and technology strategy; knowledge and creativity in organizations; managing innovation processes, technical employees, and cross-functional cooperation.</td>
</tr>
<tr>
<td>589</td>
<td>Seminar in Management</td>
<td>3 PreReq admission to MBA program. Special topics in management, organization behavior, organization theory, human resource management and strategic management. May be repeated for credit; cumulative maximum 6 hours.</td>
</tr>
<tr>
<td>590</td>
<td>Strategy Formulation and Organization Design</td>
<td>3 Relationship between the formulation of strategy and the selection of effective organizational structures and systems.</td>
</tr>
<tr>
<td>591</td>
<td>Statistical Analysis for Business Decisions</td>
<td>3 PreReq Math 201, 202; MgtOp 215. Analytical skills for decision-making: data collection and analysis, sampling, inferential, regression methodologies, experimental design, time series, forecasting analysis.</td>
</tr>
<tr>
<td>593</td>
<td>Managerial Leadership and Productivity</td>
<td>3 Organizational behavior and human motivation in the workplace; organization and leadership theories, studies, projects and models leading to improved productivity.</td>
</tr>
<tr>
<td>596</td>
<td>Doctoral Topics</td>
<td>V 1-4 Advanced topics in management and operations. May be repeated for credit; cumulative maximum 15 hours.</td>
</tr>
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<td>3 Advanced topics in management and operations. May be repeated for credit; cumulative maximum 15 hours.</td>
</tr>
<tr>
<td>598</td>
<td>Research and Professional Development</td>
<td>1 Ph.D-level professional development colloquium designed to improve research, teaching, and presentation skills and to provide professional socialization. May be repeated for credit; cumulative maximum 6 hours. S, F grading.</td>
</tr>
<tr>
<td>600</td>
<td>Special Projects or Independent Study</td>
<td>Variable credit. S, F grading.</td>
</tr>
<tr>
<td>702</td>
<td>Master’s Special Problems, Directed Study, and/or Examination</td>
<td>Variable credit. S, F grading.</td>
</tr>
<tr>
<td>800</td>
<td>Doctoral Research, Dissertation, and/or Examination</td>
<td>Variable credit. S, F grading.</td>
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Schedules of Studies

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MARKETING DEGREE PROGRAM (120 HOURS) FYDA

Preparation for careers in marketing management, sales, retail management, marketing research, brand management, and promotion.

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<tr>
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<tbody>
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<tbody>
<tr>
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<td>MktgOp 301</td>
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<td>Mktg 360</td>
<td>3</td>
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<tr>
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<td>3</td>
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| Group B Elective         | 3     |
| Mktg 407 or 417          | 3     |
| Engl 402 [W] or 403 [W](GER) | 3     |

Fourth Year

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<tr>
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<tr>
<td>Group A Elective</td>
<td>3</td>
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<tr>
<td>MktgOp 491 or 492</td>
<td>3</td>
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<tr>
<td>Mktg 495 [M]</td>
<td>3</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
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<tr>
<td>Elective</td>
<td>3</td>
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</table>

1 For a total of 7 hours of Biological and Physical Sciences.

2 Group A electives are: Four from Mktg 450, 457, 461 [M], 468, 470, 477, 478 [M], 480, 482 [M], 487, 490 [M], 495, 496, 498. No more than 3 hours of 498 may be used.

3 Group B electives are: Two from Acctg 338; Econ 301, 330, 345; 1 Bus 380 [M]; MIS 375; Mktg 499; additional courses with adviser approval.

Minors

Marketing

Mktg 360; 407 or 417; four of Mktg 368, 450, 457 [M], 461 [M], 468, 470, 477, 478 [M], 480, 482 [M], 487, 490 [M], 495, 496 (3 credits), 498.

A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100-200-level only. All other course work for the minor must be WSU course work.

Description of Courses

Marketing Courses

Mktg

327 Services/Nonprofit Marketing 3 Marketing applications in the service sector. Cooperative course taught by UI (Bus 327), open to WSU students.

360 Marketing 3 Functions, methods, and problems used in marketing the principal types of goods; price policies, cost of marketing; government regulation. Credit not allowed for MktgOp 101 if credit already earned in Mktg 360.

368 Marketing Research 3 Prereq MktgOp S 215; Mktg 360. Survey and experimental methods as they relate to marketing research.

399 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

407 Consumer Behavior 3 Prereq Mktg 360. The investigation of social-psychological phenomena affecting consumer decision processes; learning theory and communication.

417 Consumer Behavior and E-Commerce 3 Prereq Mktg 360 or equivalent. Theories of social science explaining the mental, emotional, and physical activities underlying consumer behavior in traditional physical and digital environments.

450 Internet Marketing 3 Prereq Mktg 360. Case and project-based course exploring marketing’s role in the Internet and electronic commerce.

457 [M] Advanced Consumer Behavior 3 Prereq Mktg 407 or 417. Advanced theories of the cognitive, affective and behavior dimensions underlying the decisions and actions of consumers.


468 Public Policy and Marketing 3 Prereq Mktg 360. Productivity and efficiency in marketing; government regulation of marketing structure and of marketing policies and practices; consumer protection and welfare.

470 Retail Management 3 Prereq Mktg 360. Retailing system; organization, merchandising models, pricing, promotion, location, and control procedures; management decision processes.

477 Promotion Management 3 Prereq Mktg 360. Text and case approach to integrating promotion into the marketing plan; methods, organization, communications, media selection, and campaigns.

478 [M] Sales Management 3 Prereq Mktg 360. The role of selling in the marketing mix; problems in planning, organizing, evaluating and controlling the sales force.


482 [M] International Marketing 3 Same as 1 Bus 482.

487 Independent Research 3 Prereq Mktg 368, 457. May be repeated for credit; cumulative maximum 6 hours. Independent research project with faculty member including problem statement, literature review, hypotheses, data collection, and reporting of results.


495 [M] Marketing Management 3 Prereq Mktg 360; 6 hours Mktg. Analysis of marketing policy; approaches to solutions of marketing problems.

496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Mktg 360.

497 Marketing Yourself 1 Career opportunity assessment, position research, resume, application letter, interviewing skills, motivation, attitudes for success, solicitation and assessment of others.
School of Chemical Engineering and Bioengineering

www.che.wsu.edu/home
Dana 118
509-335-4332


The goal of the School of Chemical Engineering and Bioengineering at Washington State University is to educate students to analyze problems and design solutions from an engineering viewpoint, communicate the solutions effectively, and remain productive throughout their lives. When students graduate they should be able to use their education to be confident, independent engineers capable of effective problem solving.

To achieve this goal we seek to: 1) prepare BS level students for careers or further education by means of a broad educational program based in chemical engineering fundamentals, 2) prepare students to be capable of continuous learning via a variety of approaches including a balance of fundamental versus practical research, 3) facilitate interactions with regional and national industries, and 4) maintain an environment which promotes close interaction between students and faculty in teaching, mentoring, and research.

Meeting these objectives will be monitored by an annual assessment of selected activities within the school. When developing and verifying this assessment process the following outcomes, expected of our graduating students, will be considered.

We expect that our graduating students will be able to: 1) use their engineering skills within the context of a strong, fundamental general education, 2) use the fundamentals of the life and physical sciences, 3) apply a fundamental knowledge and practical understanding of chemical engineering principles, 4) continue learning, whether in a traditional educational setting or via some other route, 5) incorporate both technical and non-technical issues in problem solving, and 6) communicate effectively.

The school offers courses of study leading to the degrees of Bachelor of Science in Bioengineering, Bachelor of Science in Chemical Engineering, Master of Science in Chemical Engineering, and Doctor of Philosophy.

Chemical Engineering

The curriculum in chemical engineering provides thorough knowledge of basic science and engineering. This includes material and energy balances, chemical and physical equilibria, rate processes, and economic balances. With such training, graduates may participate in the design and operating of chemically based products or they may engage in research leading to new or improved chemical processes, products, and uses. Graduates also find rewarding work in plant operation, plant management, University teaching, sales/service, and other functions requiring chemical engineering training. Many students also use their educations in chemical engineering as preparation for other professional degrees such as medicine or law. The curriculum in chemical engineering in the College of Engineering is accredited by the Accreditation Board for Engineering and Technology (ABET).

The total number of majors in the school is restricted at the junior level.

Certification

Specific requirements for certification in chemical engineering can be obtained from the school although eligibility usually occurs at the middle of the sophomore year. Criteria for certification include overall GPA, grades earned in mathematics and physical science courses, and performance in the Ch E 201 course. A certified student earning a GPA of less than 2.0 for any two semesters is subject to decertification.

Bioengineering

Bioengineering is an engineering discipline that integrates engineering and life sciences to address issues important to human and animal well-being and to society at large. As such, the educational objective of the BS Bioengineering degree is to prepare graduates for productive employment, advanced study, or professional programs where they apply principles and methods of both engineering and life sciences to solve problems affecting human and animal health and well-being. Graduates may apply their expertise in human and animal medicine, biotechnology, or related biology-based engineering fields.

Bioengineering is one of the fastest growing disciplines in the nation. Graduates are prepared to apply engineering methods to fields of biology and medicine and to utilize biological understanding in engineering problem solving and design. With these integrated science and engineering skills, bioengineering graduates are able to make valuable contributions to human and animal health care and environments, bio-based product development, and biotechnology. At Washington State University, bioengineering cooperates with and finds applications in numerous disciplines of engineering, veterinary medicine, medical sciences, and the Spokane medical community. The bioengineering curriculum easily accommodates pre-medical, pre-dental, and pre-veterinary requirements for those students wishing to apply to professional schools in health care fields.

Certification

Students may apply for certification into the BS Bioengineering degree program after completion of the following courses: Math 171, 172; Chem 105, 106; Phys 201; ChE 201; BE 210; Biol 106 or 107. Students must be certified in bioengineering before being allowed to enroll in 300-level or 400-level required BE courses.

Transfer Students

Students who are planning to transfer to Chemical Engineering and Bioengineering at Washington State University from other institutions should coordinate their programs with the school to establish a schedule of studies leading to the bachelor’s degree. This is desirable because of sophomore professional
requirements and course sequences. A strong preparation in chemistry, mathematics, and physics is necessary prior to transfer to minimize the time required at Washington State University to complete bachelor’s degree requirements. Inquiries concerning specific questions are welcomed. Since there is a restriction on the total number of majors in the school; transfer students should make application for admission as soon as possible.

Preparation for Graduate Study

As preparation for work toward an advanced degree, a student should have completed substantially the equivalent of the above schedule of studies. A Bachelor of Science degree in Chemical Engineering from an institution accredited by ABET normally will satisfy this requirement.

Special programs are also available for students with bachelor’s degrees in chemistry or other areas of science who wish to obtain the Master of Science degree in Chemical Engineering.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

BIOENGINEERING (131 HOURS)

First Year
First Term Hours
B E 120 2
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 171 [N] (GER) 4
Second Term Hours
B E 140 1
Biol 106 [B] or 107 [B] (GER) 4
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
Math 172 4

Second Year
First Term Hours
B E 201 3
Chem 345 4
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4
Second Term Hours
Arts & Humanities [H,G] (GER) 3
B E 211 2
C E 211 3
Econ 101 or 102 [S] (GER) 3
Math 315 3
Phys 202 4

Third Year
First Term Hours
B E 320 [M] 4
Ch E 301 3
Ch E 310 3
E E 261 3
MBioS 303 4
Complete Writing Portfolio 3
Second Term Hours
B E 330 3
B E 340 4
Bioengineering elective 3
Intercultural [I,G,K] (GER) 3
Math 423 3

Fourth Year
First Term Hours
B E 410 3
B E 440 4
Bioengineering electives 6
Engl 402 [W,M] 3
Second Term Hours
B E 411 3
Bioengineering electives 9
Tier III Course [T], Humanities or Social Sciences (GER) 3

CHEMICAL ENGINEERING—GENERAL (129 HOURS) FYDA

At least 66 of the total hours required for this degree must be in 300-400-level courses.

First Year
First Term Hours
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Intercultural [I,G,K] (GER) 3
Math 171 [N] (GER) 4
Second Term Hours
Biol 106 or 107 [B] (GER) 4
Ch E 110 2
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
Math 172 4

Second Year
First Term Hours
Chem 346 or MBioS 303 3 or 4
Econ 101 [S] or Econ 102 [S] (GER) 3
Math 315 3
Phys 202 [P] (GER) 4
Second Term Hours
Ch E 211 3
Chem 346 or MBioS 303 3 or 4
Econ 101 [S] or Econ 102 [S] (GER) 3

Third Year
First Term Hours
Ch E 301 3
Ch E 310 3
Ch E 398 1
Chem 331 3
MBioS 301, 302, or 303 4
MSE 302 3
Complete Writing Portfolio 3
Second Term Hours
Ch E 321 3
Ch E 332 2
Ch E 334 2
Ch E 398 1
Chem 333 1
E E 304 2
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Math 423 3

Fourth Year
First Term Hours
Ch E 432 3
Ch E 441 3
Ch E 450 3
Ch E 475 3
Ch E 498 1
Engl 402 [W] (GER) 3
Second Term Hours
Ch E 433 [M] 2
Ch E 451 [M] 3
Ch E 498 1
Ch E Elective 3
Tech Elective 3
Tier III Course [T] (GER) 3

CHEMICAL ENGINEERING—PRE-MED (136 HOURS) FYDA

First Year
First Term Hours
Chem 105 [P] [L] 4
Engl 101 [W] 3
GenEd 110 [A] 3
Math 171 [N] 4
Tier II Elective [I], [G] or [K] 3
Second Term Hours
Ch E 110 2
Ch E 341 3
Chem 345 4
Chem 398 1
GenEd 111 [A] 3
Math 172 4

Second Year
First Term Hours
Arts & Humanities [H,G] (GER) 3
Ch E 211 3
Chem 345 or MBioS 303 3 or 4
Econ 101 [S] or Econ 102 [S] (GER) 3
Math 315 3
Phys 202 [P] (GER) 4
Second Term Hours
Ch E 211 3
Chem 346 or MBioS 303 3 or 4
Econ 101 [S] or Econ 102 [S] (GER) 3

Third Year
First Term Hours
Ch E 301 3
Ch E 310 3
Chem 331 3
MBioS 301, 302, or 303 4
MSE 302 3
Complete Writing Portfolio 3
Second Term Hours
Ch E 321 3
Ch E 332 2
Ch E 334 2
Ch E 398 1
Chem 333 1
E E 304 2
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Math 423 3

Fourth Year
First Term Hours
Ch E 432 3
Ch E 441 3
Ch E 450 3
Ch E 475 3
Ch E 498 1
Ch E Elective 3
Tech Elective 3
Tier III Course [T] (GER) 3

1 A total of 18 credits of arts and humanities, social sciences, intercultural studies, and world civilizations are required. For engineering majors, the Tier III requirement must be satisfied with a course in the arts and humanities or social sciences. Tier II courses should be selected so that any prerequisites for the Tier III course are satisfied. 2 Must be approved by advisor prior to enrollment in the class.

1 A total of 18 credits of arts and humanities, social sciences, intercultural studies, and world civilizations is required. For engineering majors, the Tier III requirement must be satisfied with a course in the arts and humanities or social sciences. Tier II courses should be selected so that any prerequisites for the Tier III course are satisfied. 2 Ch E 418, 435, 461, 465, 467, 475, 476, 481, 485, 487, 495, and 499. Of the total of 9 credits in chemical engineering electives, a cumulative total of only 3 credits is allowed in Ch E 495 and 499 combined.

1 A total of 18 credits of arts and humanities, social sciences, intercultural studies, and world civilizations is required. For engineering majors, the Tier III requirement must be satisfied with a course in the arts and humanities or social sciences. Tier II courses should be selected so that any prerequisites for the Tier III course are satisfied. 2 Ch E 418, 435, 461, 465, 467, 475, 476, 481, 485, 487, 495, and 499. Of the total of 9 credits in chemical engineering electives, a cumulative total of only 3 credits is allowed in Ch E 495 and 499 combined.
School of Chemical Engineering and Bioengineering

Second Year

First Term  Hours
ChE 201 3
Chem 345 4
Math 273 2
Phys 376 3
Tier II Elective [H] or [G] 3

Second Term  Hours
ChE 211 3
Chem 346 3
Econ 101 or 102 [S] elective 3
Math 315 3
Phys 202 4

Third Year

First Term  Hours
ChE 301 3
ChE 310 3
ChE 398 1
Chem 331 3
MBioS 301 or MBioS 302 4
MSE 302 3

Second Term  Hours
ChE 321 3
ChE 332 2
ChE 334 2
ChE 398 1
Chem 333 1
EE 304 2
Math 423 3
MBioS 303 4

Fourth Year

First Term  Hours
ChE 432 [M] 3
ChE 441 3
ChE 450 3
ChE 475 3
ChE 498 1
Engl 402 [W] 3

Second Term  Hours
ChE 433 [M] 2
ChE 451 [M] 3
ChE 498 1
ChE Elective 3
Tier III Elective 3
Zool 315 or Zool 352 3

Description of Courses

Bioengineering Courses

B E

120 Innovation in Design 2 Same as M E 120.

140 Introduction to Bioengineering 1 Seminar on current topics and issues in bioengineering; career options in bioengineering. S, F grading.

205 Bioengineering Professional Preparation and Ethics 1 Professional preparation for careers in bioengineering; ethical, social, and professional issues in bioengineering. S, F grading.

210 Bioengineering Analysis 2 (1-3) Prereq Ch E 201; Math 172, 220 or permission of instructor. Analytical problem solving, modeling and computer methods for bioengineering applications.

320 Mechanics of Biomaterials 4 (3-3) Prereq B E 210, C E 211. Composition of biological materials, mechanical and thermal properties, chemical and biological changes.

330 Bioinstrumentation 3 (2-3) Prereq B E 210; EE 261. Principles of instrumentation applicable to bioengineering systems; experimental design for measurement systems.

340 Unified Systems Bioengineering I 4 (3-3) Prereq B E 210; Ch E 301, 310; EE 261. Foundation for dynamic modeling and design of physiological systems; part one of two-semester course.

410 [M] Bioengineering Capstone Project I 3 (2-3) Prereq Engl 402 or c//; B E 340 or permission of instructor. Part I of capstone engineering design project; customer needs, design requirements, conceptual design, business assessment, project proposal, and presentation.

411 Bioengineering Capstone Project II 3 (2-3) Prereq senior status; B E 410 or permission of instructor. Detailed design and business case for a biological engineering-related process, machine, structure, or system.

420 [T] Multidisciplinary Design Project 3 (2-2) Prereq Junior status; non-engineer; permission of instructor; completion of one Tier I and three Tier II courses. Team development of technical design product with business and social considerations; coupled with B E 410/411; written and oral reporting.

425 Biomechanics 3 Prereq B E 210; ME 212 or permission of instructor. Methods for analysis of rigid body and deformable mechanics; application to biological tissue, especially bone, cartilage, ligaments, tendon and muscle. Credit not granted for both B E 425 and 525.

440 Unified Systems Bioengineering II 4 (3-3) Prereq B E 340. Continuation of B E 430; emphasis on feedback control system analysis and design, with examples from physiological systems.

481 Advanced Topics in Bioengineering V 1-3 Prereq Junior status; permission of instructor. Advanced topics in bioengineering. May be repeated for credit; cumulative maximum 6 hours.

525 Biomechanics 3 Prereq B E 210; ME 212 or permission of instructor. Graduate-level counterpart of B E 425; additional requirements. Credit not granted for both B E 425 and 525.

Chemical Engineering Courses

Ch E

110 Introduction to Chemical Engineering 2 Prereq Chem 105 and Math 171 or c//. Introduction to chemical engineering, development of problem solving skills.

201 Chemical Process Principles and Calculations 3 Prereq Chem 106; Math 172 or c//. Fundamental concepts of chemical engineering; problem-solving techniques and applications in stoichiometry, material and energy balances, and phase equilibria.

211 Process Simulation 3 Prereq Chem 106; Math 172; Math 315 or c//. Computer solutions to problems in chemical engineering processing.

277 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

298 Technical Seminar 1 May be repeated for credit; cumulative maximum 2 hours. S, F grading.

301 Chemical Engineering Thermodynamics 3 Prereq Ch E 201; Chem 331 or c//; major in Ch E. Basic concepts and laws; property relationships; compression and liquefaction; phase equilibria; reaction equilibria; applications in stagewise processing.

310 Introduction to Transport Processes 3 Prereq Ch E 201; Math 315 or c//; major in Ch E. Fundamentals of the phenomena governing the transport of momentum, energy, and mass.

321 Kinetics and Reactor Design 3 Prereq Ch E 301; Chem 331; Math 315; major in Ch E. Chemical reaction kinetics applied to the design of reactors, non-ideal flow, mixing, catalysis.

332 Fluid Mechanics and Heat Transfer 2 Prereq Ch E 201, 310, Ch E major. Design calculations, operations, and evaluation of equipment used in fluid flow, heat transfer, and evaporation.

334 Chemical Engineering Separations 2 Prereq Ch E 301, 310; 332 or c//. Design and evaluation of equipment used in continuous contacting.

398 Technical Seminar 1 May be repeated for credit; cumulative maximum 2 hours. S, F grading.

418 Materials Processing 3 Prereq Ch E 334; Chem 105, 106; Ch E major. Processing of semiconductor materials.

432 [M] Chemical Engineering Lab I 3 (1-6) Prereq Ch E 310, 321, 332, 334. Statistical design and analysis of experiments; safety; experiments in heat and mass transfer; separations, other unit operations, kinetics, control; technical reports and presentations.
433 [M] Chemical Engineering Lab II 2 (0-6) Prereq Ch E 432. Laboratory experiments in heat and mass transfer; separations, other unit operations, kinetics, control; design calculations; technical reports and presentations.

435 Modern Separation Processes 3 Prereq Ch E 301, 310, 332, 334; Ch E major. Design and operation of separation processes important to emerging technologies; bioseparations, supercritical extraction.

441 Process Control 3 Prereq BSysE 310, Ch E 211 or Ch E 310. Measuring instruments, automatic control, process and instrument characteristics and theory applied to industrial control problems.

450 Chemical Process Analysis and Design I 3 Prereq Ch E 301, 321, 334. Chemical engineering design; computer tools; safety and environmental constraints; cost and equipment optimization.


461 Introduction to Nuclear Engineering 3 Same as M E 461.

465 Integrated Envirochemical Engineering 3 Prereq Ch E 334. Application of chemical engineering principles in assessment and remediation of industrial problems in air pollution, water pollution, and solid and hazardous waste.

475 Introduction to Biochemical Engineering 3 Prereq Ch E 310, 332. Application of chemical engineering principles to the processing of biological and biochemical materials. Credit not granted for both Ch E 475 and 575.

476 Biomedical Engineering Principles 3 Prereq Ch E 301, 310. The application of chemical engineering principles to biomedical processes. Credit not granted for both Ch E 476 and 576.

477 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

481 Special Topics in Chemical Engineering V 1-3 Interfacial phenomena, high temperature materials processes, integrated circuit manufacturing, in situ destruction of hazardous waste. Credit not granted for both Ch E 485 and 585.

485 Interfacial Phenomena 3 Prereq Ch E 301, 310. Chemical and physical nature of the interface including the molecular basis for interfacial forces and resulting macroscopic phenomena. Credit not granted for both Ch E 485 and 585.

487 Food Process Engineering Design 3 Same as BSysE 482.

495 Chemical Engineering Internship 2 May be repeated for credit; cumulative maximum 4 hours. Students work full time in engineering assignments in approved industries with prior approval of advisor and industrial supervisor. S, F grading.

496 Cooperative Education Internship V 2-4 May be repeated for credit; cumulative maximum 4 hours. Off-campus internship with business, industry, or government unit. S, F grading.

498 Technical Seminar 1 May be repeated for credit; cumulative maximum 2 hours. For juniors and seniors in Ch E. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

510 Transport Processes 3 Transport of mass, energy, and momentum; unsteady and steady states as applied to chemical processing; macroscopic and microscopic analyses. Cooperative course taught jointly by WSU and UI (ChE 515).

515 Convective Heat Transfer 3 Same as M E 515.

523 Basic Concepts in Catalysis 3 (2-3) Preparation and characterization of supported heterogeneous catalysts, mechanistic interpretation of surface reactions and chemisorption, deactivation, and kinetics from lab experiments. Cooperative course taught by WSU, open to UI students (ChE 523).

527 Macroscopic Thermodynamics 3 Same as M E 527.

529 Chemical Engineering Kinetics 3 Interpretation of kinetic data and design of nonideal chemical reactors; fundamentals of heterogeneous catalysis, catalyst preparation, characterization, and theory. Cooperative course taught jointly by WSU and UI (ChE 529).

541 Chemical Engineering Analysis 2 Mathematical analysis of chemical engineering operations and processes; mathematical modeling and computer application.

546 Mass Transfer Operations 3 Diffusional and equilibrium operations. Cooperative course taught jointly by WSU and UI (ChE 546).

560 Biochemical Engineering 3 Chemical engineering applied to biological systems; fermentation processes, biochemical reactor design, downstream processing, transport phenomena in biological systems, biochemical technology. Cooperative course taught jointly by WSU and UI (ChE 560).

565 Fundamentals of Multiphase Environmental Processes 3 Prereq graduate standing. Principles of material and energy balances, reaction kinetics, phase equilibria, chemistry and microbiology governing environmental transport phenomena.

567 Current Topics in Multiphase Environmental Systems 3 Prereq graduate standing. Interdisciplinary course focused on reactions and processes at air, water, and soil interfaces in the environment.

574 Protein Biotechnology 3 Same as MBioS 574.

575 Introduction to Biochemical Engineering 3 Graduate-level counterpart of Ch E 475; additional requirements. Credit not granted for both Ch E 475 and 575.

576 Biomedical Engineering Principles 3 Graduate-level counterpart of Ch E 476; additional requirements. Credit not granted for both Ch E 476 and 576.

581 Advanced Topics in Chemical Engineering V 1-3 May be repeated for credit; cumulative maximum 9 hours. Filtration, reaction engineering, two-phase flow, non-Newtonian fluids, interfacial phenomena, fluidization, novel separations, biomedical engineering.

585 Interfacial Phenomena 3 Graduate-level counterpart of Ch E 485; additional requirements. Credit not granted for both Ch E 485 and 585.

596 Research Methods and Presentation I 2 Prereq graduate standing. Establish sound practices for graduate research and presentation of results; techniques used for performing through literature searching and establishing and testing research hypotheses.

597 Research Methods and Presentation II 2 Prereq graduate standing. Establishing sound practices for presentation of research programs and research results.

598 Research Seminar 1 May be repeated for credit. Seminar presentations on current topics in chemical engineering research. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Chemistry

www.chem.wsu.edu/

Fulmer 305

509-335-1516

Professor and Department Chair, S. Clark; Professors, H. Hill, K. Hippi, J. Hurst, J. Jones, D. Matteson, U. Mazur, K. Nash, K. Peterson, R. Ronald, J. Satterlee, J. Schenk, S. Werland, R. Willett; Associate Professors, J. Bruce, G. Crouch, A. Li, P. Meier; Assistant Professors, P. Benney, A. Clark, S. Zhou; Adjunct Faculty, J. Rutell, C. Kang, L. Wang; Scientist, B. Siems, Instructors, J. Finnegan; WSUTC Coordinator, K. Grant.

Chemistry is the fundamental science of matter, the nature of substances, and the changes occurring in them. Chemical reactions are the basis of all life on Earth. Everything we are or do depends in one way or another on chemistry. A major in chemistry prepares you for a variety of careers in industry, education, and public service, or for graduate study and research in chemistry and many related fields.

The department has excellent facilities and special equipment for study and research at both the undergraduate and graduate level. There are active research programs in both traditional and emerging...
areas of chemistry. Students in chemistry at WSU are encouraged to take advantage of its excellent facilities and faculty by beginning research projects as early as possible. Research expands experience beyond the classroom into the realm of new knowledge.

We expect that our graduating students will: 1) demonstrate their knowledge of the principals of the major subfields of chemistry, organic, analytical, physical, inorganic, and biochemistry, and be able to use it in the solution of the daily needs and future problems of the workplace and society; 2) demonstrate independence and creativity through individual work in the research laboratory; 3) be able to access, read, and critically evaluate the chemical and general scientific literature; 4) apply their skills and knowledge of chemistry within the context of a strong, fundamental general education; and 5) communicate effectively both orally and in writing.

Typical areas for research include the following:

Analytical chemistry focuses on the identification and measurement of chemical species wherever they are found. It involves the development and application of new methods of detection and measurement, the application of analytical methods in biological environments, and the use of nuclear and radio-chemical techniques in a wide range of applications.

Environmental chemistry applies knowledge of chemical interactions to the study of the environment, and is fundamental to any efforts to protect and improve environmental integrity. It involves the analysis of any materials found in the environment, whether as the result of human activity or as the result of natural processes. It focuses on the identification and measurement of chemical materials in rocks and minerals, in natural waters, and in the atmosphere.

Inorganic chemistry has as its center the study of the vast majority of the known elements and especially the transition metals, and it includes investigations into the mechanisms of electron transfer processes. It is closely related to bioinorganic chemistry which includes the study of metal-containing proteins, radiopharmaceuticals, and investigations of the role of reactive small molecule oxidizing agents in biological processes.

Materials chemistry brings the knowledge and understanding of chemistry to the study of the structure and properties of materials. It involves the study of chemical reactions occurring at surfaces by both experimental and theoretical means. It includes important phenomena such as energy transfer in light absorbing and emitting materials and it extends to the synthesis of new and improved materials.

Organic chemistry deals with the many compounds of carbon and how these compounds interact in biological systems. It includes the study of medicinal, bioorganic, mechanistic, and synthetic chemistry and how these areas may be used in areas such as elucidation of metabolic pathways, drug development in the treatment of diseases, and environmentally benign synthesis of important chemicals.

Physical chemistry applies the methods and theories of physics to the study of chemical materials. It involves theoretical studies of chemical bonding using advanced computational methods and the investigation of the structures of solids and surfaces by a variety of instrumental methods including photon spectroscopies, X-ray techniques, and surface characterization.

The Department of Chemistry is on the approved list of the American Chemical Society and offers courses of study leading to the degrees of Bachelor of Science in Chemistry, with options in professional chemistry, materials chemistry, and environmental chemistry. In addition, graduate study programs leading to the Master of Science in Chemistry and Doctor of Philosophy (Chemistry) are also offered. The Department of Chemistry offers a program leading to both a Bachelor of Science and Master of Science in Chemistry within a period of five years. Students wishing to enroll in the program must declare their intentions at the end of the junior year and begin research for the MS thesis while still undergraduates. The program is designed so that the BS degree will normally be awarded at the end of four years and the MS approximately 15 months later. In order to enter this program the student’s undergraduate record must show that the final transcript will satisfy the requirements for admission to the WSU Graduate School. Further information on this program can be obtained from the Department of Chemistry.

A student beginning undergraduate work will begin with either Chem 105 or Chem 115. Students without high school chemistry will begin their study with Chem 101 prior to taking Chem 105 or Chem 115. Additionally, if a student has completed one year of advanced placement high school chemistry and has scored 5 on the Advanced Placement Exam or International Baccalaureate Exam, this may be petitioned for as equivalency with the Chem 105 / 106 sequence. If a student has completed one year of advanced placement high school chemistry and has scored 3 or 4 on the Advanced Placement Exam or 4 on the International Baccalaureate Exam, this may be petitioned for equivalency to Chem 105.

The Department of Chemistry provides major parts of the course work leading to degrees in the Department of Biochemistry and Biophysics and the Program in Materials Science. Students whose interests span chemistry and biology or chemistry and physics should see the section on the appropriate program in this catalog.

Certification Requirements

A student may certify as a chemistry major after completing 30 credit hours, including Chem 105 and 106 (or 115 and 116), each with a grade of C or better, and Math 171.

Lab Fees

A charge for expendable laboratory supplies is made in each laboratory course.

Chemistry Options

After the beginning of the freshman year, a student interested in majoring in chemistry should consult with chemistry advisors to arrange a schedule which will permit completion of required courses in proper sequence. The Department of Chemistry offers three BS degree options depending on the career goals of the student. These options are general chemistry, environmental chemistry, and materials chemistry. Each of these options leads to a degree for which students will be certified to the American Chemical Society and prepared for entry into the workforce or to pursue a graduate degree. Regardless of which option is chosen, a grade of C or better is required in all chemistry courses to fulfill requirements for the chemistry degree.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

CHEMISTRY—GENERAL OPTION

(121 HOURS)

The requirements for all chemistry options are the same through the first semester of the junior year.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 105 [P] (GER) or 115</td>
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</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
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Second Term

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 106 [P] (GER) or 116</td>
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Second Year

<table>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<td>Chem 345</td>
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<td>Math 273</td>
<td>2</td>
</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
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Second Term

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<tbody>
<tr>
<td>Chem 346</td>
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<tr>
<td>Chem 347</td>
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<tr>
<td>MBioS 303</td>
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<tr>
<td>Phys 202 [P] (GER)</td>
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<td>Social Sciences [S,K]</td>
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Third Year

<table>
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</tr>
<tr>
<td>Chem 333</td>
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</tr>
<tr>
<td>Chem 398</td>
<td>1</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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<td>Math 220</td>
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Complete Writing Portfolio

<table>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>Chem 332</td>
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<td>Chem 334 [M]</td>
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<td>Elective</td>
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Fourth Year

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<tbody>
<tr>
<td>Chem 401</td>
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98
CHEMISTRY—MATERIALS OPTION

The requirements for all chemistry options are the same through the first semester of the junior year.

First Year

<table>
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<tr>
<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
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</tr>
<tr>
<td>Chem 105 [P]  (GER) or 115</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>Second Term</td>
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</tr>
<tr>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Chem 106 [P] (GER) or 116</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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Second Year

<table>
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<th>Hours</th>
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<tbody>
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<td>Math 273</td>
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</tr>
<tr>
<td>Phys 201 [P]  (GER)</td>
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<tr>
<td>Second Term</td>
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<td>Chem 346</td>
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<td>Chem 347</td>
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<tr>
<td>MBioS 303</td>
<td>4</td>
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<tr>
<td>Phys 202 [P]  (GER)</td>
<td>4</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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Third Year

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<th>Term</th>
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<tr>
<td>First Term</td>
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<td>Chem 398</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Math 220</td>
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<td>MSE 302</td>
<td>3</td>
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<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
<tr>
<td>Second Term</td>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>6</td>
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<tr>
<td>Chem 332</td>
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</table>

Minors

Chemistry

The minor in chemistry requires at least 17 hours from 200-level and above chemistry courses. All chemistry courses for the minor must be completed with a grade of C or better. Three hours from MBioS 303, 304, 513, or 514 and up to 2 hours of Chem 499 may be used to satisfy this requirement.

Chemistry Courses

Chem

101 [P] Introduction to Chemistry 4 (3-3) Prereq satisfactory math placement score. Basic chemical concepts; atomic theory, periodicity, reaction stoichiometry, gases, solutions, acids, basis, pH, equilibrium, kinetics, energy, applications to life sciences.

102 [P] Chemistry Related to Life Sciences 4 (3-3) Prereq Chem 101, 105, or 115 with a grade of C or better. Organic functional groups and their reactions; polymers, macro-molecules; carbohydrates, lipids, proteins, enzymes, nucleic acids, hormones, applications to life sciences.

105 [P] Principles of Chemistry I 4 (3-3) Prereq one year high school chemistry or Chem 101; Math 107 or c/. Stoichiometry, structure, gases, liquids, solids, solutions, thermodynamics, kinetics, equilibrium, volumetric, and gravimetric analysis. Credit not granted for both Chem 105 and 115.

106 [P] Principles of Chemistry II 4 (3-3) Prereq Chem 105 or 115 with a grade of C or better; Math 107 with a C or better or placement into Math 140 or higher. Acid-base, ionic, molecular, solubility, oxidation/reduction equilibria; kinetics, electrochemistry; systematic chemistry of the elements; coordination compounds. Credit not granted for both Chem 106 and 116.

115 [P] Chemical Principles Honors I 4 (3-3) Prereq permission of dept; two years high school chemistry or one year Chem and one year Phys; Math 140 or 171 or c/. Stoichiometry, bonding, structure, gases, liquids, solids, solutions, thermodynamics, chemical reactions, analysis, spreadsheets in chemistry. Credit not granted for both Chem 115 and 105.

116 [P] Chemical Principles Honors II 4 (3-3) Prereq Chem 115 with a grade of C or better or permission of dept. Descriptive inorganic chemistry, organic chemistry principles, acid/base, ionic and molecular equilibrium, electrochemistry, thermodynamics, kinetics. Laboratory interfaced with computers. Credit not granted for both Chem 116 and 106.

150 [Q] Molecules and Science 3 (2-3) Chemical basis and molecular structure of everyday materials; polymers, medicines, etc.

191 Independent Study in Modern Chemistry V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Chem 101, 105, 115, or c/. Independent study in the theory and practice of modern chemistry; written report required. S, F grading.

220 Quantitative Analysis 2 Prereq Chem 106 or 116; Req c/ in Chem 222. Theories of quantitative chemical analysis; statistical evaluation of data; chemical equilibrium; volumetric and gravimetric methods of analysis; introduction to electrochemistry.

222 Quantitative Analysis Laboratory 2 (0-6) Prereq Chem 220 or c/. Application of classical methods in volumetric and gravimetric analysis; acid-base, redox and EDTA titrations; ion-exchange chromatography; introduction to spectrophotometry.

330 Problem Solving in Physical Chemistry 1 Prereq Chem 106 or 116; Math 172 each with a grade of C or better. Quantitative methods of data analysis and chemical concept development; emphasis on multivariable, matrix, and computer methods.

331 Physical Chemistry 3 Prereq Math 172; Phys 202 each with a grade of C or better; c/ in Chem 333. Concepts of physical chemistry; basic thermodynamics; free energy and entropy; phase equilibria; properties of solutions of electrolytes and non-electrolytes.

332 Physical Chemistry 3 Prereq Chem 331 with a grade of C or better. Elementary quantum theory; molecular structure and spectra; bonding theory; reaction rates; photochemistry and radiation chemistry; energy states and statistical thermodynamics.
333 **Physical Chemistry Laboratory** 1 (0-3)
Prereq Chem 331 with a grade of C or better or c//. Experiments selected to meet the individual needs of students in biology, civil engineering, chemistry, or materials science.

334 **[M] Physical Chemistry Laboratory** 1 (0-3)
Prereq Chem 332 with a grade of C or better or c//; Chem 333 with a grade of C or better. Continuation of Chem 333. Experiments in molecular structure, atomic molecular spectroscopy, chemical kinetics.

336 **Classical Physical Chemistry** 2 Prereq Chem 331 with a grade of C or better. Concepts and applications of classical physical chemistry; transport and kinetic properties; electrochemistry; colloids; polymers and macromolecules.

338 **Environmental Physical Chemistry** 3 Prereq Chem 220, 222, Math 140 each with a grade of C or better. Physical chemistry for students in the environmental and biological sciences; emphasis on results and applications of physical chemical principles.

345 (240/340/341) **Organic Chemistry** 1 (3-3) Prereq Chem 102 or 106 with a grade of C or better. Survey of organic chemistry providing an overview of the chemistry of the functional groups.

346 (342) **Organic Chemistry II** 3 Prereq Chem 345 with a grade of C or better. Advanced concepts in organic chemistry including mechanisms and multistep-synthesis.

347 **Organic Chemistry II Laboratory** 2 (0-6) Prereq Chem 345 with a grade of C or better. Isolation, purification and identification of unknown compounds.

348 **Problem Solving in Organic Chemistry** 1 (0-2) Prereq c// with Chem 346. Problem analysis and critical thinking development in organic chemistry; to be taken with Chem 346.

349 (343) **Advanced Organic Synthesis Laboratory** 2 (0-6) Prereq Chem 345, 346 and 347 with grades of C or better.

350 **P Chemistry in Contemporary Society** 4 (3-3) Prereq junior standing. Principles and applications of chemistry in the context of contemporary society.

391 **Special Topics in Chemistry** V 1-4 May be repeated for credit; cumulative maximum 6 hours. Prereq Chem 106 and permission of instructor. Focus on areas of current chemical research.

398 **Undergraduate Seminar** 1 Rec BC/BA or Chemistry major; S, F grading.

401 **Modern Inorganic Chemistry** 3 Prereq Chem 332 with a grade of C or better or c//. Properties of substances; periodic systems; oxidation-reduction and acid-base characteristics interpreted on the basis of atomic and molecular structure.

410 **[M] Advanced Synthesis and Characterization** 3 (1-6) Prereq Chem 346 and Chem 332 each with a grade of C or better. Synthesis and characterization of organic and inorganic compounds and solid-state materials; modern synthetic technology, characterization methods, and laboratory techniques.

415 **Trace Element Analysis** 2 Rec Chem 425. Techniques for the analysis of inorganic materials at trace levels. Credit not granted for both Chem 415 and 515.

416 **Trace Organic Analysis** 2 Rec Chem 425. Methods for the determination of trace amounts of organic compounds. Credit not granted for both Chem 416 and 516.

421 **Radiochemistry and Radiotracers** 2 Prereq Chem 331 with a grade of C or better. Credit not granted for both Chem 421 and 521.

422 **Radiochemistry Laboratory** 1 (0-3) Prereq Chem 222, 331; Math 202 each with a grade of C or better. Credit not granted for both Chem 422 and 522.

424 **Activation Analysis** 2 (1-3) Prereq Chem 331 with a grade of C or better. Credit not granted for both Chem 424 and 524.

425 **Quantitative Instrumental Analysis** 2 Prereq Chem 332 or 336 with a grade of C or better or c//. Computer interfacing applicable to chemical instrumentation; principles and applications of modern chromatography, spectrophotometry and electrochemical techniques.

426 **Quantitative Instrumental Analysis Laboratory** 2 (0-6) Prereq Chem 425 with a grade of C or better or c//. Laboratory experience in modern analytical methods.

430 **Applied Spectroscopy** 2 Prereq Chem 332 with a grade of C or better. Theory and practice of photon- and electron-based spectroscopic techniques.

455 **Teaching Chemistry** 1 Prereq junior or senior standing; more than 12 hours Chem. Teaching chemistry; workshop for prospective undergraduate teaching assistants focusing on tutorials and labs.

461 **Atomic and Molecular Phenomena** 3 Prereq Chem 332, Math 273 each with a grade of C or better. Basic concepts of atomic structure and spectroscopy; quantum mechanics of atomic phenomena. Credit not granted for both Chem 461 and 561.

480 **Solid State Chemistry** 3 Prereq Chem 332 with a grade of C or better. Properties, bonding and synthesis of solid state material; crystalline and amorphous solids and coatings.

481 [M] **Environmental Chemistry I** 3 Prereq Chem 220 and 222 each with a grade of C or better. Chemistry of natural and pollutant species and their reactions in the atmospheric environment. Credit not granted for both Chem 481 and 581.

482 [M] **Environmental Chemistry II** 3 Prereq Chem 220, 222, and 332 each with a grade of C or better. Chemistry and reactions of natural and pollutant species on the aquatic environment, sediments and soils.

489 **Environmental Chemistry Project** 3 (1-6) Prereq Chem 482. Laboratory projects in environmental chemistry or environmental analytical chemistry.

490 **Current Topics in Chemistry** V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq consent of instructor. Recent advances in the understanding and application of chemical systems.

491 **Cooperative Education Internship** V 2-5 May be repeated for credit; cumulative maximum 16 hours. Off-campus internship with business, industry, or government unit coordinated through the Professional Experience Program. S, F grading.

495 **Directed Research** V 1-3 Prereq Chem 334 with a grade of C or better or c//, or permission of instructor. Introduction to research and advanced laboratory methods; practice in written and oral scientific communication.

499 **Special Problems** V 1-4 May be repeated for credit. S, F grading.

501 **Advanced Inorganic Chemistry I** 3 Rec Chem 332. Periodic table survey, typical compounds and their reactivity; models and reactivity, acid-base, oxidation-reduction, and electronic structure contributions.


503 **Advanced Topics in Inorganic Chemistry** V 1-3 May be repeated for credit. Rec Chem 501. Recent significant developments. Cooperative course taught by WSU, open to UI students (Chem 503).

504 **Organometallic Chemistry** 3 Prereq Chem 501. Structure, bonding, and reaction chemistry of organotransition metal compounds; applications to homogenous catalysis. Cooperative course taught by UI (Chem 568), open to WSU students.

506 **Industrial Practicum** 5 Prereq Chem 519; for preselected teachers. Industrial practicum for secondary chemistry teachers who are candidates for the MA degree in chemistry.

507 **Topics in Coordination Chemistry** 3 Rec Chem 501. Principles, complex ions and coordination compounds; theory of acids and bases; bonding theory, nonaqueous solvent; familiar elements; periodicity. Cooperative course taught by UI (Chem 564), open to WSU students.

508 **Topics in Inorganic Chemistry** V 1-9 Rec Chem 501. Coordination compounds; halogens; less familiar elements; cathate, ionic, nonstoichiometric compounds; chemical bonding; inorganic reaction mechanisms. Cooperative course taught by UI (Chem 565), open to WSU students.
509 Chemical Group Theory 3 Rec Chem 332. Mathematical definitions of groups and representations; applications to chemical structure and spectra, ligand field theory; chemical reactions and selection rules.

510 Introduction to Proteomics 2 Prereq graduate standing or permission of the instructor; introductory biochemistry, MBios 303 or equivalent. Techniques and applications for the analysis of the proteome.

512 Bioanalysis 2 Rec Chem 220 or 425. Methods for the measurement of biological compounds.


515 Trace Element Analysis 2 Graduate-level counterpart of Chem 415; additional requirements. Credit not granted for both Chem 415 and 515.

517 Chromatography 2 Prereq Chem 425.

518 Electrochemistry 2 Prereq Chem 425.

520 Advanced Analytical Chemistry 3 Prereq Chem 425. Statistics in chemical analysis; sampling; control of contamination and losses in analysis; electrochemical methods; separation in analysis; spectroscopic techniques.

521 Radiochemistry and Radiotracers 2 Graduate-level counterpart of Chem 421; additional requirements. Credit not granted for both Chem 421 and 521.

522 Radiochemistry Laboratory 1 (0-3) Graduate-level counterpart of Chem 422; additional requirements. Credit not granted for both Chem 422 and 522.

524 Activation Analysis 2 (1-3) Graduate-level counterpart of Chem 424; additional requirements. Credit not granted for both Chem 424 and 524.

527 Environmental Chemistry 2 Natural water chemistry, Agri processes, kinetics, thermodynamics, modeling in lake, river, and sea water.

529 Selected Topics in Analytical Chemistry V 1-3 May be repeated for credit. Selected current developments.

531 Advanced Physical Chemistry I 3 Prereq Chem 331. Classical physical chemistry including basic thermodynamics and kinetics; an introductory discussion of surface chemistry and electrochemistry.

532 Advanced Physical Chemistry II 3 Prereq Chem 332. Introduction to quantum mechanics; postulates of quantum mechanics; exact solutions and approximation methods.

534 Chemical Statistical Mechanics 3 Rec Chem S31, S32. Statistical theory of thermodynamic variables and chemical equilibrium; calculation of equilibrium properties from spectral data; fluctuations about equilibrium; quantum statistics.


536 Quantum Chemistry 3 Prereq Chem 532 or equivalent. Quantum mechanics applied to chemical problems: states of atoms and molecules, transitions and spectra, ladder operators and many electron methods.

537 Advanced Topics in Physical Chemistry V 1-3 May be repeated for credit. Selected subjects; irreversible thermodynamics; chemical bonding; NMR; ligand field theory; x-ray diffraction; neutron diffraction. Cooperative course taught by WSU, open to UI students (Chem 537).

540 Organic Reaction Mechanisms 3 Rec Chem 331, 346. The major classes of organic reaction mechanisms and their significance; kinetics and introductory theory.


544 Advanced Topics in Organic Chemistry V 1-3 May be repeated for credit. Rec Chem 540. Current research in organic chemistry. Cooperative course taught by WSU, open to UI students (Chem 544).

546 Spectroscopic Identification of Organic Compounds V 1-3 Rec Chem 346. Structural interpretation of 1H and 13C NMR, vibrational and mass spectra of organic compounds; audio-tutorial. May be repeated for credit; cumulative maximum 3 hours.

550 Special Topics in Nuclear Processes and Radioactive Waste Management V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq permission of instructor. Fundamental chemistry of the nuclear industry, chemical processing and waste management.


555 Teaching Chemistry 1 Teaching chemistry; workshops for new graduate teaching assistants in chemistry focusing on tutorials and labs.

561 Atomic and Molecular Phenomena 3 Graduate-level counterpart of Chem 461; additional requirements. Credit not granted for both Chem 461 and 561.

564 Molecular Phenomena 3 Rec Chem 461 or 561, 509; Phys 450. Phenomena which yield information on structures, energy levels, and interactions of molecules in solid, liquid, and gaseous phases.

581 Environmental Chemistry I 3 Prereq graduate standing. Graduate-level counterpart of Chem 481; additional requirements. Credit not granted for both Chem 481 and 581.

590 Introduction to Research Topics 1 Presentation and description of research areas and projects of current interest to faculty.

591 Seminar in Inorganic Chemistry 1 May be repeated for credit. Presentation and discussion of topics in inorganic chemistry taken from research in progress or current literature.

592 Seminar in Analytical Chemistry 1 May be repeated for credit; cumulative maximum 6 hours. Presentation and discussion of topics in analytical chemistry taken from research in progress or current literature.

593 Seminar in Physical Chemistry and Materials Science 1 Prereq graduate standing. May be repeated for credit; cumulative maximum 6 hours. Presentation and discussion of topics in physical chemistry and materials science taken from research in progress or current literature.

594 Seminar in Organic Chemistry 1 May be repeated for credit; cumulative maximum 6 hours. Presentation and discussion of topics in organic chemistry taken from research in progress or current literature.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
The mission of the undergraduate program of the Department of Civil and Environmental Engineering is to provide a broad and comprehensive education that prepares our students to be successful in professional practice and advanced studies. The objectives of our undergraduate program are as follows: 1) to educate and equip a new generation of civil and environmental engineers to meet future challenges and needs of our profession; 2) to foster an environment that stimulates learning, provides excellence in instruction, and provides leadership in the development of new teaching methods; 3) to promote interdisciplinary education and integration of new technology and research within the undergraduate experience; 4) to provide our students with a high quality education in basic principles and practical applications; and 5) to instill a sense of social and ethical responsibility among our graduates. Courses can be selected to provide in-depth studies in environmental, geotechnical, hydraulic, structural, and/or transportation engineering.

Design and planning are essential in the civil engineering profession. Accordingly, these activities are introduced in early Civil Engineering courses. As students advance, they face open-ended assignments with alternative solutions, feasibility studies, safety considerations, economics, social and environmental impacts, and other concerns that test their creative ability. All students complete a senior design class in which much of the earlier course work is applied.

All seniors are required to take the Fundamentals of Engineering (FE) exam prior to graduation. Two purposes of this exam are: (1) It is a required step in becoming a professional engineer; (2) It serves as an assessment tool for meeting the department's objectives.

Because of the ever-increasing knowledge required to practice at high levels of competence in the specialized branches of civil engineering, an educational preparation of five or more years of college study is becoming more important. By an appropriate choice of electives, the undergraduate curriculum may be integrated with a graduate program to provide a continuous schedule of studies leading to both the bachelor's and master's degrees.

The department offers courses of study leading to the degrees of Bachelor of Science in Civil Engineering, Master of Science in Civil Engineering, Master of Science in Environmental Engineering, and Doctor of Philosophy (Civil Engineering). The department participates in interdepartmental programs leading to the degrees of Master of Science in Environmental Science, and Master of Regional Planning.

**Schedules of Studies**

**CIVIL ENGINEERING DEGREE PROGRAM (129 HOURS)**

At least 50 of the total hours required for this degree must be in 300-400-level courses. None of the courses listed below may be taken on a pass-fail basis.

**First Year**

**First Term**
- C E 120 2
- Chem 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 171 [N] (GER) 4

**Second Term**
- Biol 103 [B] or MBioS 101 [B] (GER) 4
- ComSt 102 [C] (GER) 3
- GenEd 111 [A] (GER) 3
- M E 103 3
- Math 172 4

**Second Year**

**First Term**
- C E 211 3
- Cpt S 203 or 251 2
- Econ 101[S] or Econ 102 [S] (GER) 3
- Math 220 2
- Math 273 2
- Phys 201 [P] (GER) 4

**Second Term**
- C E 215 3
- Chem 106 [P], Geol 102 [P], or Phys 202 [P] (GER) 4
- M E 212 3
- M E 220 1
- Math 315 3
- Math 360 2

**Third Year**

**First Term**
- C E 301 3
- C E 315 3
- C E 317 [M] 3
- C E 330 3
- C E 341 3
- E E 304 or M E 301 2

**Complete Writing Portfolio**

**Second Term**
- C E 322 3
- C E 351 3
- C E 463 4
- Engl 402 [W] (GER) 3
- Intercultural [L,G,K] (GER) 3

**Fourth Year**

**First Term**
- Arts & Humanities [H,G] (GER) 3
- C E Electives 9
- C E Laboratory 3

**Second Term**
- C E 465 [M] 3
- C E 480 [M] 1
- C E Elective 9
- Tier III [T] Humanities or Social Science Course (GER) 3

1. Classes that must be completed prior to certification.
2. Strongly recommended for an Environmental Engineering emphasis.
3. Elective courses: The total credit hours for elective courses must be distributed such that at least three courses, not including the lab, are DES (design emphasis) in order for a student to qualify for a degree. C E electives including C E laboratory will be selected from at least two different areas (environmental, geotechnical, hydraulics, structural, and transportation/pavement).

**ENVIRONMENTAL EMPHASIS (ALTERNATE SENIOR YEAR)**

The alternate senior year schedule shown below is offered to those students interested in studying with an environmental engineering emphasis. This would substitute for the senior year above and complete the study schedule for the Bachelor of Science degree in Civil Engineering.

**Fourth Year**

**First Term**
- Arts & Humanities [H,G] (GER) 3
- C E 415 3
- C E 418 or 471 3
- C E Electives 6

**Second Term**
- C E 408 3
- C E 442 3
C E Elective 3

Tier III [T] Humanities or Social Sciences Course (GER) 3

1 Elective courses: The total credit hours for elective courses must be distributed such that at least three courses, not including the lab, are DES (design emphasis) in order for a student to qualify for a degree. C E electives including C E laboratory will be selected from at least two different areas (environmental, geotechnical, hydraulics, structural, and transportation/pavement).

INFRASTRUCTURE ENGINEERING EMPHASIS (ALTERNATE SENIOR YEAR)
The alternate senior year schedule shown below is offered to those students interested in studying with an infrastructure engineering emphasis. This would substitute for the senior year above and complete the study schedule for the Bachelor of Science degree in Civil Engineering.

Fourth Year

First Term

First Term Hours

Arts & Humanities [H,G] (GER) 3
C E 410 3
C E 433 or 425 3
C E 473 3
C E 474 or 4651 3

Second Term Hours

C E 400 3
C E 430 or 4651 3
C E 435 3
C E 476 or 434 3
C E 480 [M] 1
Tier III [T] Humanities or Social Sciences Course (GER) 3

1 Either course may be selected, but C E 465 is required.

STRUCTURAL ENGINEERING (ALTERNATE SENIOR YEAR)
The alternate senior year schedule shown below is offered to those students interested in studying with a structural engineering emphasis. This would substitute for the senior year above and complete the study schedule for the Bachelor of Science degree in Civil Engineering.

Fourth Year

First Term

First Term Hours

Arts & Humanities [H,G] (GER) 3
C E 430 3
C E 433 3
C E 436 or 4651 3
C E Elective 3

Second Term Hours

C E 414 3
C E 431 3
C E 434 or 4651 3
C E 435 3
C E 480 [M] 1
Tier III [T] Humanities or Social Sciences Course (GER) 3

1 Either course may be selected, but C E 465 is required.

Description of Courses

Civil Engineering Courses

C E

120 Innovation in Design 2 Same as M E 120.
174 Introduction to Meteorology and the Atmosphere

3 Introduction to meteorology, the atmospheric processes; weather, air pollution, and environmental topics.
211 Statics 3 Prereq Math 172 or c//; Phys 201 or c//. Engineering mechanics concepts; force systems; static equilibrium; centroids, centers of gravity; shear and moment diagrams; friction; moments of inertia. Cooperative course taught jointly by WSU and UI (Engr 210).
215 Mechanics of Materials 3 Prereq C E 211. Concepts of stress, strain, and their relationships; axial loads, torsion and bending; combined stress; properties of materials; columns, repeated loadings. Cooperative course taught jointly by WSU and UI (Engr 350).
301 Surveying for Engineers 3 (2-3) Prereq M E 103; Math 171. Analysis of errors in measurements; basic principles of measuring distances and angles; introduction to global positioning systems in civil engineering; principles and applications for aerial mapping techniques.
315 Fluid Mechanics 3 Prereq C E 212; Math 315. Fluid statics, laminar and turbulent flow, similitude, pipe flow, boundary layer, lift and drag and measurement techniques.
317 [M] Geotechnical Engineering I 3 (2-3) Prereq C E 215, 315 or c//. Structure, index properties, and classification of soils; compaction; effective stress; seepage; consolidation and shear strength.
322 Transportation Engineering 3 Prereq C E 260 or c//; 301. Transportation engineering; demand and performance functions; geometric design; capacity and control of transport modes.
330 Introduction to Structural Engineering 3 Prereq C E 215; Math 220. Introduction to structural analysis and design; statically determinate systems; deflections; structural loads; design philosophies.
341 Introduction to Environmental Engineering 3 Prereq Biol 102 or MBioS 101; Chem 105. Impact of pollutants on the environment; pollution sources and sinks; engineering aspects of air and water quality; introduction to pollution control.
351 Water Resources Engineering 3 Prereq C E 315. Application of fluid mechanics to hydraulic infrastructure, principles of open channel flow, and introduction to surface and ground water hydrology.
400 Highway Materials Engineering 3 (2-3) Prereq Eng 402, senior standing. Basic properties and mix designs of aggregates, asphalt, concrete and recycled materials; quality assurance, quality control.
401 [T] Global Climate Change 3 Prereq completion of one Tier I and three Tier II courses. Basic atmospheric processes; atmospheric change and climate change; global warming; impacts on society and science policy.
403 Environmental Geology 3 Same as Geol 403.
405 Geophysics 4 (3-3) Same as Geol 405.
408 Air Pollution Control Engineering 3 Prereq senior in engineering or physical sciences. Measurement and control of air pollution; engineering design calculations; equipment and process. Cooperative course taught jointly by WSU and UI (Ch E 575). Credit not granted for both C E 408 and 508.
409 Air Quality Modeling 3 Prereq one semester calculus and physics. Theory and practice of air quality modeling with an emphasis on use of EPA regulations; principles of atmospheric pollutant dispersion and air quality models.
414 Structural Design Laboratory 3 (1-6) Prereq C E 431, 433 or c//, Engl 402. Senior level requiring integration of previous course work into the execution of design projects and the assessment of experimental test data.
415 Environmental Measurements 3 (1-6) Prereq C E 341, Eng 402. Theory and laboratory measurement techniques used in analyzing environmental quality parameters. Credit not granted for both C E 415 and 515.
416 Hydraulic Engineering Laboratory 3 (1-6) Prereq C E 315, Eng 402. Experiments related to fluid flow principles and their application to hydraulic engineering.
418 Hazardous Waste Engineering 3 or 4 Prereq C E 341 or graduate standing. Hazardous waste properties, chemodynamics, and health effects; introduction to risk assessment and hazardous waste remediation. Credit not granted for both C E 418 and 518. Cooperative course taught by WSU, open to UI students (CE 435).
419 Hazardous Waste Treatment 3 Prereq C E 418. Principles of operation and application of processes in design of technologies used in hazardous waste treatment and remediation. Credit not granted for both C E 419 and 519.
425 Soil and Site Improvement 3 Prereq C E 317. Compaction theory and methods; deep densification of soils; advanced consolidation theory, preloading, vertical drains, chemical stabilization, grouting; design with geosynthetics. Credit not granted for both C E 425 and 525. Cooperative course taught by WSU, open to UI students (CE 567).
430 Analysis of Indeterminate Structures 3 Prereq C E 330. Classical and matrix-stiffness methods for the analysis of trusses, beams, and frames; computer applications.
431 Structural Steel Design 3 Prereq C E 330. Design of steel structures by load and resistance factor design (LRFD); behavior and design of beams, columns, tension members and connections.
### 433 Reinforced Concrete Design
- Prereq: CE 330. Behavior, analysis, and design of reinforced concrete structures; flexure; shear; bond; serviceability requirements; design of beams, columns, and slabs.

### 434 Prestressed Concrete and Reinforced Masonry Design
- Prereq: CE E 433. Behavior, analysis, and design of pretensioned and post-tensioned prestressed concrete structures; behavior and design of reinforced masonry structures. Credit not granted for both C E 434 and 534. Cooperative course taught by WSU, open to UI students (CE 442).

### 435 Foundations
- Prereq: CE E 317. Site investigation; bearing capacity, settlement and design of shallow foundations, piles and piers; design of retaining walls. Cooperative course taught by WSU, open to UI students (CE 461).

### 436 Design of Timber Structures
- (2-3) Prereq: CE E 330. Engineering properties of wood products; analysis and design connection details, durability and moisture effects; lumber, plywood, glulam, poles, adhesives. Cooperative course taught by WSU, open to UI students (CE 443).

### 442 Water and Wastewater Treatment Design
- Prereq: CE E 341; major in engineering or environmental science. Water and wastewater treatment processes and design.

### 450 Hydraulic Engineering Design
- Prereq: CE E 351. Hydraulic design and planning of facilities associated with gravity controlled and pressurized flow. Cooperative course taught jointly by WSU and UI (CE 422).

### 451 Open Channel Flow
- Prereq: CE E 351. Steady, non-uniform flow; controls and transitions in fixed-bed channels. Credit not granted for both CE 451 and 551.

### 460 Advanced Hydrology
- Prereq: CE E 351. Components of the hydrologic cycle; conceptual models; watershed characteristics; probability/statistics in data analysis; hydrographs; computer models; and design applications. Credit not granted for both CE 460 and 560.

### 462 Engineering Law and Contracts
- Development of law, courts, and ethics; law on contracts, agency, sales, property, and patterns; specifications; preparation of contract documents. Cooperative course taught by UI (CE 484), open to WSU students.

### 463 Engineering Administration
- Engineering economy; annual cost, present worth, rate of return, and benefit-cost ratio in engineering decision making; basic contract law. Cooperative course taught jointly by WSU and UI (CE 386).

### 464 Construction Management
- Job scheduling, job planning, project control, records and policies, and construction equipment.

### 465 (M) Integrated Civil Engineering Design
- (1-6) Prereq senior in civil engineering. Civil engineering applications to planning and design; problem synthesis, data analysis, decision making and reporting.

### 473 Pavement Design
- Prereq: CE E 215, 317; Econ 101 or 102, Math 360; c/c in CE E 322. Systems approach to managing pavements; evaluation, design, alternative design selection and characterization of pavement materials. Cooperative course taught jointly by WSU and UI (CE 475).

### 474 Intermediate Transportation Engineering
- (2-3) Prereq: CE E 322. Fundamentals of geometric design and traffic engineering for urban and rural highways. Cooperative course taught by UI (CE 474), open to WSU students.

### 475 Groundwater
- (2-3) Same as Geol 475.

### 480 [M] Ethics and Professionalism
- Prereq senior status. Professional aspects of civil engineering.

### 495 Engineering Internship
- V 1-4. May be repeated for credit; cumulative maximum 4 hours. By interview only. Placement in a professional, governmental, or industrial situation for specialized or general experience. S, F grading.

### 498 Special Topics in Civil Engineering
- V 1-4. Contemporary topics in civil engineering. May be repeated for credit; cumulative maximum 6 hours.

### 501 Advanced Topics in Transportation Engineering
- V 2-4. May be repeated for credit; cumulative maximum 9 hours. Prereq: CE E 322; statistics course. Analysis, planning, design, and evaluation of transportation modes and systems. Cooperative course taught jointly by WSU and UI (CE 571).

### 506 Design and Construction of Water Wells
- Analysis of geologic and engineering factors important in design, construction, and maintenance of water wells. Cooperative course taught by UI (Hydr E 575), open to WSU students.

### 508 Air Pollution Control Engineering
- Prereq: CE E 484. Graduate-level counterpart of C E 408; additional requirements. Credit not granted for both CE 484 and 508.

### 509 Numerical Modeling of Geomaterials
- Prereq graduate student in geotechnical engineering or related field, or by interview. Modeling of the response of geomaterials to changes in imposed stresses or strains under both static and dynamic conditions.

### 510 Advanced Geomaterial Characterization
- Advanced mechanics of geomaterial including elasticity, shear strength, stress/strain and time-dependent behavior, dynamic properties, and development of mechanistic binder models.

### 511 Advanced Topics in Geotechnical Engineering
- V 2-4. May be repeated for credit; cumulative maximum 9 hours. Prereq CE 317. Soil dynamics, geotechnical earthquake engineering, theoretical soil mechanics, numerical methods in soil mechanics, and geohydrology. Engineering geology, cold regions geoenvironmental engineering. Cooperative course taught jointly by WSU and UI (CE 569).

### 512 Dynamics of Structures
- Equations of motion, free vibration, damping mechanisms, harmonic, impulse, and seismic loading; shock and seismic response spectra. Coefficient analysis, and frequency domain analysis, modal analysis, structural dynamics in building codes. Cooperative course taught jointly by WSU and UI (CE 543).

### 514 Advanced Mechanics of Materials
- Elastic stress-strain relations, shear center, asymmetrical bending, curved beams, elastic stability, elastically supported beams, energy methods, thin plates, shells. Cooperative course taught jointly by WSU and UI (CE 510/ME 539).

### 515 Environmental Measurements
- (1-6) Graduate-level counterpart of C E 415; additional requirements. Credit not granted for both C E 415 and 515.

### 517 Mechanics of Sediment Transport
- Cohesive and non-cohesive sediments; initiation of sediment motion; sediment transport; suspended and bed load entrainment; models of sediment transport for alluvial and gravel bed streams, sediment-flow interaction; river morphology and ecological restoration.

### 518 Hazardous Waste Engineering
- or 4 Prereq graduate standing. Graduate-level counterpart of C E 418; additional requirements. Credit not granted for both C E 418 and 518.

### 519 Hazardous Waste Treatment
- Prereq C E 518. Graduate-level counterpart of C E 419; additional requirements. Credit not granted for both C E 419 and 519.

### 521 Fundamentals of Fluid Flow
- Prereq: CE E 315 or M E 303. Fundamental equations of compressible viscous flow, Newtonian viscous-flow equations, laminar boundary layers, stability of laminar flows, incompressible turbulent flow.

### 524 Geotechnical Earthquake Engineering
- Faulting and seismicity; site response analysis; influence of soil on ground shaking; soil liquefaction; probabilistic seismic hazard assessment; seismic earth pressures; seismic slope stability. Cooperative course taught by WSU, open to UI students (CE 566).

### 525 Soil and Site Improvement
- Graduate-level counterpart of C E 425; additional requirements. Credit not granted for both CE 425 and 525. Cooperative course taught by WSU, open to UI students (CE 567).

### 527 Advanced Soil Mechanics
- Prereq CE E 317. Effective stresses and lateral earth pressures; interrelationships of applied stresses, permeability, strain and shear strength of soils. Cooperative course taught by UI (CE 561), open to WSU students.
528 Advanced Foundation Engineering 3 Prereq C E 317. Consolidation theories, bearing capacity, and settlements of foundations, pile group behavior, theory of subgrade reaction, materials foundations, laterally loaded piles. Cooperative course taught by UI (CE 562), open to WSU students.

529 Soil Dynamics 3 Prereq graduate standing. Vibration theory; analysis of machine vibrations; wave propagation through soils; dynamic loading of soils; liquefaction. Cooperative course taught by UI (CE 565), open to WSU students.

530 Advanced Design of Steel Structures 3 Prereq C E 431. Plate girder design; local and global buckling; plastic collapse analysis; shear and Moment-resisting connections; eccentrically-loaded connections. Cooperative course taught jointly by WSU and UI (C E 542).

531 Probability and Statistical Models in Engineering 3 Engineering applications of probability and statistics; Monte Carlo simulation; model estimation and testing; probabilistic characterizations of loads and material properties; risk and reliability analyses. Cooperative course taught jointly by WSU and UI (CE 541).

532 Finite Elements 3 Theory of finite elements; applications to general engineering systems considered as assemblages of discrete elements. Cooperative course taught jointly by WSU and UI (CE 546).

533 Advanced Reinforced Concrete Design 3 Prereq C E 433. Composite design; slab design; limit state design; footings; retaining walls; deep beams; brackets and corbels; torsion; seismic design; shear walls. Cooperative course taught by WSU, open to UI students (CE 547).

534 Prestressed Concrete and Reinforced Masonry Design 3 Graduate-level counterpart of C E 434; additional requirements. Credit not granted for both C E 434 and 534. Cooperative course taught by WSU, open to UI students (CE 442).

535 Advanced Finite Elements 3 Prereq graduate standing. Plate and shell analysis; nonlinear solution methods for finite strain/rotation and nonlinear materials.

536 Nondestructive Testing of Structural Materials 3 Principles of nondestructive testing applied to wood-based materials, steel, concrete, and masonry. Cooperative course taught by WSU, open to UI students (ForP 535).

537 Advanced Topics in Structural Engineering 3 May be repeated for credit; cumulative maximum 9 hours. Elastic stability, plates and shells, other relevant topics. Cooperative course taught by WSU, open to UI students (CE 542).

538 Earthquake Engineering 3 Prereq C E 512. Seismology, size of earthquakes, seismic ground motion, seismic risk, behavior of structures subjected to earthquake loading seismic response spectra, seismic design codes, lateral force-resisting systems, detailing for inelastic seismic response.

539 Advanced Wood Engineering 3 Prereq CE 436. Engineering properties of wood materials; theory and design of wood composites, connections and load-sharing systems; performance criteria and durability.

540 Instrumental Analysis of Environmental Contaminants 3 (1-6) Prereq C E 415. Theory and methods of analysis of water and wastewater samples using electrochemical, spectrophotometric, and chromatographic techniques. Cooperative course taught by WSU, open to UI students (CE 530).

541 Environmental Engineering Unit Operations 3 Prereq C E 442; Math 315. Theory and design of physical and chemical unit operations of water and wastewater treatment systems. Cooperative course taught jointly by WSU and UI (CE 531).

542 Environmental Engineering Unit Processes 3 Prereq C E 541. Biochemical energetics and kinetics; biological wastewater treatment processes; nutrient removal; advanced wastewater treatment design. Cooperative course taught jointly by WSU and UI (CE 534).

543 Advanced Topics in Environmental Engineering Practice V 1-4 May be repeated for credit; cumulative maximum 9 hours. Analysis and evaluation of air/water/solid pollution problems, new measurement methods, hazardous waste treatment, global climate change, and water/wastewater treatments.

544 Wastewater Treatment System Design 3 (2-3) Prereq C E 542 or c/. Application of unit operations and processes to design of integrated treatment systems; critical review of designs. Cooperative course taught jointly by WSU and UI (CE 532).

545 Industrial Waste Problems 3 Prereq C E 542 or c/. Evaluation and feasible solutions of industrial waste problems. Cooperative course taught by WSU, open to UI students (CE 551).

546 Parameters for Synthesis of Wood Composition Materials 3 Same as MSE 546.

547 Principles of Environmental Engineering 3 Prereq C E 315, 341; Math 315. Principles of chemistry, microbiology, thermodynamics, material and energy balances, and transport phenomena, for environmental engineers.

548 Advanced Topics in Water Quality Engineering Systems V 2-4 May be repeated for credit; cumulative maximum 9 hours. Analysis and evaluation of natural water systems for transportation and control of pollutants and their associated impacts.

549 Open Channel Flow 3 Graduate-level counterpart of C E 451; additional requirements. Credit not granted for both C E 451 and 551.

550 Advanced Topics in Hydraulic Engineering V 1-3 May be repeated for credit; cumulative maximum 9 hours. Prereq C E 315. Cavi
tation, air entrainment, hydraulic machinery, similitude, mixing in rivers and estuaries, hydraulic design. Cooperative course taught by WSU, open to UI students (Hydro 527).

551 Open Channel Hydraulics 3 Graduate-level counterpart of C E 460; additional requirements. Credit not granted for both C E 460 and 560.

552 Water Resources Planning 3 Prereq C E 351. Design and feasibility studies in water supply, power, flood problems, navigation, irrigation, recreation. Cooperative course taught jointly by WSU and UI (CE 523).

553 Wastewater Treatment System Design 3 Prereq C E 415. Cavi
tation, air entrainment, hydraulic machinery, similitude, mixing in rivers and estuaries, hydraulic design. Cooperative course taught by WSU, open to UI students (CE 542).

554 Field Methods in Hydrogeology 2 (1-3) Same as Geol 569.

555 Numerical Modeling in Fluid Mechanics 3 Prereq C E 315. Fundamental concepts in development of numerical models for fluid flow with applications to steady and unsteady flows.

556 Advanced Hydrology 3 Graduate-level counterpart of C E 460; additional requirements. Credit not granted for both C E 460 and 560.

557 Water Resources Systems 3 Concepts in water development; coordination of development of other natural resources; systems approach and optimization techniques. Cooperative course taught jointly by WSU and UI (CE 523).

558 Water Resources Management 3 Prereq C E 351. Design and feasibility studies in water supply, power, flood problems, navigation, irrigation, recreation. Cooperative course taught jointly by WSU and UI (CE 524).

559 Applied Traffic Operations 3 Prereq C E 322 or permission of instructor. Fundamentals of traffic operations needed to prepare a design or evaluation of a signalized or unsignalized intersection.

560 Transportation Planning 3 Prereq by permission only. Concepts and methods of transportation planning, including network modeling, travel demand forecasting, and systems evaluation of multi-modal transportation systems.

561 Pavement Management and Rehabilitation 3 Prereq C E 322. Basics of pavement management systems development and implementation.

562 Advanced Characterization of Environmental Engineering Practice V 1-4 May be repeated for credit; cumulative maximum 9 hours. Analysis and evaluation of air/water/solid pollution problems, new measurement methods, hazardous waste treatment, global climate change, and water/wastewater treatments.

563 Wastewater Treatment System Design 3 (2-3) Prereq C E 542 or c/. Application of unit operations and processes to design of integrated treatment systems; critical review of designs. Cooperative course taught jointly by WSU and UI (CE 532).

564 Industrial Waste Problems 3 Prereq C E 542 or c/. Evaluation and feasible solutions of industrial waste problems. Cooperative course taught by WSU, open to UI students (CE 551).

565 Water Resources Planning 3 Prereq C E 351. Design and feasibility studies in water supply, power, flood problems, navigation, irrigation, recreation. Cooperative course taught jointly by WSU and UI (CE 523).

566 Environmental Engineering Unit Processes 3 Prereq C E 541. Biochemical energetics and kinetics; biological wastewater treatment processes; nutrient removal; advanced wastewater treatment design. Cooperative course taught jointly by WSU and UI (CE 534).

567 Transportation Planning 3 Prereq by permission only. Concepts and methods of transportation planning, including network modeling, travel demand forecasting, and systems evaluation of multi-modal transportation systems.

568 Advanced Characterization of Highway Materials 3 Basic and advanced level of the fundamentals of material response to static and repeated loading; emphasis on the deformation and fatigue behavior of asphalt mixtures.

569 Field Methods in Hydrogeology 2 (1-3) Same as Geol 569.

570 Meteorology 3 Prereq Math 273, Phys 201 or comparable. Basic meteorology; atmospheric thermodynamics; cloud physics, synoptic meteorology; radiative processes; climate change. Cooperative course offered by UI (Geog 504), open to WSU students.

571 Advanced Pavement Analysis 3 Prereq C E 473. Fundamentals of pavement-vehicle interaction and the mechanics of pavement response and damage.

572 Advanced Groundwater Hydraulics 3 Prereq Geol 475, Math 315. Modeling of subsurface flow in saturated, unsaturated, and multiphase systems; analytic and numerical solutions techniques; review of statistical geohydrologic methods.

573 Advanced Groundwater Geochemistry V 2-4 May be repeated for credit; cumulative maximum 4 hours. Same as Geol 579.
Edward R. Murrow School of Communication

www.libarts.wsu.edu/communication/

509-335-7333


Communication is a vital force in society. New practices and techniques in communication require that instruction and research explain these phenomena and prepare students to take their place in this field.

The curricula of the Edward R. Murrow School of Communication lead to the degrees of Bachelor of Arts in Communication, Master of Arts in Communication and Doctor of Philosophy (Communication). Students may major in communication, with an emphasis in advertising, applied intercultural communication, broadcast news, broadcast production, broadcast management, communication studies, journalism, media and the law, organizational communication, or public relations. Students may also fashion a general communication curriculum. The undergraduate program reflects a blending of professional, liberal arts, and theory and research courses.

The School cooperates with the College of Agricultural, Human, and Natural Resource Sciences in support of the agricultural communications option.

Supplementing the classrooms and laboratories of the Murrow School are the professional internship programs, campus radio and television facilities, and student publications, including a daily newspaper.

Students graduating from The Edward R. Murrow School of Communication will be able to: 1) communicate (written and verbal) clearly and succinctly to varied audiences; 2) carefully observe, interpret, and accurately portray events, information, and activities to a diverse society; 3) shape messages to reflect the differing demands and strengths of different and varied media; 4) consider the legal, social, and economic contexts in which media operate and evolve; 5) examine the role and effects of media in contemporary society; 6) understand the ethical and civic responsibilities that accompany a life long career in communication in a democratic society; 7) understand the professional required to be successful in a highly competitive industry, and 9) compete successfully in regional and national job markets.

Certification Requirements

To certify a major in communication, a student must meet the following minimum requirements:
1) Complete Com 101, 245, 270, 295, and ComSt 102; 2) Earn a grade no lower than C in Com 295. The Communication GPA and the cumulative GPA are averaged together. Students will then be placed in rank order. The top students then are certified based on how many spots are available that semester. Students transferring into the department with 55 or more hours should complete the certification requirements within two semesters. All students should certify before earning 90 credit hours.

Variable credit. S, F grading.

Enrollment in 300-400-level School of Communication courses (except Com 321 and ComSt 324) is restricted to those students who have met the requirements and have certified as a communication major or minor.

General School Requirements

Each student will complete the requirements of one of the following sequences and accumulate an emphasis of 18 hours (9 upper-division hours) in a second department. At least 75 of the 120 hours required for the Bachelor of Arts degree in Communication must be taken in other departments. Transfer students, in meeting the requirements of their chosen sequence, must take a minimum of 15 credit hours in the school.

Agricultural Communications

This is a major in the Department of Biological Systems Engineering in cooperation with the School of Communication. The student declaring this major must complete the requirements of the general agricultural curriculum and accumulate a minimum of 30 hours in the School of Communication, including any communication courses used to satisfy general agricultural requirements. Those electing this major should make that decision known as early as possible in their academic careers. The student should consult with a School of Communication advisor before registering for elective courses. Specialized programs patterned for the individual career aspirations may be developed in conjunction with the head of the School of Communication or a designated representative.

Advertising Option: Adv 380, 381 [M], 382, 480, Ag Ec 350, Com 245, 295, 409, ComSt 324 [C,M], 335.

Broadcast News Option: Bcdst 350, 360, 365 [M], 465 [M], 466, 481, Com 245, 295, 409, 415, ComSt 324 [C,M], 335.

Broadcast Production Option: Bcdst 350, 355, 360, 455, 466, 481, Com 245, 295, 409, 415, ComSt 324 [C,M], 335.

Communication Studies Option: Com 245, 295, ComSt 102, 235 [C], 302, 324 [C,M], 335, 424 [M], 435, Jour 305 [M], P R 312.

Journalism Option: Com 245, 253, 295, 409, 415, 440, 460, Jour 305 [M], 330, 425 [M].

Public Relations Option: Ag Ec 350, Com 245, 295, 409, ComSt 235 [C], 324 [C,M], 335, Jour 305 [M], P R 312, 313, 412.

580 Graduate Seminar 1 May be repeated for credit; cumulative maximum 2 hours. Lectures and reports on current developments in research and practice.

581 Environmental Engineering Analysis 2 (1-3) Prereq C E 541. Theoretical and laboratory methods for development of design criteria for environmental systems. Cooperative course taught by WSU, open to UI students (CE 534).

583 Engineering Aspects of Environmental Chemistry V 2-4 Prereq C E 442. Chemical principles as applied to water supply and pollution control engineering. Cooperative course taught by WSU, open to UI students (CE 553).

584 Environmental Microbiology 2 (1-3) or 3 (1-6) Prereq C E 583. Current techniques in environmental engineering and science used to assess the biological quality, structure, and function of ecosystems, and microbial diversity of air, terrestrial, and aquatic environments. Cooperative course taught by WSU, open to UI students (CE 538).

585 Aquatic System Restoration 3 (2-3) Prereq Chem 345 or C E 583; MBioS 101 or C E 581. Study of natural and damaged water systems with emphasis on water quality protection and restoration.

586 Bioremediation of Hazardous Waste 3 Prereq C E 584. Applications of bioremediation to in situ subsurface treatment of hazardous waste; subsurface microbial degradation as related to microbial ecology.

588 Atmospheric Turbulence and Air Pollution Modeling 3 Prereq C E 571. Physical aspects of atmospheric turbulence, theoretical developments in atmospheric diffusion, and applied computer modeling with regulatory and research models.

589 Atmospheric Chemical and Physical Processes 3 Processes of removal of pollutants from the atmosphere; radical chain reactions, particle formation, model calculations.

590 Spectroscopy and Radiative Transfer of the Atmosphere 3 Prereq by interview only. Concepts of radiative transfer and molecular spectra in the troposphere and stratosphere with applications to trace gas measurements.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
## Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

### COMMUNICATION—ADVERTISING OPTION (120 HOURS)

All degree programs require a minimum of 39 semester hours in communication. Students have three options to meet the enrichment/internship requirement: 6 hours of internship credit; 3 hours of internship credit and 3 of communication literacy or development courses; or 3 hours of communication literacy and 3 of development courses.

#### First Year

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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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<td>Second Term</td>
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#### Second Year

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<td>Apply for Certification</td>
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#### Third Year

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<td>Foreign Language, if necessary, or Electives(^2)</td>
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#### Fourth Year

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<tr>
<th>Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td></td>
</tr>
<tr>
<td>300-400-level Emphasis Elective(^1)</td>
<td>3</td>
</tr>
</tbody>
</table>

\(^1\) 18 credits in another department, 9 of which are 300-400-level.

\(^2\) Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.


### COMMUNICATION—APPLIED INTERCUTURAL OPTION (120 HOURS)

#### First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Term</td>
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</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Com 101</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Com 270</td>
<td>3</td>
</tr>
<tr>
<td>ComSt 102 [C] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Science Elective (GER)</td>
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#### Second Year

<table>
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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>3</td>
<td></td>
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<tr>
<td>Second Term</td>
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<tr>
<td>Apply for Certification</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Com 295</td>
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<td>Minor Electives</td>
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<td>Physical Sciences [P] (GER)</td>
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#### Third Year

<table>
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<td>ComSt 335</td>
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<tr>
<td>Upper-division Core(^2)</td>
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<tr>
<td>Elective</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
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</tr>
<tr>
<td>Com Elective</td>
<td>3</td>
</tr>
<tr>
<td>ComSt 435</td>
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### Fourth Year

<table>
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<tbody>
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</tr>
<tr>
<td>Adver 380 or Bdcst 360</td>
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</tr>
<tr>
<td>B Law 210 or MgtOp 360</td>
<td>3</td>
</tr>
<tr>
<td>Bdcst 350</td>
<td>3</td>
</tr>
<tr>
<td>Bdcst 481</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Bdcst 355 or 365 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Com 415</td>
<td>3</td>
</tr>
<tr>
<td>MgtOp 301</td>
<td>3</td>
</tr>
<tr>
<td>Mktg 360</td>
<td>3</td>
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</table>

\(^1\) Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.

\(^2\) Upper-division core: Com 420, 440, 450, 470, ComSt 324, 385, 401, 485, 488.

### COMMUNICATION—BROADCAST MANAGEMENT OPTION (120 HOURS)

#### First Year

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<thead>
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<tbody>
<tr>
<td>First Term</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Com 101</td>
<td>3</td>
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<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Second Term</td>
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</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Com 270</td>
<td>3</td>
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<tr>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
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#### Second Year

<table>
<thead>
<tr>
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<td>First Term</td>
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<tr>
<td>Acctg 230</td>
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<td>Com 245</td>
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<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Second Term</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
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<td>Com 295</td>
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<td>Econ 102 [S] (GER)</td>
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<tr>
<td>Foreign Language, if necessary, or Elective(^1)</td>
<td>3 or 4</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Apply for Certification</td>
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#### Third Year

<table>
<thead>
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<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Term</td>
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<tr>
<td>Adver 380 or Bdcst 360</td>
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</tr>
<tr>
<td>B Law 210 or MgtOp 360</td>
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</tr>
<tr>
<td>Bdcst 350</td>
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</tr>
<tr>
<td>Bdcst 481</td>
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</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Bdcst 355 or 365 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Com 415</td>
<td>3</td>
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<tr>
<td>MgtOp 301</td>
<td>3</td>
</tr>
<tr>
<td>Mktg 360</td>
<td>3</td>
</tr>
</tbody>
</table>
### Fourth Year

**First Term**
- Bdcst 455 or 465 [M] 3
- Bdcst 475 [M] 3
- Econ 320, 340, or Fin 325 3
- Foreign Language, if necessary, or Elective 6

**Second Term**
- Hours 3
- Com 409 3
- Com 440 3
- Internship/Enrichment 3
- Tier III Course [T] (GER) 3

### Third Year

**First Term**
- ComSt 102 [C] (GER) 3
- Com 270 3
- Foreign Language, if necessary, or Elective 3

**Second Term**
- Hours 3
- GenEd 110 [A] (GER) 3
- Social Sciences [S,K] (GER) 3
- Science Elective (GER) 4

**Third Term**
- Hours 3
- 300-400-level Emphasis Elective 6
- Bdcst 350 3
- Upper-division Core 3
- Complete Writing Portfolio

**Fourth Year**

**First Term**
- Hours 6
- Degree Program Courses 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Emphasis Electives</td>
<td>6</td>
</tr>
<tr>
<td>Seminar [M]</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3</td>
</tr>
<tr>
<td>Intership/Enrichment</td>
<td>6</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Upper-division Core</td>
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</tr>
</tbody>
</table>

1. Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.

**CommUNICATION—BROADCAST NEWS/BROADCAST PRODUCTION OPTION (120 HOURS)**

### First Year

**First Term**
- Hours
  - Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - Com 101 3
  - Engl 101 [W] (GER) 3
  - GenEd 110 [A] (GER) 3

**Second Term**
- Hours
  - Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - Com 270 3
  - ComSt 102 [C] (GER) 3
  - GenEd 111 [A] (GER) 3
  - Science Elective (GER) 4

**Third Year**

**First Term**
- Hours
  - Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - Com 245 3
  - Intercultural [I,G,K] (GER) 3
  - Math Proficiency [N] (GER) 3
  - Emphasis Elective 3

**Second Term**
- Hours
  - Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - Com 270 3
  - ComSt 102 [C] (GER) 3
  - GenEd 111 [A] (GER) 3
  - Science Elective (GER) 4

**Fourth Year**

**First Term**
- Hours
  - 300-400-level Emphasis Elective 6
  - Biological Sciences [B] (GER) 4
  - Degree Core 3
  - Upper-division Core 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emphasis Electives</td>
<td>6</td>
</tr>
<tr>
<td>Seminar [M]</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3</td>
</tr>
<tr>
<td>Intership/Enrichment</td>
<td>6</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Upper-division Core</td>
<td>3</td>
</tr>
</tbody>
</table>

1. 18 credits in another department, 9 of which are 300-400-level.
2. Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
3. Upper-division core (Bdcst 481, Com 321, 409, 410, 420, 440, 450, 460, 470, 471, 481, ComSt 324, 385, 401, 435, 485, 488, Jour 405, 425)
4. For Broadcast News degree program, take Bdcst 365 [M]; for Broadcast Production, take Bdcst 355.
5. For Broadcast News degree program, take Bdcst 465 [M]; for Broadcast Production, take Bdcst 455.
6. Any seminar numbered 475 in communication.

**CommUNICATION—GENERAL OPTION (123 HOURS)**

### First Year

**First Term**
- Hours
  - Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
  - Com 101 or ComSt 102 [C] (GER) 3
  - Engl 101 [W] (GER) 3
  - GenEd 110 [A] (GER) 3
  - Social Sciences [S,K] (GER) 3

**Second Term**
- Hours
  - Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
  - Com St 102 [C] (GER) or Com 101 3
  - GenEd 111 [A] (GER) 3
  - Science Elective (GER) 4

**Third Term**
- Hours
  - Arts & Humanities [H,G] 3
  - Com 295 3
  - Emphasis Elective 3
  - Foreign Language, if necessary, or Elective 3
  - Physical Sciences [P] (GER) 4
  - Apply to Certify

**Fourth Year**

**First Term**
- Hours
  - Degree Core 6
  - Foreign Language, if necessary, or Elective 3
  - Emphasis Electives 6
  - Complete Writing Portfolio

**Second Term**
- Hours
  - 300-400-level Emphasis Elective 6
  - Biological Sciences [B] (GER) 4
  - Degree Core 3
  - Upper-division Core 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emphasis Electives</td>
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<tr>
<td>Seminar [M]</td>
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</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3</td>
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<tr>
<td>Intership/Enrichment</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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</tr>
<tr>
<td>Upper-division Core</td>
<td>3</td>
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</tbody>
</table>

1. 18 credits in another department, 9 of which are 300-400-level.
2. Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
3. Degree Core any four of the following: Com 321, ComSt 302, 324, 334, 335, 385, 401, 424, 485, 488
5. Any seminar numbered 475 in communication.

**COMMUNICATION—COMMUNICATION STUDIES OPTION (120 HOURS)**

<table>
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<td>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H,G]</td>
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</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Com 270</td>
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<tr>
<td>ComSt 102 [C] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>Science Elective (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H,G]</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td>Com 245</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<td>Com 295</td>
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<td>Emphasis Elective</td>
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<td>Foreign Language, if necessary, or Elective 3</td>
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<td>Physical Sciences [P] (GER)</td>
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<td>Degree Core</td>
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<tr>
<td>Foreign Language, if necessary, or Elective 3</td>
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<tr>
<td>Emphasis Electives</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<table>
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<th>Course</th>
<th>Hours</th>
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<td>Arts &amp; Humanities [H,G]</td>
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<td>Math Proficiency [N] (GER)</td>
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<td>Arts &amp; Humanities [H,G]</td>
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<td>Com 295</td>
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<tr>
<td>Emphasis Elective</td>
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<tr>
<td>Foreign Language, if necessary, or Elective 3</td>
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<td>Physical Sciences [P] (GER)</td>
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Edward R. Murrow School of Communication
### Fourth Year

<table>
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<tr>
<th>Semester</th>
<th>Hours</th>
<th>Emphasis Elective&lt;br&gt;300-400 level Emphasis Elective&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Emphasis Elective&lt;sup&gt;1&lt;/sup&gt;</th>
<th>General Com Core&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Foreign Language, if necessary, or Electives&lt;sup&gt;2&lt;/sup&gt;</th>
<th>General Com Core&lt;sup&gt;1&lt;/sup&gt;</th>
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<tbody>
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<td>3</td>
<td>9</td>
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<tr>
<td>Foreign Language, if necessary, or Electives&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>General Com Core&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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</tr>
</tbody>
</table>

<sup>1</sup> 18 credits in another department, 9 of which are 300-400-level.

<sup>2</sup> Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.

<sup>3</sup> General Com Core (any 9 courses at the guidance of your advisor): Com 321, Com 409, 410, 415, 420, 440, 450, 470, 471, ComSt 324, 335, 401, 402, Com 499 (max of 3 cr.)

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### Communication—Journalism Option (120 HOURS)

#### FYDA

**First Year**

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</tr>
<tr>
<td>Com 270</td>
<td>GenEd 102 [C] (GER)</td>
<td>GenEd 111 [A] (GER)</td>
<td>Science Elective (GER)</td>
<td>3</td>
<td>3</td>
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<td>Science Elective (GER)</td>
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<td>Jour 305</td>
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<td>Complete Writing Portfolio</td>
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<td>Jour 305</td>
<td>Complete Writing Portfolio</td>
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### Communication—Media and the Law Option (120 HOURS)

#### FYDA

**First Year**

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<td>Jour 305</td>
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### Communication—Organizational Option (120 HOURS)

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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Jour 305</td>
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### Fourth Year

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<th>Semester</th>
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<sup>1</sup> Students must develop an emphasis in law of 18 credits, at least 9 at the 300-400-level, to be allocated in American Government. The American Government minor requires: Pol S 101, 206, 300, 316, 317, 381, or equivalents with advisor’s written consent.

<sup>2</sup> Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.

<sup>3</sup> Students must choose a pre-professional focus of 18 credits in journalism or broadcasting. The journalism focus requires Jour 305, 425, Com 415, and two electives in the School of Communication. The broadcasting focus requires Bdcst 350, 365, 465, Com 415, and one elective in the School of Communication.

<sup>4</sup> 6 credits of elective communication courses or an internship.

<sup>5</sup> Any seminar numbered 475 in communication.

<sup>6</sup> One program capstone of either Jour 405 or Com 450.

Edward R. Murrow School of Communication
Math Proficiency [N] (GER) 3 or 4

**Second Term**
- Arts & Humanities [H,G] (GER) 3
- Com 295 3
- ComSt 235 3
- Physical Sciences [P] (GER) 4
- Social Sciences [S,K] (GER) 3
- Apply for Certification

**Third Year**

**First Term**
- Biological Sciences [B] (GER) 4
- ComSt 475 [M] 3
- Emphasis Electives 1 6
- Foreign Language, if necessary, or Elective 2 3
- Complete Writing Portfolio

**Second Term**
- 300-400-level Emphasis Elective 1 6
- ComSt 435 3
- Upper-division Core 1 3

**Fourth Year**

**First Term**
- 300-400-level Emphasis Elective 1 3
- ComSt 475 [M] 3
- P R 312 3
- Upper-division Core 1 3
- Electives 3

**Second Term**

- Foreign Language, if necessary, or Electives 2 6
- Internship or Com Electives (for enrichment) 6
- Tier III Course [T] (GER) 3

---

1 18 credits in another department, 9 of which are 300-400-level.
2 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.

**COMUNICATION—PUBLIC RELATIONS OPTION (120 HOURS)**

**First Year**

**First Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Com 101 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3

**Second Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Com 270 3
- ComSt 102 [C] (GER) 3
- GenEd 111 [A] (GER) 3
- Science Elective (GER) 4

**Second Year**

**First Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Com 245 3
- Intercultural [I,G,K] (GER) 3

**Math Proficiency [N] (GER)** 3 or 4

**Second Term**
- Arts & Humanities [H,G] (GER) 3
- Com 295 3
- Physical Sciences [P] (GER) 4
- Social Sciences [S,K] (GER) 3
- Apply for Certification

**Third Year**

**First Term**
- 300-400-level Emphasis Electives 1 6
- Jour 305 [M] 3
- Mktg 360 3
- P R 312 3
- Complete Writing Portfolio

**Second Term**
- 300-400-level Emphasis Elective 1 3
- Biological Sciences [B] (GER) 4
- Com 409 3
- P R 313 [M] 3
- Upper-division Core 1 3

**Fourth Year**

**First Term**
- Emphasis Electives 1 6
- Foreign Language, if necessary, or Elective 2 3
- Seminar 3
- Upper-Division Core 1 3

**Second Term**

- Foreign Language, if necessary, or Elective 2 3
- Internship/Enrichment 3
- P R 412 3
- Tier III Course [T] (GER) 3

---

1 18 credits in another department, 9 of which are 300-400-level.
2 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
4 Any seminar numbered 475 in communication.

**Minors**

**Communication**

The minor in communication requires a minimum of 18 hours, 9 of which must be at the 300-400 level and selected from the following courses: Adver 380, Bdcst 481, Com 101, 245, 270, 295*, 321, 340, 403, 409, 410, 415, 420, 440, 450, 460, 470, 471, ComSt 102, 185, 235, 302, 324, 334, 351, 401, 488, Jour 405, 481. Students may apply to certify in the minor after they have certified in their own major and have completed three lower-division communication courses.

*Students must apply to enroll in Com 295; entrance into other courses by permission.

**Description of Courses**

**Advertising Courses**

**Adver**

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

**380 Advertising Principles and Practices** 3 Advertising history, theory and practice by advertising agencies and organizations.


**382 Media Planning** 3 Prereq Adver 380. Media planning theories, strategies, and practices.

**475 Seminar in Advertising** 3 Prereq Com 409; for seniors and graduate students. May be repeated for credit; cumulative maximum 9 hours.

**480 Advertising Agency Operation and Campaigns** 3 Prereq Adver 381, 382, Mktg 360. Principles and functions of advertising management: campaign planning, execution, presentation and evaluation. Credit not granted for both Adver 480 and 580.

**483 Advertising Research** 3 Prereq Adver 380, 381, 382, Com 409, Mktg 360. Professional research practices in advertising.

**484 Special Topics: Study Abroad** V 1-15 May be repeated for credit. S, F grading.

**495 Advertising Professional Internship** 2 (0-6) to 12 (0-36) Prereq Adver 381 or 382; Mktg 360; By interview only. May be repeated for credit; cumulative maximum 12 hours. S, F grading.

**499 Special Problems** V 1-4 May be repeated for credit. S, F grading.

**580 Advertising Agency Operation and Campaigns** 3 Prereq Adver 381, 382, Mktg 360. Graduate-level counterpart of Adver 480; additional requirements.

**581 Advertising Psychology** 3 Prereq graduate standing. Examination of social and cognitive psychological theories which have contributed to the practice of advertising.

**582 Advertising Management** 3 Prereq graduate standing. Case method approach to appraising market opportunities for the planning, development, implementation, and administration of advertising programs.

**Broadcasting Courses**

**Bdcst**

150 Introduction to Broadcast Equipment 1 (0-3) By interview only. Orientation to broadcast equipment; audio, studio television, and field television, as applied to various functions. S, F grading.

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.
350 Introduction to Telecommunications 3 (2-3) Prereq Com 295. Fundamentals of the history, structure, economics and operations of broadcasting and cable.

355 Studio TV Production 3 (1-6) Prereq Bdcst 150, 350.

360 Writing for Television 3 (2-3) Prereq Bdcst 350. Theory and practice of writing scripts: analysis of dramatic, comedic, commercial, documentary scripts; writing scripts for each genre.


455 Field TV Production 3 (1-6) Field production; editing; advanced studio production. May be repeated for credit; cumulative maximum 6 hours.


475 [M] Seminar in Broadcasting 3 By interview only. For seniors and graduate students. May be repeated for credit; cumulative maximum 9 hours.

481 Broadcast Management 3 Prereq senior standing. Credit not granted for both Bdcst 481 and 581.

483 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

495 Broadcasting Professional Internship 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. By interview only. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

565 Broadcast News Writing, Reporting, and Editing 3 (2-3) Prereq Bdcst 365. Graduate-level counterpart of Bdcst 465; additional requirements. Credit not granted for both Bdcst 465 and 565.

566 Advanced Reporting and Documentary 3 (2-3) Prereq Bdcst 465. Graduate-level counterpart of Bdcst 466; additional requirements. Credit not granted for both Bdcst 466 and 566.

581 Broadcast Management 3 Prereq senior standing. Graduate-level counterpart of Bdcst 481; additional requirements. Credit not granted for both Bdcst 481 and 581.

Communication Courses

Com


138 Freshman Special Topics 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

245 Language and Human Behavior 3 Prereq sophomore standing. Theories of language as it influences human behavior in meaning production, problem solving and construction of social reality.

253 Photocommunications 3 (2-3)

270 Introduction to Mass Communication Theory 3 Prereq sophomore standing. Theories of mass communication and how it influences behavior.

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

295 Media Writing 3 (2-3) Prereq Com 101, 245, 270; typing proficiency. Writing for the media; journalistic and persuasive writing. (The typing proficiency may be waived on an individual basis for otherwise qualified students.)

321 [I] Intercultural Communication 3 Culture and communication.

340 Ethics in Mass Media 3 Application of basic concepts of ethics to media performance in news, advertising and entertainment.

343 Media and the Canadian Experience 3 History, structure, function of Canadian media; multiculturalism, media imperialism, news production, management censorship, freedom of information. Cooperative course taught by UI (ComG 440), open to WSU students.

349 Quantitative Research 3 Measurement, questionnaire construction, sampling, data collection techniques, analysis and hypothesis testing in communication research.

410 History of Mass Communications 3 For seniors and graduate students. Credit not granted for both Com 410 and 510.

415 Law of Mass Communications 3 Prereq senior standing. Credit not granted for both Com 415 and 515.

420 New Communication Technologies 3 Prereq senior standing. New communication technologies, their impact on communication processes, access, regulation, and communication in organization/professional contexts. Credit not granted for both Com 420 and 520.

440 Media Ethics 3 Prereq senior standing. Foundations and frameworks of media ethics; case studies in assessing media performance. Credit not granted for both Com 440 and 540.

450 Mass Media and the First Amendment 3 Prereq senior standing. Theoretical and philosophical bases of press, individual and government interaction centering on First Amendment. Credit not granted for both Com 450 and 550.

453 Advanced Photography 3 (2-3) Prereq Com 253. Portfolio development/directional development of student work; advanced black and white printing techniques.

460 Mass Media Criticism 3 Prereq senior standing. Theoretical and philosophical basis for critical analysis of mass communication. Credit not granted for both Com 460 and 560.

464 Gender and the Media 3 Prereq Com 101 or W St 200. How news and entertainment media shape and reinforce societal expectations of gender; consideration of race, age, class, and sexual orientation.

470 Mass Communications Theories and Theory Construction 3 Prereq senior standing. Theories of mass communication and the process of theory construction.

471 [T,D] Stereotypes and the Media 3 Prereq completion of one Tier I and three Tier II courses. Examines portrayals of social groups in the media and the impact portrayals have on perceptions, expectations, and aspirations of members of portrayed groups and nonmembers.

481 Media Management 3 For seniors and graduate students.

483 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

495 Communication Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. By interview only. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 Introduction to Graduate Study 1 Prereq Graduate Standing, Permission of Instructor. Introduces graduate students to the pragmatics of graduate education and to research being conducted in the School of Communication. S/F grading.

501 Theory Building in Communication 3 Relationship of research to theory development; evaluation of current theory and research; planning and executing research within specified theoretical frameworks.

504 Instructional Practicum 1 May be repeated for credit; cumulative maximum 4 hours. S, F grading.

509 Quantitative Research 3 Introduction to quantitative research in communication; hypothesis development, testing; basic statistics, interpretation; field surveys, laboratory and field experiments, content analysis.

510 History of Mass Communications 3 Graduate-level counterpart of Com 410; additional requirements. Credit not granted for both Com 410 and 510.

515 Law of Mass Communications 3 Graduate-level counterpart of Com 415; additional requirements. Credit not granted for both Com 415 and 515.

517 Health Communication and Social Development 3 Explores and tests role of mediated communication in the causes of and solutions for health problems, particularly among young people.
520 New Communication Technologies 3 Graduate-level counterpart of Com 420; additional requirements. Credit not granted for both Com 420 and 520.

522 Intercultural Processes in the Transnational Context 3 Transnational cultural processes, role of communication in negotiating meanings across borders, identify and differentiate.

524 Criticism of Public Address 3 Graduate-level counterpart of ComSt 424; additional requirements. Credit not granted for both ComSt 424 and 524.

525 Rhetorical Theory 3 Major theories from classical to contemporary; analysis of symbolic action in public, political discourse.

526 Seminar in Classical Rhetoric and Its Influences 3 Same as Engl 509.

538 Seminar in Training and Development 3 May be repeated for credit; cumulative maximum 6 hours. Instructional aspects of training and consultation in organizational communication; team-building, presentational skills, conflict resolution, assessment leadership, group dynamics.

540 Media Ethics 3 Graduate-level counterpart of Com 440; additional requirements. Credit not granted for both Com 440 and 540.

550 Mass Media and the First Amendment 3 Graduate-level counterpart of Com 450; additional requirements. Credit not granted for both Com 450 and 550.

560 Mass Media Criticism 3 Graduate-level counterpart of Com 460; additional requirements. Credit not granted for both Com 460 and 560.

570 Communication Theory 3 Relevant theories and research from mass and interpersonal communication.

572 Mass Media, Social Control, and Social Change 3 Prereq graduate standing. Study of the forces that influence the media's role as an agent of social control or social change.

580 Topics in Communication 3 May be repeated for credit; cumulative maximum 12 hours. Contemporary, specialized, or technical topics in communication.

585 Interpersonal and Small Group Communication 3 Theory and research in interpersonal and small group communication.

591 Qualitative Research Methods 3 Historical, textual, and legal methodologies for theory-based evaluative and discourse studies in communication.

599 Seminar in Communication 3 May be repeated for credit; cumulative maximum 6 hours. Special topics in rhetoric, communication, and public address.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Communication Studies Courses

ComSt


185 Principles of Interpersonal Communication 3 Theory and practice of interpersonal communication; understanding and applying interpersonal information in interpersonal settings.

235 [C] Principles of Group Communication 3 Theoretical and practical aspects of communication in groups; classroom exercises and films demonstrate principles and develop skills.

251 Oral Interpretation of Literature 3 Analyzing and oral reading of prose, poetry, and drama; sharing literature with an audience.

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

302 [C] Advanced Public Speaking 3 Advanced principles of public speaking and their practical implementation for effective communication.

324 [C,M] Argumentation 3 Theory, analysis and application of written and oral arguments in everyday use.

334 Deliberative Decision-Making 3 Debate; researching the topic, case construction, analysis, and practice debating.

335 Organizational Communication 3 Prereq ComSt 235 or PrFs 512. Communication theory and organizational functions; communication influences on organizational behavior, managerial effectiveness, corporate culture, organizational power and politics.

351 Broadcast Performance/Interpretation 3 Voice and diction, interpretation of copy for broadcast.

385 Advanced Principles of Interpersonal Communication 3 Prereq ComSt 185. Theoretical literature relevant to analyzing relationships; students use this information to analyze a relationship.

401 Persuasion 3 Theories of persuasion and social action; study of strategies and techniques for the persuasive use of language and other symbols.

421 [T] Intercultural Processes in Global Contexts 3 Prereq completion of one Tier I and three Tier II courses. Global cultural changes and their influences on intercultural communication including perspectives and readings from different disciplines.

424 [M] Criticism of Public Address 3 Criticism of Public Address; Critical analysis of public messages; applications of traditional and contemporary approaches to textual analysis, from classical to postmodern theory. Credit not granted for both ComSt 424 and Com 524.

435 Advanced Organizational Communication 3 Prereq ComSt 335. Advanced concepts, models and methods for in-depth analysis of contemporary organizations. Credit not granted for both ComSt 435 and 535.

451 Readers Theatre for the Classroom 3 Principles of literature selection, scriptwriting and staging of readers theatre for classroom. Credit not granted for both ComSt 451 and 551.

475 Seminar in Communication Studies 3 By interview only. For seniors and graduate students. May be repeated for credit; cumulative maximum 9 hours.

483 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

485 Applied Interpersonal Communication 3 Prereq Com 245. Symbol systems and their interrelation in sequential organization in everyday communication. Credit not granted for both ComSt 488 and 588.

495 Communication Studies Professional Internship V 2 (0-6) to 12 (0-36) By interview only. May be repeated for credit; cumulative maximum 12 hours, S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

535 Advanced Organizational Communication 3 Prereq ComSt 335. Graduate-level counterpart of ComSt 435; additional requirements. Credit not granted for both ComSt 435 and 535.

551 Readers Theatre for the Classroom 3 Graduate-level counterpart of ComSt 451. Credit not granted for both ComSt 451 and 551.

572 Avoiding Communication 3 Prereq Com 509. Examination of theories about why people avoid communication, data relative to these theories, and extant intervention literature.

588 Structure of Conversation 3 Prereq Com 245. Graduate-level counterpart of ComSt 488; additional requirements. Credit not granted for both ComSt 488 and 588.

Journalism Courses

Jour

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

305 [M] Reporting 3 Prereq Com 295.

306 News Gathering and Dissemination 3 Prereq Com 295; certified Com major. Research and reporting of news and features, for public relations specialists.
Department of Community and Rural Sociology

COMMUNITY AND RURAL SOCIOLOGY DEPARTMENT

CRS

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

332 [S] Principles of Community Development 3 Prereq social science course, sophomore standing. Factors influencing how communities grow and decline and the ways in which social interventions influence these outcomes.


336 [S] Agriculture, Environment and Community 3 Prereq sophomore standing, completion of one social science course. Examines interdependencies between farming/ranching, the natural environment and human communities including perspectives on sustainable agriculture.

391 Special Topics V 1-3 Prereq 3 credits in social sciences, sophomore standing. Topics in rural sociology or community studies. May be repeated for credit; cumulative maximum 3 hours.

403 Agricultural Entrepreneurship, Tilling the Soil of Opportunity 3 Same as SoilS 403.

404 Small Acreage Farming and Ranching Overview 3 Same as SoilS 404.

423 Fundamentals of Participatory Research 3 Prereq sophomore standing, two social science courses. Principles/methods of involving community/interest group members in knowledge generation to understand local issues while building local capacity. Credit not granted for both CRS 423 and 523.

431 [TD] The Demographics of American Diversity 3 Prereq junior or senior standing; completion of all GERs. How trends in diversity in American society are changing over time; the demographic forces underlying these trends and debates on these.

435 Resolving Environmental Conflicts 4 (3-3) Prereq junior standing, two social science courses. Introduction to environmental conflict resolution via readings, discussions, simulation role plays and required papers; emphasis on interest-based approaches. Credit not granted for both CRS 435 and 535.

Department of Community and Rural Sociology

www.crs.wsu.edu/
Wilson 23
509-335-8623


The Department of Community and Rural Sociology offers courses and a minor in the area of community studies. These are designed to help students increase their knowledge of how community-based social structures influence human behavior, how and why community development efforts succeed or fail, how the globalization of the world’s economic, political, and social systems are affecting the quality of life in communities worldwide, and how community conflicts may be resolved successfully. The courses and the minor are intended to help prepare students for effectively living and working in communities and for working to influence community development and change.

Minors

Community Studies

The department offers a minor in community studies. The minor requires 18 hours, 3 of which must come from CRS 334, 335, 336, and 391 (on approval); 3 hours from Anth/Soc 418, H D 410, or CRS 423, 431, 435, 441, and 491, or 499 (on approval).
441 Local Impacts of Global Commodity Systems 3 Prereq junior standing, two social science courses. Theories of globalization, its social, political and economic dimensions, and its impact on people and communities. Credit not granted for both CRS 441 and 541.

480 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

491 Advanced Special Topics V 1-3 Prereq 6 credits in social sciences. Advanced topics in rural sociology or community studies. May be repeated for credit; cumulative maximum 3 hours.

499 Special Problems V 1-3 May be repeated for credit. S, F grading.

523 Fundamentals of Participatory Research 3 Prereq graduate standing, two social science courses. Graduate-level counterpart of CRS 423; additional requirements. Credit not granted for both CRS 423 and 523.

535 Resolving Environmental Conflicts 4 (3-3) Graduate-level counterpart of CRS 435; additional requirements. Credit not granted for both CRS 435 and 535.

541 Local Impacts of Global Commodity Systems 3 Prereq graduate standing, two social science courses. Graduate-level counterpart of CRS 441; additional requirements. Credit not granted for both CRS 441 and 541.

591 Graduate Special Topics V 1-3 Prereq graduate standing. Advanced topics in rural sociology or community studies. May be repeated for credit; cumulative maximum 6 hours.

600 Special Projects/Independent Study Variable credit. S. F grading.

Department of Comparative Ethnic Studies

libs.wsu.edu/ces
Wilson Hall 111
509-335-2605


Vision Statement

Comparative Ethnic Studies (CES) participants recognize, acknowledge, and oppose the negative impacts of group-based disproportionate shares of political power, social privilege, wealth, and access to quality of life indicators, such as education and health care. CES engagement provides community members with the knowledge, understanding, and motivation to be at the forefronts of social justice movements.

Mission Statement

The Department of Comparative Ethnic Studies (CES) offers a multidisciplinary, comparative, and, ultimately, a transformative approach to the study of the psycho-social, cultural, political, historical, narrative, and economic expressions and experiences of racialized groups in the United States and interconnected global communities. Through their excellence in teaching, research, and community service, CES scholars facilitate understanding of how the social constructions of race impact the social fabric of our historical and contemporary world, and prepare community members to actively and critically engage in their civic responsibilities, especially with respect to social justice.

Application of Comparative Ethnic Studies

CES offers an undergraduate major and minor. Some students choose to double-major in CES in tandem with another discipline, selecting second majors from disciplines offered across the University. A major in CES prepares students to apply their education in any number of occupations in corporate America, service industries, teaching, employment abroad, and politics. The curriculum engages students in thinking and communicating critically and analytically, thereby preparing them to continue learning in a rapidly changing technological and global world. The CES curriculum is also excellent preparation for advanced educational programs, including law, counseling, and medicine. Most importantly, CES prepares students to live and work in an increasingly global and diverse world, and to critically and actively engage in their civic responsibilities.

Role of CES within Washington State University

The Department of Comparative Ethnic Studies (CES) has a distinct function within the larger structure of Washington State University, with the responsibility for providing the WSU community with the critical understanding of the contemporary and historic developments of racialized communities, fostering an in-depth understanding of the complexities of United States culture and intersections with global perspectives and concerns, and examining social justice concerns and movements of social change. The teaching, research, and service components of CES examine the scholarly aspects of social justice, with an eye toward sophisticated awareness, understanding, verbal and written communication, activism, and transformation. The Department of CES aims to facilitate students’ and the larger campus community’s understanding of today’s racial problems by programmatic studies and by serving as a consultant in University and community concerns related to race.

Overarching Learning Goals

At the completion of their baccalaureate degree studies in the Department of Comparative Ethnic Studies, students will have the skills to:

1. Be conversant in the field of Ethnic Studies, understanding and articulating, through critically analytic verbal and written communication skills, its historical development, key concepts, theories and methods, central debates, problems, and possibilities in an increasingly global context.
2. Critique Eurocentrism, understanding prevailing Eurocentric formations on race and ethnicity as they have contributed to social conflict, and economic and political inequalities in the United States and internationally.
3. Advocate for social justice for communities of color in the Pacific Northwest, especially with respect to tribal nations and recent immigrants, and understand the regional articulations of race, gender, sexuality, class, ability, and the interconnections between corporate farming, immigration, and consumption.
4. Critically and responsibly engage in their civic responsibility as global citizens, with an enhanced critical consciousness, understanding processes and consequences of colonization and empire, and of nationalism on daily lives in the United States, and understanding perspectives connecting U.S. racialized groups to other groups across the globe.
5. Locate themselves in a complex, unequal, and often contradictory world, being reflective, and understanding and articulating their privileges and the implications of their race/ethnicity and socio-economic status.
6. Think critically about the social constructions of race over time, having a broad understanding about the relationship between race and institutional structures, and individual and collective identities, ideologies, and images, understanding difference between individual and institutional/structural racism, and issues of power, appropriation, and essentialism.
7. Appreciate the histories, significance, and possibilities of marginalized and racialized people, understanding the concept of subjective realities and construals, especially the distinction between traditional, mainstream historical narratives, and narratives from the perspectives of marginalized, racialized groups; demonstrate knowledge of major developments in ethnic formations and relations as they shape U.S. culture.
8. Be literate about popular culture, demonstrating ability to decode racial meanings of media texts; organizing and examining films, television, music, sports, and other forms of media for the deployment of race.
9. Engage the world around them critically, defining and challenging normative views and values, especially with respect to whiteness, maleness, and heterosexuality as normative systems.
10. Effect and understand the processes of resistance and social change, conceptualizing and articulating the history and processes of resistance against systems of oppression, challenging the paradigmatic assumptions of progress, and understanding the connection between social change and struggle.
11. Apply curricular knowledge and serve in internships, demonstrating preparation for careers and/or educational pursuits in graduate and professional schools.

CES programs and activities that support and enhance the curriculum

1. Internship: In an effort to institutionalize our commitment to applied education with respect to social justice issues and to stronger relationships with the community at large, desires to break down barriers between the campus and community, CES is launching an internship program in fall 2004, with the expectation that students can apply their education through service in an organization most suited to their interests. Through collaboration with community organizations, CES will be able to better
prepare students for application of their skills outside the University and for critical engagement in their civic responsibility.

2. CES Film Series: The monthly film series offers non-mainstream films and documentaries that demonstrate the constructs, theories, and general content of the CES coursework. CES scholars introduce each film, providing critical background on the context of the film, and then facilitate a discussion following the film.

3. CES Speaker Series: The CES Speaker Series brings internationally recognized individuals to WSU. It promotes the voices and perspectives of academics on artists from marginal and racialized groups. At the same time, it affords scholars in ethnic studies a broad audience. The overarching goals are education, critical reflection, and intellectual stimulation for students, faculty, and the WSU community member.

4. CES Encuentros: The Encuentros Speaker Series began in the spring of 1997, as a way of providing a space of mentorship and professional development for Chicana/o and Latina/o graduate students, who compose one of the most underrepresented groups in academia. By providing mentorship and professional development, Encuentros covers two of the most critical areas in establishing successful academic careers. Presenters come from different departments and colleges throughout WSU, allowing Encuentros to expose the entire WSU community, and more importantly, graduate students, to the importance of inter- and multidisciplinary scholarship in academia. The series is also a way of educating the WSU community about the work our graduate students are doing.

5. CES Faculty Colloquia Series: CES scholars share their most recent work with the WSU audience, facilitating discussion after their presentations.

6. Structured Student Advising: Advising is central to the mission of CES. All faculty in CES guide students through the nuances of registration, often serving as mentors for our majors and minors. All faculty have engaged in advising training and meet to discuss procedures and problems. Currently the faculty is working to develop an assessment tool that will further facilitate student advising.

7. CES Web site: The CES Web site is an updated source of information about the department courses, faculty, and activities. It is also an important source of information about issues/concerns, and current topics related to the CES program providing numerous linkages to informative Web sites and databases.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

COMPARATIVE ETHNIC STUDIES (120 HOURS) ∂ FYDA

Students majoring in Comparative Ethnic Studies complete 39 hours in CES, as outlined below, with at least one/half of all CES courses taken at the 300-400 level.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CES 201</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective</td>
<td>1</td>
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<tr>
<td>Tier I Science [Q]</td>
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Second Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>CES Cluster I or II</td>
<td>6</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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Second Year

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<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>CES Cluster I or II</td>
<td>6</td>
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<tr>
<td>Intercultural [L,G,K] (GER)</td>
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Third Year

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<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [L,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>CES 491</td>
<td>3</td>
</tr>
<tr>
<td>CES Cluster I or II</td>
<td>3</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Writing In The Major Elective [M]</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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Second Term

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>CES Cluster I or II</td>
<td>6</td>
</tr>
<tr>
<td>Writing In The Major Elective [M]</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
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</table>

Fourth Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [L,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>CES 498</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
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</table>

Second Term

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>300-400-level Electives</td>
<td>9</td>
</tr>
<tr>
<td>CES Cluster I or II</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>


Minors

Comparative Ethnic Studies

Students may complete a minor in Comparative Ethnic Studies (CES) with an option in General CES, African American Studies, American Indian Studies, Latina/o Studies, or Asian Pacific American Studies. For the minor, students are expected to fulfill all the University's requirements for graduation, as well as 18 hours of coursework in CES, 9 of which must be 300-400 level courses. Minor requirements for the ethnic group option include CES 201 plus 9 hours from one of the ethnic group sequences in Cluster I and 6 hours from Cluster II courses. Minor requirements for General CES include CES 201 plus 15 hours from a combination of Cluster I and Cluster II courses.

Description of Courses

Comparative Ethnic Studies Courses

CES

101 [I] Introduction to Comparative Ethnic Studies 3 Comparative issues in Asian American, African American, Chicana/o, and Native American cultures in the United States.

111 [S,D] Introduction to Asian Pacific American Studies 3 Examination of the social, political, economic, and cultural experiences of Asian/Pacific Americans in the historical and contemporary period.

131 [S,D] Introduction to Black Studies 3 An introduction to general knowledge concerning African Americans in the US.

151 [G] Introduction to Chicano/Latino Studies 3 Examination of the history, culture, political and economic status of Chicano/as and Latino/as in the US.

171 [G] Introduction to Native American Studies 3 Introduction to Native American studies; introductory course to contemporary native America.

198 [I] Introduction to Comparative Ethnic Studies—Honors 3 Prereq admission to Honors College. Introductions to critically analytic ethnic studies.

201 Foundations of Comparative Ethnic Studies 3 Critical examination of the history, methodology and theoretical concepts of ethnic studies.

211 [K] Asian Pacific American History 3 Historical experience of Asian/Pacific Americans since the 19th century.

212 [K] Peoples of the World 3 Same as Anth 203.

217 [K] Introduction to East Asian Culture 3 Same as Hist 275.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>220 [H,D]</td>
<td>Introduction to Multicultural Literature</td>
<td>Survey of multicultural literature including European American, African American, Chicana/o, and Native American authors.</td>
</tr>
<tr>
<td>254 [S,D]</td>
<td>Comparative Latino/a Cultures</td>
<td>Comparison of the contemporary and historical experiences of Latinos and Latinas in the United States, and their relations with other ethnic minority groups and the majority populations.</td>
</tr>
<tr>
<td>255 [S,D]</td>
<td>Chicana/o History</td>
<td>The historical development of the Chicana/o community in relation to the dynamics of race relations, class structure, ethnic identity, gender, and sexuality in American society from 1521 to the 20th century.</td>
</tr>
<tr>
<td>260 [S,D]</td>
<td>Race and Racism in US Popular Culture</td>
<td>Examines images, ideologies, and identities; introduces key concepts and methods; focuses on race, gender, sexuality and class.</td>
</tr>
<tr>
<td>298 [S,D]</td>
<td>History of Women in American Society</td>
<td>Same as Hist 298.</td>
</tr>
<tr>
<td>300 [S,M]</td>
<td>Intersections of Race, Class, Gender and Sexuality</td>
<td>Same as Pol 5 324.</td>
</tr>
<tr>
<td>303 [M]</td>
<td>Research Methods in Ethnic Studies</td>
<td>Prereq Quantitative, qualitative, and/or literary research methods and strategies particular to the study of race, ethnicity, and culture.</td>
</tr>
<tr>
<td>308 [M]</td>
<td>Cultural Politics of Sport</td>
<td>A critical examination of US sports through class, race, gender, sexuality, nationalisms and criminality.</td>
</tr>
<tr>
<td>313 [G]</td>
<td>Asian Pacific American Literature</td>
<td>3 Asian American fiction, drama, poetry, and other arts, 1900 to present; impact of Asian/Pacific American culture and experience upon these works.</td>
</tr>
<tr>
<td>314 [M]</td>
<td>Topics in Asian Pacific American Literature</td>
<td>May be repeated for credit; cumulative maximum 6 hours. Trends, themes, major writers.</td>
</tr>
<tr>
<td>331 [G]</td>
<td>African American Literature</td>
<td>3 Introduction to major issues and major works in the African American literary tradition.</td>
</tr>
<tr>
<td>332 [M]</td>
<td>Topics in African American Literature</td>
<td>3 Same as Engl 322.</td>
</tr>
<tr>
<td>335 [S]</td>
<td>Black Freedom Struggle</td>
<td>3 Historical exploration of black resistance focusing on nationwide movement that developed following World War II.</td>
</tr>
<tr>
<td>337 [S,D]</td>
<td>Black Social Psychology</td>
<td>Prereq CES 101 or 131. Approaches and perspectives in contemporary psychology that lead to a broader understanding of the social psychological functioning of African Americans.</td>
</tr>
<tr>
<td>338 [H,D]</td>
<td>Cinematic Images of Blackness</td>
<td>Prereq CES 131 or 101. Critical perspectives on the history of cinematic images of blackness; traces experiences of blacks within Hollywood as actor or artist, subject or image.</td>
</tr>
<tr>
<td>339 [I]</td>
<td>Black Politics</td>
<td>3 Same as Pol 5 324.</td>
</tr>
<tr>
<td>351</td>
<td>Spanish for Native Speakers</td>
<td>3 Same as Span 324.</td>
</tr>
<tr>
<td>354</td>
<td>Topics in Latina/o Literature</td>
<td>3 Prereq CES 101. Trends, themes and major writers in Latina/o literature.</td>
</tr>
<tr>
<td>356</td>
<td>Bilingual/Bicultural Education</td>
<td>3 Philosophical, legal, cultural, linguistic, and curricular aspects of bilingual education.</td>
</tr>
<tr>
<td>359</td>
<td>Chicana/o and Latina/o Politics</td>
<td>3 Character, role, and goals of Chicano/Latino politics; contemporary Chicano/Latino issues.</td>
</tr>
<tr>
<td>360</td>
<td>Queer Identities in Contemporary Cultures</td>
<td>3 Same as W St 369.</td>
</tr>
<tr>
<td>372 [S,D]</td>
<td>Native American Women in Traditional and Contemporary Societies</td>
<td>Prereq one of Anth 101, 214, CES 101, 171, or W St 200. Exploration of roles and activities of women in Native American societies; how traditional gender roles have developed and changed.</td>
</tr>
<tr>
<td>373 [G,M]</td>
<td>Native American Literature</td>
<td>3 Native American literature, by and about the original inhabitants, image and counter-image, with emphasis on the 20th century.</td>
</tr>
<tr>
<td>375 [K]</td>
<td>North American Indian History, Precontact to Present</td>
<td>3 Same as Hist 308.</td>
</tr>
<tr>
<td>376 [K]</td>
<td>America Before Columbus</td>
<td>3 Same as Hist 308.</td>
</tr>
<tr>
<td>377 [K]</td>
<td>Native Peoples of North America</td>
<td>3 Same as Anth 311.</td>
</tr>
<tr>
<td>378 [S,D]</td>
<td>Contemporary Native Peoples of the Americas</td>
<td>3 Same as Anth 320.</td>
</tr>
<tr>
<td>379 [H,D]</td>
<td>Native Americans in Film</td>
<td>3 Critical examination of films and videos featuring American Indians; traces the history of the Indian as subject of films and as filmmaker.</td>
</tr>
<tr>
<td>380 [S,D]</td>
<td>Immigration and Citizenship in the Global Economy</td>
<td>3 Examination of past and current notions of immigration and citizenship in North American, Asian, and European countries as defined by government officials, political organizations, community groups, and popular culture.</td>
</tr>
<tr>
<td>398 [H,D]</td>
<td>History of Women in American West</td>
<td>3 Same as Hist 398.</td>
</tr>
<tr>
<td>401</td>
<td>Seminar in Culture and Power</td>
<td>3 Complex power relations that develop among competing local, regional, national, and global culture(s).</td>
</tr>
<tr>
<td>403 [T,D]</td>
<td>Cultural Issues in Psychology</td>
<td>3 Prereq 3 hours cultural psychology; completion of one Tier I and three Tier II courses. Multidisciplinary analyses of the relationship between social-ecological and political contexts and individual and collective psychology.</td>
</tr>
<tr>
<td>404 [T,D]</td>
<td>Stereotypes and The Media</td>
<td>3 Same as Com 471.</td>
</tr>
<tr>
<td>405 [T]</td>
<td>Cultural Criticism and Theory</td>
<td>3 Prereq completion of one Tier I and three Tier II courses. Major critiques and theories of colonnialist and imperialist formations of culture.</td>
</tr>
<tr>
<td>408 [T,D]</td>
<td>Introduction to Critical Race Feminism</td>
<td>3 Same as W St 408.</td>
</tr>
<tr>
<td>411 [T,D]</td>
<td>Asian Pacific American Women</td>
<td>3 Prereq CES or W St course; completion of one Tier I and three Tier II courses. Rec CES 101 or W St 200. Intersection of ethnicity, race, class, gender and sexuality in the lives of Asian Pacific American women.</td>
</tr>
<tr>
<td>413</td>
<td>Asian Pacific Americans and Popular Culture</td>
<td>3 Prereq CES 101 or 111. Examines the racial politics that have developed around the representation of Asian Pacific Americans in US popular culture.</td>
</tr>
<tr>
<td>415</td>
<td>United States 1941 to Present</td>
<td>3 Same as Hist 419.</td>
</tr>
<tr>
<td>419</td>
<td>History of the Pacific Northwest</td>
<td>3 Same as Hist 422.</td>
</tr>
<tr>
<td>421 [T]</td>
<td>Intercultural Processes in Global Contexts</td>
<td>3 Prereq completion of one Tier I and three Tier II courses. Same as ComSt 421.</td>
</tr>
</tbody>
</table>
426 [T] Workers Across North America 3 Prereq completion of one Tier I and three Tier II courses. International interactions between workers and labor unions in Mexico, Canada and the US.

435 [T,D] African American Women in US Society 3 Prereq completion of one Tier I and three Tier II courses; CES 101, W St 200; rec CES 131. Critical terms and models for understanding the experiences of African American women in antebellum America to the present; an interdisciplinary forum concerned with the national experience of the African American woman experience.

440 [T,D] Social Justice and American Culture 3 Prereq completion of one Tier I and three Tier II courses. Social justice issues in relation to diverse American cultures in both an historical and contemporary context.

444 [T] White Power Movements and Ideologies PreReq completion of one Tier I and three Tier II courses. Critical assessment of white supremacist and nationalist movements and ideologies around the globe.

453 [T,D] Health Issues for Chicanos/as 3 Prereq completion of one Tier I and three Tier II courses. Examination of the mental and physical health of Chicanos/os from an interdisciplinary perspective.

454 [T] La Chicana in US Society 3 Prereq junior standing, completion of one Tier I and three Tier II courses. Intersections of race, class, gender and sexual orientation in the experience of a marginalized group—Chicanas.

456 Bilingual Methods and Materials Across Content Areas 3 Same as T & L 411.

457 [T,D] Chicana/o and Latina/o Psychology 3 Prereq Psych 105, EdPsy 401, H D 101, Soc 101, or permission of instructor; completion of one Tier I and three Tier II courses. Examination of the current psychological research and literature relevant to the psychological well being of Chicanas/Chicanos.

459 Latin American Governments 3 Same as Pol S 413.

465 [T] Race, Science and Society 3 Prereq completion of one Tier I and three Tier II courses. Racial thinking in science tracing the impact of scientific racism on policy, popular thought and social movements.

470 [T] American Indian Politics 3 Prereq completion of one Tier I and three Tier II courses. Issues involving indigenous ownership of natural resources within the US.

474 [T] African Politics 3 Prereq completion of one Tier I and three Tier II courses. Historical, economic, and social factors that shape contemporary African political systems and problems of nation-building.

475 [T,D] Indians of the Northwest 3 Prereq Anth 320, CES 171, 375, 377, or Hist 308; completion of one Tier I and three Tier II courses. History and ethnography of Native Americans of the Coast and Plateau; historic relationship with Europeans and Euro-Americans, and other Native Americans, Asian Americans, and Chicanas/os.


485 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

486 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

487 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

488 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

491 Theories of Racism and Ethnic Conflicts 3 Prereq CES 101. Provides general knowledge of the history of racism ideas and the social, political, and cultural contexts underlying ethnic conflicts.

492 Advanced Topics in Ethnic Studies 3 Prereq course in CES. May be repeated for credit; cumulative maximum 9 hours; total hours allowed for CES 492, 493, 494 is 9 hours. A reading and discussion course that explores special topics in ethnic studies.

493 Advanced Topics in Ethnic Studies 3 Prereq course in CES. May be repeated for credit; cumulative maximum 9 hours; total hours allowed for CES 492, 493, 494 is 9 hours. A reading and discussion course that explores special topics in ethnic studies.

494 Advanced Topics in Ethnic Studies 3 Prereq course in CES. May be repeated for credit; cumulative maximum 9 hours; total hours allowed for CES 492, 493, 494 is 9 hours. A reading and discussion course that explores special topics in ethnic studies.

495 Special Topics in Comparative Ethnic Studies 3 May be repeated for credit; cumulative maximum 6 hours. Prereq course in CES. Cross-cultural studies on Asian Pacific Americans, Blacks, Chicanas/os, and Native Americans.

496 Internship in Comparative Ethnic Studies V 1-3 Prereq junior standing, 6 hours of CES core course sequence, 6 hours in CES areas of emphasis. Internship component for CES majors and minors. S, F grading.

499 Directed Independent Study V 1-4 May be repeated for credit. S, F grading.

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Program in Criminal Justice

lsbarts.wsu.edu/ crimj

Johnson Twr 801
509-335-2545

Associate Professor and Chair, S. Stehr; Professors, C. Clayton, T. Cook, M. Cottam, L. LeLoup, N. Lovrich, O. Marenin, A. Mazur, D. Nice, B. Vila; Associate Professors, A. Appleton, D. Brody, F. Latte, T. Pratt (Criminal Justice Director), T. Preston, E. Weber; Assistant Professors, D. Brody, L. Drapeba, N. Fearn, M. Pickerill, T. Ridout; Instructor, M. Erp.

The Program in Criminal Justice, located in the Department of Political Science, offers substantive studies in criminal justice in conjunction with a liberal arts education. It prepares students for a broad range of careers in criminal justice institutions, government agencies at local, state, and federal levels, private support and welfare organizations, private security work, and domestic and international corporations, as well as for the pursuit of graduate study or law school: develops leadership qualities; and promotes the ideal of professional achievement in public service. Criminal Justice is the interdisciplinary study of the problem of crime and of the institutions, policies, and practices by which society responds to the problem of crime, as well as theories of human behavior and normative philosophies directly related to the maintenance of social order, the control of crime, and the achievement of a just society. Specific courses in the program focus on social control issues and policies, substantive and procedural criminal law, the organization and workings of criminal justice institutions (police, courts, corrections, juvenile), issues relevant to groups in American society (gender, minorities), research and evaluation skills, theories of crime and delinquency, practical ethics, and the evaluation of criminal justice system institutions and their administration and management.

Students are also required to complete collateral courses on the larger political, legal, economic, and social environments in which crime and the criminal justice system operate. Taught by a multidisciplinary faculty, courses cover such areas as public administration, American public policy, constitutional law, gender and politics, and political psychology. Additional elective courses are taught by the Department of Sociology and Psychology.

We expect that graduating students will have an understanding of: 1) the causes of crime, 2) the components, processes, and programs of the criminal justice system, 3) the interconnectedness of theory, research, and practice, 4) the complexities of achieving justice in a multi-cultural society, 5) the intricacies of policy formation and implementation, and 6) the ability to understand and interpret social science research. The course of study leads to the Bachelor of Arts in Criminal Justice, and the Master Degree and Ph.D. Degree in Criminal Justice.

Transfer Students

Students planning to transfer to Washington State University at the end of the freshman or sophomore year should follow as closely as possible the general and core course requirements set forth in the schedule of studies. If this is done, there should be no difficulty in completing the requirements for
the bachelor’s degree within the normal period of four years. It should also be noted that courses numbered 300 or above at Washington State University and taken at other institutions during the freshman or sophomore years will not be accepted for major requirements.

**Preparation for Graduate Study**

Undergraduates who are pursuing their studies at other institutions or through other curricula at this institution and who contemplate graduate work in this program will do well to elect courses similar to those required in the schedule of studies.

**Schedules of Studies**

**Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.**

**Criminal Justice Degree Program (122 Hours)**

Students who major in criminal justice must complete the 15 hour criminal justice core (Crm J 101, 201, 330, 420, and 450); 6 hours in research methods and quantitative analysis (selected from an approved list); 6 hour in criminal justice institutions courses (Crm J 365, 370, 380, 385); 9 hours in criminal justice electives; 9 hours from specified political science courses; and 3 hours in specified College of Liberal Arts electives. Students must also pass a writing proficiency test.

**First Year**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
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</tr>
<tr>
<td>Crm J 101</td>
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</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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**Second Term**

<table>
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<td>Social Sciences [S,K] (GER)</td>
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<td>Communication [C,W] (GER)</td>
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**Third Year**

<table>
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<tbody>
<tr>
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<tr>
<td>Crm J 420</td>
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<tr>
<td>Crm J institution course</td>
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<tr>
<td>Pol S collateral course</td>
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<tr>
<td>Quantitative methods course</td>
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| Complete Writing Portfolio|       |

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<td>Pol S collateral course</td>
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<tr>
<td>Electives</td>
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**Fourth Year**

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<tr>
<td>CLA Elective</td>
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<tr>
<td>Crm J 450 [M]</td>
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<td>Crm J Elective</td>
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<table>
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<tr>
<th>Second Term</th>
<th>Hours</th>
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<td>Foreign Language, if necessary, or Electives</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Electives</td>
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</tbody>
</table>

**Minors**

**Criminal Justice**

The minor in Criminal Justice requires 18 credits of course work in criminal justice, including Crm J 101, 201, 330, 420, and 450 [M]. Half of the courses must be taken at the 300-400 level. Students wishing to minor in criminal justice should contact the Criminal Justice Program for details.

**Description of Courses**

**Criminal Justice Courses**

| Crm J                     |       |

**101 Introduction to the Administration of Criminal Justice** 3 Agencies and processes in the administration of criminal justice. Cooperative course taught by WSU, open to UI students (CJ 101).

**201 The Nature of Crime** 3 Prereq Crm J 101. Analysis of concepts of crime and seriousness as determined by societal factors.


**275 Special Topics: Study Abroad** V 1-15 May be repeated for credit. S, F grading.

**276 Special Topics: Study Abroad** V 1-15 May be repeated for credit. S, F grading.

**277 Special Topics: Study Abroad** V 1-15 May be repeated for credit. S, F grading.

**278 Special Topics: Study Abroad** V 1-15 May be repeated for credit. S, F grading.

**311 Research Methods for Criminal Justice** 3 Prereq Crm J 101. Discussion of research methods appropriate for the study of crime and criminal justice policies and institutions.

**320 Criminal Law** 3 Substantive criminal law; principles, functions, and limits; basic crime categories, state and national legal research materials. Cooperative course taught jointly by WSU and UI (CJ 325).

**321 Quantitative Methods for Criminal Justice** 3 Prereq Crm J 311. Critical discussion of skills and methods needed for the analysis of implementation and impact of criminal justice policies.


**370 Introduction to Policing in America** 3 Prereq Crm J 101. Development, organization, policies, and performance of the police. Cooperative course taught by WSU, open to UI students (CJ 370).

**380 Criminal Courts in America** 3 Prereq Crm J 101. Structure and process of the prosecution and adjudication of individuals charged with crimes in the criminal court system.

**381 Crime and Justice in the Movies** 3 Prereq Crm J 101. Development, organization, policies, and performance of the police. Cooperative course taught by WSU, open to UI students (CJ 381).

**385 Strategies and Policies of Punishment in Contemporary America** 3 Prereq Crm J 101. Ideologies of punishment and correction, intermediary sanctioning and reintegration policies in the criminal justice system.

**400 [M] Issues in the Administration of Criminal Justice** 3 Prereq Crm J 101. Select topics in criminal justice. May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught by WSU, open to UI students (CJ 400).

**403 [T] Violence Toward Women** 3 Prereq Crm J 101 or W St 200; completion of one Tier I and three Tier II courses. Violence toward women and its relationship to broader social issues such as sexism and social control.


**420 [M] Criminal Procedure** 3 Principal court decisions concerning standards of conduct and rights in the criminal process. Cooperative course taught by WSU, open to UI students (CJ 420).

**424 Community Corrections** 3 Prereq Crm J 150. Theory practice and human impact of treating criminal offenders in the community.
426 Victimology and Public Policy 3 Prereq Crm J 101. Examination of victimization; policy responses to victims; victim’s rights.


428 Drug and Alcohol Use and Abuse 3 Prereq Crm J 101. Drug use, impact on behavior and drug control policies.

450 [M] Senior Seminar: Ethical Issues in Drug and Alcohol Use and Abuse 3 Seminar, open to UI students (CJ 572). The seminar examines ethical issues in decision making in criminal justice.

482 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

509 Criminal Justice Field Practicum V 1-6 By interview only. Off-campus professional internship in selected criminal justice agencies. S, F grading.

540 Seminar in Research Evaluation 3 Interdepartmental course taught by WSU, open to UI students (CJ 591).

541 Seminar in Administration, Justice, and Applied Policy Studies 3 Same as Pol S 542.

600 Special Projects or Independent Study Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Crop and Soil Sciences
css.wsu.edu/
Johnson Hall 201
509-335-3475

Professor and Department Chair, W. L. Pan

The department offers study programs leading to the degrees of Bachelor of Science in Crop Science, Bachelor of Science in Soil Science, Master of Science in Crop Science, Master of Science in Soil Science, Doctor of Philosophy (Crop Science), and Doctor of Philosophy (Soil Science). Students can select from several options of study to fit their career objectives and needs.

Students are encouraged to participate as part-time employees in research programs and seek professional internships for applied learning experiences. Departmental and college scholarships are available based on ability, need, and interest. Students gain professional and social contacts with the faculty and other students through the student club activities.

CROP SCIENCE

Crop scientists (or agronomists) are involved in improving food, feed, and fiber production. They study metabolic and developmental processes of crop plants and seeds, develop improved crop varieties through plant breeding and biotechnology, design sustainable crop production and management systems which conserve natural resources while enhancing crop yields, and investigate the impact of cropping systems on agricultural and nonagricultural ecosystems. Turf management opportunities include golf course management, recreational facilities management, and lawn care. Graduates qualify for careers in agribusiness, corporate and technical farm management, professional consulting, research, sales, plant biotechnology, and service positions. Positions are available in government and commercial agencies such as USDA’s Agricultural Research Service, Natural Resource Conservation Service, and Cooperative Extension; the Environmental Protection Agency; the US Peace Corps. Teaching, research, and extension careers are available in community colleges and universities for graduates with advanced degrees.

An interdisciplinary curriculum in integrated pest management is available to those students whose interests span the areas of crop science and pest management. This curriculum is described under the entomology section of this bulletin.

Transfer Students

Students planning to transfer to Washington State University should take courses which meet general University and crop science core requirements.

Preparation for Graduate Study in Crop Science

Preparation for graduate study requires the selection of courses that will benefit later work toward a master of science or doctor of philosophy degree. Normally, preparation for an advanced degree in crop science includes course work outlined under one of the options with a strong emphasis in plant sciences, chemistry, computer science, mathematics, and statistics.
## SOIL SCIENCE

Soil scientists are concerned with the physical, chemical, and biological processes that govern natural and agricultural ecosystems. The study of soil science stresses an understanding of these fundamental processes as they apply to crop production, soil development, and environmental quality. Some of the areas of active interest include identification and transfer of best management practices for crop production, erosion control, and environmental protection; reclamation of contaminated soils; transport of pesticides through soils; bioremediation of hazardous wastes; soil-landscape development processes use of microbes to control weeds and plant diseases; surface chemistry of soil minerals; modeling of cropping systems; remote sensing of soils and vegetation; strategies in precision farming; and global change.

Graduates qualify for careers in agribusiness, consulting, waste management, research, and service positions. Positions are available with private consulting firms and commercial concerns dealing with farm products. In addition, government agencies including Agricultural Research and Extension, Agricultural Research Service, Departments of Agriculture, Natural Resources, and Ecology, and the Natural Resource Conservation Service have need of soil science graduates. Opportunities also exist in international development.

### Preparation for Graduate Study in Soil Science

Preparation for graduate study requires the selection of courses that will benefit later work toward a master of science or doctor of philosophy degree. Normally, preparation for an advanced degree in soil science includes course work outlined under one of the options plus completion of Math 171, Phys 102 or 202, and, if not specified in the option, Chem 345.

### Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete honors requirements in place of GERs.

### CROP SCIENCE—BUSINESS AND INDUSTRY OPTION

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>First Year</td>
<td>Hours</td>
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<tr>
<td>First Term</td>
<td>4</td>
</tr>
<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
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</tr>
<tr>
<td>CropS 101</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>Math 107</td>
<td>4</td>
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<td>Hours</td>
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### CROP SCIENCE—CROPPING SYSTEMS OPTION

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>First Year</td>
<td>Hours</td>
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<td>First Term</td>
<td>4</td>
</tr>
<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
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<tr>
<td>CropS 101</td>
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<td>Math 107</td>
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### CROP SCIENCE—SCIENCE/BIOTECHNOLOGY OPTION

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
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<td>First Year</td>
<td>Hours</td>
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<tr>
<td>First Term</td>
<td>4</td>
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<tr>
<td>Chem 101 [P] (GER)</td>
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<td>CropS 101</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
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<tr>
<td>Elective</td>
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</table>
Department of Crop and Soil Sciences

Chem 106 [P] (GER) 4
ComSt 102 [C] or H D 205 [C] (GER) 3
Math 107 4

**Second Year**

**First Term**
- Ag Econ 201 [S], Econ 101 [S], or Econ 102 [S] (GER) 3
- Arts & Humanities [H,G] (GER) 3
- Biol 107 [B] or Bot 120 [B] (GER) 4
- CropS 201 4
- Elective 3
- SoilS 201 [B] (GER) 3

**Second Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Biol 107 [B] or Bot 120 [B] (GER) 4
- CropS 201 4
- Elective 3
- SoilS 201 [B] (GER) 3

**Third Year**

**First Term**
- Ag Econ 201 [S], Econ 101 [S], or Econ 102 [S] (GER) 3
- Biol 107 [B] or Bot 120 [B] (GER) 4
- CropS 201 4
- Elective 3
- SoilS 201 [B] (GER) 3

**Second Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Biol 107 [B] or Bot 120 [B] (GER) 4
- CropS 201 4
- Elective 3
- SoilS 201 [B] (GER) 3

**Fourth Year**

**First Term**
- Ag Econ 201 [S], Econ 101 [S], or Econ 102 [S] (GER) 3
- Biol 107 [B] or Bot 120 [B] (GER) 4
- CropS 201 4
- Elective 3
- SoilS 201 [B] (GER) 3

**Second Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Biol 107 [B] or Bot 120 [B] (GER) 4
- CropS 201 4
- Elective 3
- SoilS 201 [B] (GER) 3

**SOIL SCIENCE—ENVIRONMENTAL OPTION**

**First Year**
- Ag Econ 201 [S], Econ 101 [S], or Econ 102 [S] (GER) 3
- Biol 107 [B] or Bot 120 [B] (GER) 4
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 107 3

**Second Term**
- Ag Econ 201 [S], Econ 101 [S], or Econ 102 [S] (GER) 3
- Biol 107 [B] or Bot 120 [B] (GER) 4
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 107 3

**Third Year**
- Ag Econ 201 [S], Econ 101 [S], or Econ 102 [S] (GER) 3
- Biol 107 [B] or Bot 120 [B] (GER) 4
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 107 3

**Fourth Year**
- Ag Econ 201 [S], Econ 101 [S], or Econ 102 [S] (GER) 3
- Biol 107 [B] or Bot 120 [B] (GER) 4
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 107 3
### Second Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
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<tbody>
<tr>
<td><strong>First Term</strong></td>
<td><strong>Hours</strong></td>
</tr>
<tr>
<td>Ag Ec 201 [S] (GER)</td>
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<td>Arts &amp; Humanities [H, G] (GER)</td>
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<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
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<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
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<tr>
<td>SoilS 201 [B] (GER)</td>
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<tr>
<td><strong>Second Term</strong></td>
<td><strong>Hours</strong></td>
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<tr>
<td>Ag Ec 210 or Cpt S 405</td>
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<td>Geol 102 [P] (GER)</td>
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### Third Year

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<td><strong>First Term</strong></td>
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<td>Bot 320</td>
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<tr>
<td>CropS 305, Entom 305, or Pl P 429</td>
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<tr>
<td>SoilS 301 [M]</td>
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<td>Complete Writing Portfolio</td>
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<td><strong>Second Term</strong></td>
<td><strong>Hours</strong></td>
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<tr>
<td>Ag Ec 340</td>
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<td>Arts &amp; Humanities [H, G] or Social Sciences [S, K] (GER)</td>
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<tr>
<td>SoilS 421</td>
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<tr>
<td>SoilS 441</td>
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<tr>
<td>SoilS 442</td>
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### Fourth Year

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</thead>
<tbody>
<tr>
<td><strong>First Term</strong></td>
<td><strong>Hours</strong></td>
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<tr>
<td>CropS 305, Entom 305, or Pl P 429</td>
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<tr>
<td>SoilS 374 or 474</td>
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<tr>
<td>SoilS 413</td>
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<tr>
<td>SoilS 431</td>
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<tr>
<td>SoilS 451 [M]</td>
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<td><strong>Second Term</strong></td>
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<tr>
<td>CropS 302 or Hort 320</td>
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<td>Intercultural [L, G, K] (GER)</td>
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<td>SoilS 412</td>
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<tr>
<td>Stat 212 or 412</td>
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### Minors

**Crop Science**
A minor in crop science may be obtained by students from other departments. See a crop science advisor.

**Soil Science**
A minor in soil science may be obtained by students from other departments. Sixteen semester hours in soils is required, at least 8 of which must be in 300-400-level courses.

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1 Based on the mathematics placement exam scores, students may not need to enroll in Math 107.

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**SOIL SCIENCE—SUSTAINABLE AGRICULTURE OPTION (125 HOURS) [FYDA]**

This option integrates concepts of biodiversity, cropping systems, farm management, soil quality, and agroecology.

### First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
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<tbody>
<tr>
<td><strong>First Term</strong></td>
<td><strong>Hours</strong></td>
</tr>
<tr>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Term</strong></td>
<td><strong>Hours</strong></td>
</tr>
<tr>
<td>Biol 107 [B] or Bot 120 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency [C, W] (GER)</td>
<td>3</td>
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<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
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</tr>
</tbody>
</table>

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1 Based on the mathematics placement exam scores, students may not need to enroll in Math 107.

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**Sustainable Small Acreage Farming and Ranching**
The certificate in Sustainable Small Acreage Farming and Ranching requires 15-18 hours with 6-9 hours in the core and 3 hours in each of three module areas. Core: SoilS 404 (3 hours) and SoilS 498 (3-6 hours). Electives: Farm Business Planning: SoilS 403 and other approved courses. Sustainable Food Systems: SoilS 150 [Q], SoilS 445 or 545, and SoilS 350 [I]. Sustainable Production: SoilS 101, SoilS 345, or other approved courses.

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**Certificate Courses**

**CropS**

101 Introductory Field Crop Science 3 Production and adaptation of cultivated crops; principles affecting growth, development, management, and utilization.

102 Cultivated Plants 3 Production strategies, innovative research, utilization and processing techniques of Washington’s major agronomic and horticultural crops.

201 Growth and Development of World Crop Plants 4 (2-6) Prereq CropS 101 or c/l. Ontogeny of temperate and tropical crop plants; basics of crop evolution, distribution, anatomy, morphology, and physiology.

202 Crop Growth and Development 4 (3-3) Prereq Hort/Crops 102; rec Biol 106, 107 or 120. Same as Hort 202.

297 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

301 [M] Turfgrass Culture 3 (2-3) Prereq one semester of Biology or Horticulture. Principles of establishment and management of turf for lawns, parks, and golf courses. Field trip required. Cooperative course taught by WSU, open to UI students (PlSc 301).

302 Forage Crops 3 (2-3) Prereq Biol 106 or 120. Adaptation, production, and utilization of forage crops. Field trip required.

305 Ecology and Management of Weeds 3 (2-3) Prereq Biol 106, 120, CropS 101, 201, or Hort 101 or 201; Chem 345. Weed ecology/management in crop and non-crop systems; weed growth/development, identification, weed control (chemical, mechanical, biological), and environmental issues.

317 Golf Course Management 1 Prereq CropS 301. Specific management practices for golf courses in the Pacific Northwest.

318 Athletic Field Management 1 Current athletic field management practices (BMPs) for turfgrass students and turfgrass industry professionals.

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122
360 [I] World Agricultural Systems 3 Prereq two semesters physical or biological sciences. Study of agro-environmental characteristics of world agriculture; historical and contemporary features of world food production. Cooperative course taught by WSU, open to UI students (PlSc 360).

403 Advanced Cropping Systems 3 Prereq CropS 201; Pl P 429 or c/; or graduate standing. Understanding the management of constraints to crop production and quality; biological, physical, and chemical approaches to crop health management. Field trips required. Credit not granted for both CropS 403 and 503. Cooperative course taught by WSU, open to UI students (PlSc 412).

410 Seed Science and Technology 3 (2-3) Prereq Biol 106 or 120; Biol 320. Principles of seed biology, development and physiology; seed quality evaluation. Cooperative course taught by WSU, open to UI students (PlSc 411).


412 Seminar 1 May be repeated for credit. Current literature and reports on research or special topics.

413 Biology of Weeds 3 Prereq Biol 320. Biology, ecology, and physiology of weeds; crop and weed interactions and interference. Credit not granted for both CropS 413 and 513. Cooperative course taught by UI (PlSc 410), open to WSU students.

444 Plant Breeding I 2 Prereq Biol 106, 120, CropS 201, or Hort 201; rec MBioS 301. Genetic principles underlying plant breeding and an introduction to plant breeding.


495 Research Experience V 1-4 Planned and supervised undergraduate research experience. May be repeated for credit; cumulative maximum 12 hours.

497 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

498 Professional Internship V 1-6 May be repeated for credit; cumulative maximum 9 hours. Planned and supervised professional work experience. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

503 Advanced Cropping Systems 3 Graduate-level counterpart of CropS 403; additional requirements. Credit not granted for both CropS 403 and 503. Cooperative course taught by WSU, open to UI students (PlSc 512).

504 Plant Transmission Genetics 3 Prereq MBioS 301. Transmission of genes across generations; detailed study of the basic laws of genetics to predict and describe inheritance. Cooperative course taught by WSU, open to UI students (PlSc 507).

505 Advanced Classical and Molecular Breeding 3 Prereq Biol 320 or MBioS 303; CropS 445. Characterization and principles of improving crop quality and adaptation traits with emphasis on molecular breeding strategies. Cooperative course taught by WSU, open to UI students (PlSc 515).

508 Advanced Crop Physiology I 3 Prereq MBioS 303. Physiological responses of crops to light, water and temperature; physiology of seed germination and root and shoot development. Cooperative course taught by WSU, open to UI students (PlSc 508).

510 Seminar 1 May be repeated for credit. Literature review; preparation and presentation of reports in crop science.

511 Research Proposal and Development 2 Develop research proposal and give oral presentation to demonstrate ability to employ strategy and procedures to address objectives.

512 Topics in Crop Science 1 or 2 May be repeated for credit. Concepts of plant breeding, seed physiology, and technology; crop physiology and management.

513 Biology of Weeds 3 Graduate-level counterpart of CropS 413; additional requirements. Credit not granted for both CropS 413 and 513.

515 Seminar in Plant Physiology 1 Same as Pl Ph 515. May be repeated for credit.

520 Plant Cytogenetic Techniques 3 (1-6) Prereq MBioS 301. Plant genes and chromosomes. Cooperative course taught by UI (PlSc 520), open to WSU students.

533 Plant Tissue, Cell and Organ Culture 3 (1-6) Same as Hort 533.

539 Herbicide Fate and Mode of Action 4 Prereq CropS 305, Biol 320, MBioS 303. Fate of herbicides in plants, soil, and water; physiological and biochemical mode of herbicide action; mechanisms of herbicide resistance. Cooperative course taught jointly by WSU and UI (PlSc 539).

546 Plant Breeding 3 Prereq MBioS 301. Principles and practices of genetic plant improvement. Cooperative course taught by UI (PlSc 546), open to WSU students.

547 Biometrics for Plant Scientists 3 Prereq CropS 101, Stat 212. Biometrical techniques in research with particular emphasis in designing, analyzing, and interpreting agricultural and biological experiments. Cooperative course taught by UI (PlSc 547), open to WSU students.

554 Chromosome Structure and Function 3 Prereq MBioS 301 or equivalent. Structural and functional organization of eukaryotic chromosomes. Cooperative course taught by WSU, open to UI students (PlSc 554).

556 Insecticides: Toxicology and Mode of Action 1 Same as Entom 556.

557 Herbicides: Toxicology and Mode of Action 1 Same as Entom 557.

558 Pesticides Topics 1 Same as Entom 558.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Soil Science Courses

Soils


150 [Q] Science, Society and Sustainable Food Systems 3 (2-3) Introduction to food and farming systems, emphasizing scientific principles and sustainability from environmental and socioeconomic perspectives. Cooperative course taught by WSU, open to UI students (PlSc 150).

201 [B] Soil: A Living System 3 Prereq Chem 102. Biological, chemical, and physical properties of soils; fundamentals of soil ecology, soil-water-plant relations, soil fertility, and soil genesis.

297 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

301 [M] Land Use and Soil Management 3 Prereq Soils 201. Soil and water conservation and management; land classification and reclamation; soils and environmental quality; sustainable agroecosystems.

345 Sustainable Agriculture 3 Prereq two semesters college-level physical or biological science or by permission. Environmental issues in sustainable agriculture and food production; pesticides, fertilizers, organic wastes, biotechnology, quality of life, and risk-benefit assessment. Cooperative course taught jointly by WSU and UI (Soil 345).


374 Remote Sensing and Airphoto Interpretation 3 (2-3) Physical basis of remote sensing, fundamentals of aerial photography and image analysis applied to agriculture, forestry, wildland management problems.

402 Special Topics in Soils V 1-3 May be repeated for credit; cumulative maximum 6 hours. Presentation and discussion of current soils science subject matter. Cooperative course jointly taught by WSU and UI (Soil 404).

403 Agricultural Entrepreneurship, Tilling the Soil of Opportunity 3 Designed for students who are interested in starting an agricultural enterprise or gaining knowledge of the process. Cooperative course taught by UI (AG 404), open to WSU students, S, F grading.
404 Small Acreage Farming and Ranching  
Overview 3 Introduction to small acreage production systems, evaluation of personal and family goals, land evaluation, business planning, marketing options, regulations, and community resources. Cooperative course taught by UI (Ag 404), open to WSU students.

412 Seminar 1 Same as CropS 412.
413 Soil Physics 3 (2-3) Prereq Math 107; Geol 101, 102 or Soils 201. Characterization of soil properties including water content and potential and hydraulic conductivity; modeling water, solute transport, erosion and contamination of groundwater. Credit not granted for both Soils 413 and 513.

414 Environmental Biophysics 2 Prereq Math 107. Physical environment of living organisms (temperature, humidity, radiation, wind); heat and mass exchange and balance in plant and animal systems. Credit not granted for both Soils 414 and 514. Cooperative course taught by WSU, open to UI students (Biol 415).

415 Environmental Biophysics Laboratory 1 (0-3) Prereq Soils 414 or c/c. Experimental methods and procedures in environmental measurements; temperature, wind, radiation, and humidity measurements in biological environments. Credit not granted for both Soils 415 and 515. Cooperative course taught by WSU, open to UI students (Biol 436).

421 Environmental Soil Chemistry 3 Prereq Chem 105, 106, Soils 201. Soil constituents; soil solutions; mineral equilibria; absorption reactions; acid/base reactions; oxidation-reduction; soil contaminants. Credit not granted for both Soils 421 and 521.

431 Soil Microbiology and Biochemistry 3 (2-3) Prereq MBioS 101 or 201; Soils 201. Biology and significance of organisms inhabiting soil; roles in nutrient cycling, ecosystem function, agriculture and bioremediation. Credit not granted for both Soils 431 and 531. Cooperative course taught by WSU, open to UI students (Biol 477).

441 Soil Fertility 3 (2-2) Prereq Soils 201. Nutrient management impacts on crop productivity, soil and water quality; mineral requirements; soil testing; plant analysis; inorganic and organic fertilizers.

442 Analytical Methods for Soil-Plant-Water Systems 3 (2-3) Prereq Soils 421 or 441. Standard analytical methods; e.g. major dissolved ions, organic matter concentration, carbon exchange capacity; experimental design; hypothesis testing; statistical methods. Cooperative course jointly taught by WSU and UI (Soil 404).

445 Field Analysis of Sustainable Food Systems 3 Experiential course visiting farms, food processing and marketing facilities to develop understanding of issues and relationships of sustainable food systems. Credit not granted for both Soils 445 and 545. Cooperative course taught jointly by WSU and UI (Ag 445/545).


462 Systems in Integrated Crop Management 3 (2-3) Same as Entom 462. Credit not granted for both Soils 462 and 562.

468 ArcGIS and Geospatial Analysis 4 (2-6) Prereq Biol 120, Geol 101 or Soils 201. Interpretation, presentation, and discussion of current research on soils, uses and management. Cooperative course taught by WSU, open to UI students (Soil 468).

474 Airphotos and Geomorphology 3 (2-3) Prereq physical geology. Remote sensing and photointerpretation methods applied to terrain landforms, soils, land use, vegetation. Cooperative course taught by WSU, open to UI students (For 415).

480 Practicum in Organic Agriculture 6 (3-9) Prereq by permission. Applied principles and practices of organic agriculture; immersion and participation in all required farming/gardening activities.

490 Composting 2 The composting industry, including biology, methods, benefits, management, regulations, and environmental concerns.

495 Research Experience V 1-4 Same as CropS 495. May be repeated for credit; cumulative maximum 12 hours.

497 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

498 Professional Internship V 1-6 May be repeated for credit; cumulative maximum 9 hours. Planned and supervised professional work experience. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Seminar 1 May be repeated for credit. Presentation of research information.

502 Advanced Topics in Soils V 1-3 May be repeated for credit; cumulative maximum 6 hours. Interpretation, presentation, and discussion of current research on soils, uses, and management.

503 Advanced Soil Analysis V 1-3 May be repeated for credit; cumulative maximum 6 hours. By interview only. Soil research techniques; application of modern instrumentation to soil analysis.

504 Research Presentation Techniques 1 Preparation of visual aids and oral presentation of research findings. S, F grading.

505 Teaching Practicum 1 May be repeated for credit; cumulative maximum 4 hours. Supervised experience in classroom teaching; classroom preparation for lectures, discussions, laboratories; preparation and grading of exams. S, F grading.

511 Research Proposal and Development 2 Develop research proposal and give oral presentation to demonstrate ability to employ strategy and procedures to address objectives.

514 Environmental Biophysics 2 Prereq Math 107. Graduate-level counterpart of Soils 414; additional requirements.

517 Fate and Effects of Environmental Contaminants 3 Same as E5/RP 517.

521 Environmental Soil Chemistry 3 Graduate-level counterpart of Soils 421; additional requirements. Credit not granted for both Soils 421 and 521. Cooperative course taught by WSU, open to UI students (Soil 521).

526 Soil Mineralogy 2 (1-3) Prereq Soils 421, 451. Distribution and significance of soils minerals; weathering and reactivity of mineral structures; techniques of mineral identification including x-ray diffraction, chemical dissolution, optical and electron microscopy. Cooperative course taught by UI (Soils 526), open to WSU students.

531 Soil Microbiology and Biochemistry 3 (2-3) Prereq MBioS 101 or 201; Soils 201. Same as Soils 431.

533 Advanced Vadose Zone Hydrology 2 Prereq Soils 413. Methods and models for water, heat, vapor and solute transport in the vadose zone; transfer functions to describe solute transport; non-linear parameter estimation. Cooperative course taught by WSU, open to UI students (Soils 533).

537 Soil Biochemistry 3 Prereq MBioS 303; Micro 201; Soils 421. Enzyme activity; microbial activity/biomass; rhizosphere; carbon, nitrogen phosphorus, sulfur, and micronutrient cycles. Cooperative course taught by UI (Soils 537), open to WSU students.

541 Soil-Plant-Microbial Interactions 3 Prereq Soils 421, 431, or 441. Soil-plant-microbial relationships to plant nutrition, plant health, and environmental cleanup; rhizosphere chemistry and microbial ecology. Cooperative course taught by WSU, open to UI students (Soils 541).

545 Field Analysis of Sustainable Food Systems 3 Graduate-level counterpart of Soils 445; additional requirements. Credit not granted for both Soils 445 and 545. Cooperative course jointly taught by WSU and UI (Ag 545).

547 Soil Fertility Management 3 Prereq Soils 441. Philosophy of fertilizer recommendations based on soil and plant tissue testing; principles of fertilizer manufacture, placement and use. Cooperative course taught by UI (Soils 547), open to WSU students.

551 Advanced Pedology 3 Prereq Soils 451. Origin and development of soil; geochemical and biochemical weathering processes; dynamics of organic matter; soil development cycles. Cooperative course taught by WSU, open to UI students (Soils 551).

557 Advanced Soil Genesis and Classification 3 (2-3) Prereq Soils 451. Genesis, classification and interpretation of soils, including field investigation emphasizing existing interrelationships. Cooperative course taught by UI (Soils 557), open to WSU students.

562 Systems in Integrated Crop Management 3 (2-3) Graduate-level counterpart of Soils 462; additional requirements. Credit not granted for both Soils 462 and 562.
Remote Sensing and Geospatial Analysis 3 (1-4) Prereq Soils 374; 476 or equivalent. Digital image processing theory and geographic information systems applied to landscape analysis. Cooperative course taught jointly by WSU and UI (for 572).

Seminar in Remote Sensing 1 Presentation of research results and ideas on subjects relating to remote sensing.

Special Projects or Independent Study Variable credit. S, F grading.

Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

School of Economic Sciences

www.ses.wsu.edu

Hulbert 101

(509) 335-5555


The school offers programs leading to the degrees of Bachelor of Arts in Economics; Bachelor of Science in Environmental and Resource Economics and Management, Agricultural Economics and Management, and Agribusiness; Master of Arts in Economics, Agricultural Economics, and Agribusiness; and Doctor of Philosophy (Economics and Agricultural Economics).

Bachelor’s Programs

The courses of study for the economics and related majors are sufficiently flexible to accommodate students with a variety of career interests, including business, law, government, education, public administration, and general economics. These undergraduate majors also provide excellent preparation for graduate study in many fields, such as business, law, and economics. Courses of study in the economics majors allow sufficient time for electing courses outside the school while meeting all school requirements and General Education Requirements.

The undergraduate programs are designed to provide the basic knowledge and tools necessary to secure professional positions in a wide range of industries and public organizations. The economics degree provides a deep understanding of basic economic forces, thus giving students fundamental analytical skills for a broad range of career paths. The remaining degrees develop and build upon a solid foundation in economics and decision-making and are structured to lead to more focused professional careers. Environmental and resource economics and management deals with the economics of environmental policy and sustainable management required to make rational decisions concerning such areas as forest management, water use, pollution, land use, fisheries, and hazardous wastes. Agricultural economics and management deals with economic issues related to food and fiber supply and demand and the natural resource base that supports agricultural production and societal needs. Applications to public decision making and private decisions of farms, ranches, and agribusinesses are considered. Agribusiness deals more specifically with the business management activities of firms which move agricultural products to final consumers and provide production inputs, such as fertilizer and money, to farms and ranches.

Economics Certification Requirements

Students that have completed at least 24 semester credits and one of Econ 101, 102, or 198, and have a cumulative GPA of 2.5 or higher are eligible to apply for certification. All students are eligible to petition for the consideration of alternative criteria. Transfer student expectations and other unique cases will be dealt with individually. Additional information is available in the school office.

Transfer Students

Students planning to transfer to Washington State University from other institutions should take courses that meet the 100- and 200-level course requirements in economics, mathematics, accounting, English, speech, and General Education Requirements.

Students planning to transfer into one of these majors by the end of their sophomore year should have completed the introductory economics courses and 200-level mathematics courses if they plan to complete the required work for a degree in two additional years.

Preparation for Graduate Study

Students who plan to pursue graduate or professional education beyond the bachelor’s degree should consult their advisers as early as possible to develop study programs directed toward their goals.

Better economics and agricultural economics programs, especially doctoral programs, expect calculus through vector calculus (Math 171, 172, 273), linear algebra (Math 220), mathematics for economics (Econ/Ag Ec 408), and econometrics (Econ 311, 411, or Ag Ec 409). Students planning to pursue graduate study in economics are urged to select an appropriate program of study, including a self-designed additional 12 hours, in consultation with a member of the faculty of the School of Economic Sciences.

Students planning graduate study, whether in economics, agricultural economics, law, business, or public administration, are advised to develop strong skills through courses in English composition and additional work in statistics. Recommendations for specific graduate areas include:

Law School: Acctg 230; B Law 210; Pol S 300; and, depending on legal interests, elective Econ courses from the following: Econ 340, 364, 450, 455, 460, 470, 481; B Law 410, 411 suggested.

Business School: Acctg 230, 231; MIS 250. Additional courses in business are not required for admission to most graduate schools of business. It might be useful, however, to take introductory courses in the major areas of business: B Law 210, Fin 325, MgtOp 301, MgtOp S 340, Mktg 360.

Economics and Agricultural Economics: Math 171 and 220 are recommended to satisfy the major’s mathematics requirements. Calculus through Math 273 and Econ 408 are also useful.


Program in Sustainable Development

Interim Director, M. Nzirimasanga.

The intent of the Program in Sustainable Development is to address how economic and social systems interact with major resource and environmental issues, both internationally and domestically. This is an interdisciplinary program with participation by the departments of Architecture, Economics, Environmental Science and Regional Planning, International Business, Natural Resource Sciences, and Sociology. The program is built on the premise that as a society we have a responsibility to ourselves and to future generations to steward resources in ways that foster long-term environmental and socio-cul-
School of Economic Sciences

Cultural health and economic viability for all peoples.

Employment Opportunities

Majors in each of these degree programs find employment in private industry, government agencies, and with universities. Opportunities to work in foreign countries are also available.

The undergraduate programs are designed to provide the basic knowledge and tools necessary to secure professional positions in a wide range of industries and public organizations. A number of students take graduate work to broaden their career opportunities. Economics majors compete favorably with business majors for jobs in government, business, and charitable organizations, using their strong analytical skills to offer a different perspective for problem-solving and decision-making.

Agricultural economics and management and agribusiness, graduates find a wide variety of career opportunities, such as financial officers and analysts, market analysts, professional farm managers, field representatives and managers of agribusiness firms, economists for state and federal agencies, farm operators, county agricultural agents, private consultants, and foreign agricultural specialists.

Environmental and resource economics and management graduates find career opportunities in such positions as conservation managers, consultants, energy analysts, and financial and market analysts for natural resource-based firms; as advocates and lobbyists for environmental groups; and as economists, environmental auditors, environmental compliance officers, and legislative and policy analysts for state, local, and federal governments.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

AGribusiness Requirements (120 Hours)  

The Bachelor of Science in Agribusiness has been developed for the student who wants to specialize in agribusiness management. Emphasis is placed on the principles of management, marketing, and finance as they apply to the agribusiness sector. The program requires in-depth inquiry into the various management, marketing, and financial decision-making tools. Enough flexibility exists to permit an integrated complement of courses. Students should consult their faculty advisors for the appropriate sequencing of courses as well as for the selection of electives that best suit their needs and interests.

Graduates with a B.S. in agribusiness will be able to: 1) understand basic concepts and quantitative methods underlying applied economic analysis; 2) use applied economic analysis to identify problems and analyze alternative solutions involved in business, government, or social problems; 3) analyze the impacts and nature of alternative policies and decisions on economic and social outcomes; 4) have a fundamental understanding of management practices for application within the agricultural production sector; 5) critically integrate quantitative and analytical methods in decision making and problem solving for economic and social issues; and 6) communicate effectively with both verbal and written skills.

First Year

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<td>Econ 102  [S] (GER)</td>
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Electives | 3-6 |

All three science GER courses must total 10 credits.

Agricultural Economics and Management Requirements (120 Hours)  

This degree is designed for the student who wants to learn how to apply sound economic and management principles to agriculture. Students learn concepts and develop skills for solving problems related to food and fiber supply and demand, making profitable farm and ranch decisions, and managing the natural resource base that supports agricultural production and other needs of society.

Students should consult their faculty advisors for the appropriate sequencing of courses as well as for the selection of electives that best suit their needs and interests.

Graduates with a B.S. in Agricultural Economics and Management will be able to: 1) understand basic concepts and quantitative methods underlying applied economic analysis; 2) use applied economic analysis to identify problems and analyze alternative solutions involved in business, government, or social problems; 3) analyze the impacts and nature of alternative policies and decisions on economic and social outcomes; 4) have a fundamental understanding of management practices for application within the agricultural production sector; 5) critically integrate quantitative and analytical methods in decision making and problem solving for economic and social issues; and 6) communicate effectively with both verbal and written skills.

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Electives | 3-6 |

A, D, G, H, K, P, S, Tier I, Tier II, Tier III
Second Term  

Ag Ec 330, 440 [M], 450 [M], or 453 3  
Econ 301 or 302 3  
Social Sciences [S,K] (GER) 3  
Technical/Career Electives 3-6

Fourth Year

First Term  

Econ 311 or 411 3  
Math 171 [N] (GER)  
GenEd 110 [A] or 111 [A] (GER) 3  
Econ 101 [S] or 102 [S] (GER) 3

Second Term  

Ag Ec 438 or B Law 210 3  
Engl 402 [W] (GER) 3  
Tier III Course [T] (GER) 3  
Electives 3-6

First Year

First Term  

Econ 101 [S] or Econ 102 [S] (GER) 3  
Engl 101 [W] (GER) 3  
GenEd 110 [A] or 111 [A] (GER) 3  
Econ 101 [S] or 102 [S] (GER) 3

Second Term  

Ag Ec 320, 420, or 490 3  
Ag Ec 400-level Elective 3  
Econ 300-level Elective 3  
Technical/Career Electives 6

Third Year

First Term  

300-400-level Econ Core Electives 6  
300-400-level Electives 6  
Econ Option Elective 3  
Complete Writing Portfolio 3

Second Term  

300-400-level Econ Core Elective 3  
Econ Option Elective 3  
Electives 9

Fourth Year

First Term  

400-level Econ Core Elective 3  
Econ Option Elective 3  
Electives 9

Second Term  

Econ 490 [M] 3  
Econ Option Elective 3  
Tier III Course [T] (GER) 3  
Electives 5

Minors

Agricultural Economics and Management or Agribusiness

A minor is offered in agricultural economics and management which requires that a student complete 16 hours of course work in the department, of which 12 hours must be in 300-400-level courses. Students must also complete one of three junior-
senior program sequences, e.g., farm management, marketing, or agribusiness management. A minor in agribusiness requires Ag Ec 350 or 370 and 450; 330; 360 and 460; and enough agricultural economics electives to total 16 hours of course work in the department. A student wishing to declare a minor should consult with an advisor as early as possible to develop the required program.

Environmental and Resource Economics and Management
The minor in environmental and resource economics and management requires 16 hours. The following courses are required: Ag Ec 311; 425; 438 or 480; Econ 301 or 302 or 375 or 481; and 4 elective credits in Ag Ec or Econ. A student wishing to declare a minor should consult with an advisor as early as possible to develop the required program.

Economics
A minor in economics is often a desirable complement to majors such as business administration, engineering, education, agricultural economics, forestry, political science, and history. To be eligible to certify in an economics minor, students must have a cumulative 2.5 gpa. A minor in economics requires 18 hours of economics, nine of which must be at the 300-400-level with an overall 2.0 gpa in the required courses. Courses for the minor may not be taken pass, fail. Consult the department for an acceptable program of study.

Sustainable Development
The program offers a minor in sustainable development. The minor is comprised of Econ/I Bus/Soc/ES/RP 375; one course from each of the following four aspect areas: policy, history, theory; environmental; social/cultural; economic; and one additional course from any of the aspect areas. The minor requires 18 credit hours, with at least 9 hours at the 300-400 level. All coursework for the minor must be graded and a minimum gpa of 2.0 shall be maintained. Students interested in the minor should consult with an advisor in one of the participating departments for an approved course listing. Students wishing to apply for the minor may do so with the Department of Economics.

Description of Courses

Agricultural and Resource Economics Courses

Ag Ec

201 [S] Economics in Agriculture 3 General introduction to economics appropriate for production, consumption and ecological issues in the agricultural and rural sector of the economy.

210 Management Applications of Microcomputers in Agriculture and Home Economics 3 (1-6) Microcomputer systems and software including database management, graphics, spreadsheets, and word processing.

260 Introduction to Environmental and Resource Law 1 American law and legal systems; relationships among legal processes, economic principles, and environmental concerns. Course equivalent to OSU’s AREC 260.

311 Natural Resource Economics 3 Rec Ag Ec 201 or Econ 101. The role of economics in natural resource management and policy. Course equivalent to OSU’s AREC 351.


330 Agribusiness Finance 3 Prereq Acctg 230, Ag Ec 201, Math 201, Stat 212. Financial management, decision making, and analysis in the agribusiness sector; capital market institutions and valuation processes.

340 Introduction to Farm and Ranch Management 3 Rec Ag Ec 201 or Econ 101. Decision making, planning, implementation and control of farms and ranches using economic principles, records, financial reports, budgeting and investment analysis.

350 Introduction to Agricultural Marketing 3 Rec Ag Ec 201 or Econ 101. Problems of marketing farm products; functions and institutions surrounding market operations.

360 Introduction to Agribusiness Management 3 Rec Ag Ec 201 or Econ 101. Introduction to management concepts and techniques focusing on planning, organizing, directing, coordinating and controlling principles in the global food system. Cooperative course taught jointly by WSU and UI (Ag Ec 391).

361 Farm and Natural Resources Appraisal 3 Rec Ag Ec 340, Econ 101, 102. Factors affecting value of land; valuation for loans, sales, assessment, and condemnation. Field trips required. Cooperative course taught by UI (Ag Ec 361), open to WSU students.

370 Agricultural Prices 3 Rec Ag Ec 201 or Econ 101; Stat course. Factors determining levels and movements of prices in agricultural commodities.

385 Global Environmental and Natural Resource Issues 3 Course investigates global and natural resource issues, including global warming, marine fisheries, biodiversity, and water.

407 Decision Analysis in Agricultural Economics 3 Prereq Math 201, 202. Decision analysis tools for agricultural and resource economics and agribusiness; linear, nonlinear, integer programming; transportation, assignment, and input-output models. Credit not granted for both Ag Ec 407 and 507.

408 Mathematics for Economists 3 Same as Math 408.

409 Applied Statistical Methods in Agricultural Economics 3 Rec Math 201, 202, Stat course. Application of sampling techniques, linear regression and analysis of variance and covariance to agricultural economics research problems. Credit not granted for both Ag Ec 409 and 509.

420 [T] Growth and Change in the American West 3 Prereq Ag Ec 201 or Econ 101. American West development showing how the geography and culture of the West have interacted with technical, economic, and institutional change to shape the western economy.

425 Economic Analysis of Environmental Policies 3 3 Prereq Ag Ec 311, Econ 301 or 302. Nature and practice of environmental policy analysis using economics concepts and tools including benefit cost, social indicators and environmental accounts. Credit not granted for both Ag Ec 425 and 525.

438 Natural Resource Law 3 Same as Natrs 438.

440 [M] Advanced Farm and Ranch Management 3 Rec Ag Ec 340. Business and financial principles applied to organization and operation of farms and ranches.

450 [M] Advanced Agricultural Marketing 3 Rec Ag Ec 350 or 370; Econ 301 or 302; Math 202, Stat course. Institutions, practices, policies, and problems in agricultural input and output marketing.

453 International Marketing of Food and Fiber 3 Prereq Ag Ec 201 or Econ 101. Application of economic theory and marketing techniques to the analysis of food and fiber trade.


483 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

490 [M] Policies Affecting American Agriculture 3 Rec Ag Ec 201 or Econ 101. Public policy issues related to agriculture and rural areas. Course equivalent to OSU’s AREC 461.

495 Instructional Practicum V 1-3 Prereq by interview only. Academic experience in teaching and tutoring undergraduate courses in agricultural economics. May be repeated for credit; cumulative maximum 6 hours. S, F grading.

497 Agribusiness Internship V 2-4 By interview only. Off-campus work-study in the agribusiness industry. May be repeated for credit. S, F grading.


499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 Economic Theory I 3 Same as Econ 500.
501 Economic Theory II 3 Same as Econ 501.
502 Economic Theory III 3 Same as Econ 502.
503 Economic Theory IV 3 Same as Econ 503.
504 Economic Theory V 3 Prereq Ag Ec 502, 503. Advanced duality topics, demand and supply system modeling, financial economics and risk.
507 Decision Analysis in Agricultural Economics 3 Prereq Math 201, 202. Graduate-level counterpart of Ag Ec 407; additional requirements. Credit not granted for both Ag Ec 407 and 507.
508 Microeconomic Analysis 3 Prereq Econ 302. Masters-level, calculus-based producer and consumer theory with selected managerial economics topics. Cooperative course taught by WSU, open to UI students (AgEc/Econ 510).
509 Applied Statistical Methods in Agricultural Economics 3 Graduate-level counterpart of Ag Ec 409; additional requirements. Credit not granted for both Ag Ec 409 and 509.
510 Statistics for Economists 4 Prereq college calculus and matrix algebra. Statistical theory underlying econometric techniques utilized in quantitative analysis of problems in economics and finance.
511 Econometrics I 3 Prereq Econ 510. Same as Econ 511.
512 Econometrics II 3 Prereq Ag Ec 501; Econ 511. Econometric methods for systems estimation; simultaneous equations, discrete and limited dependent variable, panel data, and time series data.
521 Topics in Agricultural Economics V 1-3 Current topics in agricultural development, marketing, farm management, and agricultural policy. May be repeated for credit; cumulative maximum 6 hours.
525 Economic Analysis of Environmental Policies 3 3 Prereq Ag Ec 311, Econ 301 or 302. Graduate-level counterpart of Ag Ec 425; additional requirements. Credit not granted for both Ag Ec 425 and 525.
540 Agricultural Production Economics 3 Prereq Ag Ec 508 or consent of instructor. Production economics theory and methods applied to problems of production response, economic optimization, technology, policy, risk and dynamics.
550 Agricultural Marketing 3 Prereq Ag Ec 508 or consent of instructor. Application of economic theory to topics in agricultural marketing and price analysis.
560 Agribusiness Management and Marketing 3 Rec: Ag Ec 460. Management and marketing problem situations in agribusiness; alternative policies, strategies, and decisions.
580 Resource Economics 3 Prereq Ag Ec 508 or permission of instructor. Economic analysis of the allocation and use of environmental and natural resources. Cooperative course taught jointly by WSU and UI (Ag Ec 551).
590 Advanced Topics in Mathematical and Quantitative Methods V 1-6 Prereq Ag Ec 500, 501, or permission of instructor. Topics may include advanced econometrics, dynamic optimizations, computer applications, methodology. May be repeated for credit; cumulative maximum 12 hours.
591 Advanced Topics in Monetary and Public Economics V 1-6 Same as Econ 591.
592 Advanced Topics in International and Development Economics V 1-6 Same as Econ 592.
593 Advanced Topics in Health, Education, Labor, and Demographic Economics V 1-6 Same as Econ 593.
594 Advanced Topics in Markets and Industrial Organization V 1-6 Prereq Ag Ec 500; 501, or permission of instructor. Topics may include industrial organization of agricultural and sports markets, price analysis, market structure, economic growth, rational regulation. May be repeated for credit; cumulative maximum 12 hours.
595 Advanced Topics in Resource and Production Economics V 1-6 Prereq Ag Ec 500; 501, or permission of instructor. Topics may include resource scarcity, decision making under risk, bioeconomics, production applications, welfare analysis. May be repeated for credit; cumulative maximum 12 hours.
596 Advanced Topics in Financial Economics V 1-6 Same as Fin 596.
597 Agribusiness Internship V 2-4 Off-campus student work-study in the agribusiness industry. May be repeated for credit; cumulative maximum 4 hours.
600 Special Projects or Independent Study Variable credit. S, F grading.
700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.
702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
Economics Courses
Econ
138 Freshman Special Topics 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.
198 [S] Economics Honors 3 Introduction to economic theory and policy issues. Open only to students in the Honors College.
301 Theory of the Firm and Market Policy 3 Prereq Econ 101. Price determination and market behavior under different market structures and the problems posed for public policy; not calculus-based. Credit not granted for both Econ 301 and 302.
320 Money and Banking 3 Prereq Econ 102. Analysis of banking institutions and monetary policy in the US, with comparison to abroad.
330 Economics of Sports in America 3 Prereq Econ 101. Economic aspects of American sports; fan demand; advertising; team output decisions; league/conference organization; government and sports.
340 [M] Public Finance and Taxation 3 Prereq Econ 101, 102. Theory and practice of the public sector; taxes, expenditures, and administration at local, state, and federal levels.
364 Transport Economics 3 Prereq Econ 301. Characteristics of transportation systems; market structure; public policy of transport logistics.
375 Aspects of Sustainable Development 3 Prereq junior standing. Ecological, economical, and sociological aspects of sustainable development.
397 Topics—Study Abroad 3 Special topics in economics taught in NCSA study abroad programs.
402 History of Economic Thought 3 Prereq Econ 102. Development of economic thought; special focus on selected schools, including Greeks, scholastics, mercantilists, physiocrats, classics, and neo-classicals. Cooperative course taught by UI (Econ 455), open to WSU students.
408 Mathematics for Economists 3 Same as Math 408.
411 [M] Introduction to Econometrics 3 Prereq MgtOp 215, or Stat 443; Econ 101. Econometric methods in relation to the substantive achievements of empirical econometrics. Credit not granted for both Econ 311 and 411.

416 Comparative Economic Systems 3 Prereq Econ 102. Key institutions, policies, and economic performance of different capitalist and socialist systems; transition of Soviet-type socialist economies, Eastern Europe; capitalism as a global system.

418 [T] Global Capitalism Today: Perspectives and Issues 3 Prereq GenEd 111; Econ 101 or 102. Logic and consequences of capitalism as global system; multinational corporations; underdevelopment and over-development; external debt, population, and environmental crisis.

420 Monetary Theory and Policy 3 Prereq Econ 320. Current issues in monetary economics with a special emphasis on policy.

430 [M] American Economic History 3 Prereq Econ 101 or 102; Rec Econ 301. Development and changes in the American economy from the colonial period to the present.


451 Introduction to Micro and Macro Economics 3 Prereq admission to MBA program. Topics in calculus and principles of micro and macro economics for entering MBA students.

455 The Economics of Health Care 3 Prereq Econ 101. The economics of allocating, financing and delivering medical care services. Cooperative course taught by WSU, open to UI students (Econ 450).

470 International Trade and Finance 3 Prereq Econ 102. Analysis and description of international trade flows; commercial policy; multinational firms, foreign exchange markets; open economy macroeconomics; international monetary systems.

471 Economics of Regional Integration 3 Prereq Econ 102. Economics and politics of regional integration and economic reforms in Western Europe, North America, East Asia, Eastern Europe and Russia.

472 Economic Development and Underdevelopment 3 Prereq Econ 102; Rec Econ 301. Development theories, policies, and performance of Third World economies; population, land reform, foreign trade, aid, investment, debt, dependency.

475 Regional/Urban Economics 3 Prereq Econ 101, 102. Location of economic activity, transportation problems, resource and product distribution methods, urban structure and growth, and related policy issues. Cooperative course taught by UI (Econ 430), open to WSU students.

481 Economics of Environmental Issues 3 Prereq Econ 101; Rec Econ 301. Environmental interactions; efficient allocation of environmental resources; market failure and environmental degradation; economic analysis of environmental policies.

490 [M] Economics Capstone 3 Prereq senior Econ 102; Rec Econ 301. Senior integrative course in economics, completion of Econ core. Integration of economic theory and field courses; assessment.

497 Economics Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. Professional off-campus internships arranged or coordinated by departmental faculty according to student's field of specialization. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 Economic Theory I 3 Prereq Econ 401; 408 or one year of calculus. Introduction to dynamics, growth and investment, overlapping generations models, Ramsey model, consumption and investment.

501 Economic Theory II 3 Prereq Econ 301; 408, or one year calculus, or c/ in Econ 408. Microeconomic theory, multivariate optimization, consumer and producer theory, competitive partial equilibrium, introduction to imperfect competition.

502 Economic Theory III 3 Prereq Econ 500. Macroeconomic theory, short-run fluctuations and nominal rigidities, monetary economics and inflation, real business cycle models, unemployment international macroeconomics.

503 Economic Theory IV 3 Prereq Econ 501. General equilibrium, welfare economics and social choice, market failure, game theory, economics of information.

504 Economic Theory V 3 Prereq Ag Ec 502, 503. Same as Ag Ec 504.

508 Microeconomic Analysis 3 Prereq Econ 302. Same as Ag Ec 508.

510 Statistics for Economists 4 Prereq college calculus and matrix algebra. Same as Ag Ec 510.

511 Econometrics I 3 Prereq Econ 510. Single equation linear and nonlinear models; estimation, inference, finite and asymptotic properties, effects and mitigation of violations of classical assumptions.

512 Econometrics II 3 Prereq Ag Ec 501; Econ 511. Same as Ag Ec 512.


556 Special Topics in International Business Economics 1 May be repeated for credit; cumulative maximum 3 hours. Prereq Econ 101, 102, 301, Math 202. Topics on economic analysis applied to international business situations.

570 International Factor Movement 3 Prereq Econ 470, 501. The basic nonmonetary theory; new theories of international trade; tariffs and commercial policy; effects of economic integration; international movements factor.

571 Monetary Aspects of International Economics 3 Prereq Econ 470, 500. Balance-of-payments; adjustment to payments imbalance; the foreign exchange market; open economy macroeconomic models and macroeconomic policy coordination; international monetary institutions.

572 Theoretical and Institutional Aspects of Economic Development 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 500. Selected topics in the political economy of developing nations.

590 Advanced Topics in Mathematical and Quantitative Methods V 1-6 Prereq Ag Ec 500, 501, or permission of instructor. Same as Ag Ec 590.

591 Advanced Topics in Monetary and Public Economics V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Econ 500 and 501 or permission of instructor. Topics may include money supply, monetary policy, public policy analysis, taxation, externalities, public goods, public finance, open economy macroeconomics.

592 Advanced Topics in International and Development Economics V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Econ 500 and 501 or permission of instructor. Topics may include international trade theory, trade policy, trade and environment, economic integration, open economies, economic development analysis.

593 Advanced Topics in Health, Education, Labor, and Demographic Economics V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Econ 500 and 501 or permission of instructor. Topics may include labor analysis, human capital investment, personnel economics, health care markets, life and health risk valuation, immigration economics.

594 Advanced Topics in Markets and Industrial Organization V 1-6 Prereq Ag Ec 500; 501, or permission of instructor. Same as Ag Ec 594.

595 Advanced Topics in Resource and Production Economics V 1-6 Prereq Ag Ec 500; 501, or permission of instructor. Same as Ag Ec 595.

596 Advanced Topics in Financial Economics V 1-6 Same as Fin 596.

599 Special Topics in Economics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.
Admission to Graduate Study Educational Psychology (Student Assessment and Program Evaluation)

The Doctor of Philosophy in Education and the Doctor of Education, with a specialization in Student Assessment and Program Evaluation, is designed for individuals who intend to enter the professional field of: (a) college or University teaching in the areas of general educational psychology and/or educational measurement, program evaluation, and research design; (b) public school service in the role of a testing program director or coordinator of curriculum and program evaluation; and/or (c) research and/or administration in research units such as the Northwest Regional Lab or an office of institutional studies at a college or University. These applicants must submit their materials to the program coordinator by February 1 for admission the following summer or fall semester. Students may begin classes any semester.

Assessment and Evaluation Center

The Assessment and Evaluation Center (AEC) is a service and research center located in the College of Education. Established in 1997, the center provides educational and social services agencies in Washington with student assessment and program evaluation assistance. Activities have included: assisting school districts to develop a comprehensive district assessment system, program evaluations, test construction, assessment and evaluation of professional development for educators, revising student report cards, evaluating science curriculum and in-service training, and development and implementation of assessment instruments, scoring rubrics, and performance criteria for assessing engineering education.

The AEC is dedicated to the training of graduate students in the field of student assessment and evaluation, meeting a critical need within the state and national workforce. Qualified graduate students may be funded through activities associated with the Assessment and Evaluation Center (AEC). Through the center, graduate students not only receive funding but also practical experience by working on center assessment and evaluation projects. Under the guidance of the center director, graduate students are typically responsible for producing project related documentation, communicating with clients, data analysis, and report writing. The hands-on experiences offered through the center provide a vital component to graduate student education at Washington State University. Students interested in working in the AEC should contact the AEC director.

Certification (Educational Administration)

A certification program for the initial and continuing certifies for superintendents, principals, and program administrators is offered in the Department of Educational Leadership and Counseling Psychology. Candidates for administration certification must comply with the following requirements:

1. All candidates for advanced degree or certificate must be formally admitted to the University as follows: application to the Graduate School; application for certification; three reference forms.

2. All candidates not holding a master's degree in an appropriate area of specialization must be admitted to the University and the master's degree program in the respective department.

3. All candidates for certification must submit the following: application to the Graduate School; application for certification; three reference forms.

4. Admission to the certification program is granted only after the WSU Professional Education Advisory Board (PEAB) reviews the completed application process.

ESA Counselor Certification

The Department of Educational Leadership and Counseling Psychology at Washington State University is involved with southeastern Washington school districts in a Professional Education Advising Board in Counseling Education. The EdS specialization in school counseling constitutes a consortium-directed program approved by the State Board of Education. Completion of this program qualifies a person for initial certification as a school counselor in the state of Washington. Post-master's degree course work is also available leading to continued counselor certification.

Bachelor of Arts in Sport Management

The Department of Educational Leadership and Counseling Psychology offers a major in sport management which leads to a Bachelor of Arts in Sport Management. The sport management major provides professional preparation for those students wishing to pursue a management career with sport organizations or in sport businesses. Students must complete a core program in sport management and must select an area of specialization from business, communications, or leadership studies. Additional information on the areas of specialization can be obtained from the Department. A cumulative GPA of 2.5 is required for certification as a major.

The sport management curriculum is designed to enable our graduating students to: 1) incorporate an understanding of ethical, legal, and socio-cultural issues in managerial decision making and policy determinations in sport; 2) employ sound principles of strategic planning, financial management, risk management, and human resource management in sport; and 3) apply a fundamental knowledge and practical understanding of sport marketing, communication, and event management principles.

Practical application of theory and knowledge is obtained through enrollment in practicum hours during the junior and senior years and through the completion of a 10-12 credit internship at the end of the required coursework. The internship serves as the bridge between the student's college career and opportunities for employment as a sport manager.

The general prerequisite for enrollment in 300- and 400-level sport management courses is 60 hours of coursework and certification as a sport management major or sport management minor. Students of junior or senior status in a certified major who require a 300- or 400-level sport management course for their program will be allowed to enroll in the required course. Additional prerequisites for specific courses are listed in the course descriptions. The program director must approve any exceptions to these requirements.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Educational Leadership and Counseling Psychology

education.wsu.edu/ELCP/index.html

Cleveland 351

509-335-4251


The department offers courses of study leading to a Bachelor of Arts in Sport Management, Bachelor of Science in Kinesiology (majors in athletic training and movement studies), undergraduate minors in leadership studies, sport management, and strength conditioning, and graduate degrees of Master of Education, Master of Arts in Education, Doctor of Education, and Doctor of Philosophy (Education). For the master's and doctoral degrees, students may specialize in athletic administration, administration, higher education, curriculum and instruction, counseling (master's level), counseling psychology (PhD level), educational psychology (master's, EdD, and PhD levels), and student affairs (PhD level). Each area of specialization has a required core of courses. Information on the specific requirements for each degree is available from the Department of Educational Leadership and Counseling Psychology.

Admission to Graduate Study (Educational Administration)

Admission to the graduate programs in educational administration will be determined as soon as a completed departmental application, three letters of recommendation, GRE scores, and all transcripts of past academic work are received and evaluated.

Qualifications of students to continue in the program will be reviewed after the completion of 9 hours of graded course work or the first full-time semester or summer session in residence.

Admission to Graduate Study (Counseling Psychology)

Individuals applying for admission to do graduate study must make application to the Graduate School and submit the following materials to the Department of Educational Leadership and Counseling Psychology associate chair: letter of application describing professional objectives; completed departmental application form; vita; Graduate Record Examination scores; official college transcripts; and three letters of recommendation from individuals qualified to comment on the applicant's academic and professional abilities.

Applications for admission to a graduate program are due each year by February 1 for fall admission the following year. Review of applications is generally completed by mid-March. Notification of the faculty's action is provided in writing by the chair of the department.
Certification Requirements:

WSU seeks to prepare the best possible sport management professionals and therefore seeks highly qualified individuals. Admission to, or continued enrollment in, the sport management program may be denied to any candidate who does not meet the minimum criteria.

Applicants who meet the minimum requirements are eligible for consideration, but not assured admission. Enrollment is limited and admission competitive. Admission application deadlines are October 15, March 15, and August 5, with certification effective the following term. Candidates must complete formal admission procedures and be certified in the sport management major prior to taking any 300- or 400-level sport management coursework. The following minimum criteria must be met for consideration for admission:

Minimum Criteria

1. Completion of at least 30 semester hours of coursework.
2. Minimum WSU cumulative GPA of 2.50.
3. A grade of C or better in each of the following courses: ComSt 102, Eng 101, Math [N] GER, and SpMgt 276.
4. A written statement (maximum of two pages) describing relevant work experience/involvement in extracurricular activities. This statement will be evaluated on the basis of the breadth and depth of the experiences, as well as for clarity of expression.

Bachelor of Science in Kinesiology

Two kinesiology majors in the Department of Educational Leadership and Counseling Psychology (athletic training, movement studies) and one major in the Department of Teaching and Learning (health and fitness education) share kinesiology and health courses. Kinesiology is composed of a broad spectrum of courses designed to expose students to a variety of experiences, concepts, and philosophies. A grade of C or better must be obtained in all departmental core courses and in GER courses used as prerequisites for departmental courses. All letter-graded courses specifically required for each major must be taken for letter grade (i.e., not pass, fail). In addition, each major has a specialized curriculum designed to meet the requirements of the appropriate professional experience in which the student is interested.

Our purpose is to provide students who graduate from the program with: 1) knowledge of core academic concepts related to human movement, sport, and exercise; 2) hands-on experience with technology currently used by kinesiologists in allied health professions; 3) communication skills necessary to function in today's workplace and society; and 4) understanding of the social and ethical aspects of kinesiology as a profession.


Undergraduate Minors

The department of Educational Leadership and Counseling Psychology offers undergraduate minors in leadership studies, sport management, and strength conditioning. Courses for minor may not be taken pass, fail. Students interested in declaring a minor in leadership studies or sport management should contact the Department of Educational Leadership and Counseling Psychology.

Record of Distinction

The Department of Educational Leadership and Counseling Psychology sponsors and hosts a number of state, national, and international programs including the High School Equivalency Program. The Assessment and Evaluation Center serves school districts and state agencies by providing high-quality assessment and evaluation services through grant and contract agreements. The center also provides funding opportunities for graduate students interested in assessment and evaluation. Superintendent certification course work is also offered throughout the state at the campuses in Spokane, Tri-Cities, Vancouver, and internationally in the far east, as well as on the Pullman campus. Counseling certification is offered at the Tri-Cities campus.

The College of Education has excellent facilities for graduate study and research. Modern facilities in Cleveland Hall include the comprehensive George B. Brain Education Library and Mark W. Brands Computer Laboratory. Extensive use also is made of the University's Information Technology Center. A post-masters school psychology certification program is offered at the Spokane campus.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

ATHLETIC TRAINING DEGREE PROGRAM (121 HOURS)

The athletic training education program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The athletic training major is designed to provide students with the necessary academic and clinical competency required to be certified by the National Athletic Trainers' Board of Certification. All students majoring in athletic training will complete the kinesiology core, the athletic training major course work, and 1200 hours of clinical internship experience.

Because of the intensity and availability of the clinical internship, the program admits a limited number of students. Application into the clinical internship program must be completed to WSU, have completed the prerequisite course work, meet academic requirements, and be of sophomore standing.

Students who are below the 2.75 cumulative GPA requirement with special circumstances that would allow the selection committee to believe that they have potential to succeed academically and clinically in the athletic training program can be admitted into the clinical experience on a probationary status. Students need to consult with athletic training advisors for specific requirements for pursuing this avenue of admission.

Clinical internship experiences combine the theory and management of sport-related injury/illness under the direct supervision of certified athletic trainers. The clinical internship is guided by progressive clinical competencies and technical standards that assess the student's progress. Twelve hundred hands-on clinical internship hours are arranged over four consecutive semesters with a parallel educational cooperative partnership involving the Department of Intercollegiate Athletics. Additional clinical experiences are available at high school and sport medicine facilities. Students are expected to maintain high academic standards and demonstrate progressive clinical competence to remain a part of the athletic training clinical internship experience. Specific policies and procedures governing the clinical internship experience are available through athletic training advisors.

First Year

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<th>First Term</th>
<th>Hours</th>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>MvStt 199</td>
<td>3</td>
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<tr>
<td>MvStt 262</td>
<td>4</td>
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<tr>
<td>MvStt 264</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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Second Term

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<tbody>
<tr>
<td>Ath T 266</td>
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<td>Biol 102 [B] or 103 [B] (GER)</td>
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<tr>
<td>ComSt 102 [C] (GER)</td>
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<tr>
<td>MvStt 313</td>
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<td>Soc 101 [S,D] (GER)</td>
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Apply to Clinical Internship

Second Year

<table>
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<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ath T 400 Series</td>
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<tr>
<td>Ath T 491</td>
<td>3</td>
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<tr>
<td>FShn 130 [B] or 233</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<td>HF 361</td>
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<td>Math 205 [N] (GER)</td>
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Second Term

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<tr>
<td>Ath T 311</td>
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<tr>
<td>Chem 101 [P] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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Third Year

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<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<td>Ath T 390 or 391</td>
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<tr>
<td>Ath T 400 Series</td>
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<td>Ath T 492</td>
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<tr>
<td>Biol 251</td>
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<td>SpMgt 477</td>
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Complete Writing Portfolio
MOVEMENT STUDIES DEGREE PROGRAM (120 HOURS)

The movement studies major leads to the Bachelor of Science in Kinesiology. The major provides an interdisciplinary understanding of human movement through the study of anatomy, physiology, movement analysis, biomechanics, motor learning, exercise physiology, and sport psychology and ethics. In addition, students gain proficiency in four of five sport activity areas. Movement studies provides a foundation for personal training certification, health and fitness club employment, teaching, coaching, physical therapy, dance therapy, and sports medicine.

**First Year**

**First Term**
- Engl 101 [W] (GER) 3
- FSHN 130 [B] [GER] or 233 3
- HF 263 3
- MvSt 199 3
- Psych 105 [S] (GER) 3

**Second Term**
- Soc 101 3
- Biol 103 [B] (GER) 3
- GenEd 110 [A] (GER) 3
- MvSt 262 4
- MvSt 264 3

**Second Year**

**First Term**
- Math 205 3
- GenEd 111 [A] (GER) 3
- HF 361 3
- Intercultural [I,G,K] (GER) 3
- Soc 345 3

**Second Term**
- ComSt 102 3
- Arts & Humanities [H,G] (GER) 3
- Chem 101 4
- HD Course 3
- Elective Core 3

**Third Year**

**First Term**
- Ath T 266 3
- Ath T 311 3
- Biol 251 4
- MvSt 313 3
- MvSt 481 3
- Complete Writing Portfolio

**Second Term**
- MvSt 314 3
- MvSt 362 3
- Elective Core 6

**Fourth Year**

**First Term**
- Ath T 400 Series 3
- Ath T 492 3
- Intercultural [I,G,K] (GER) 3
- MvSt 362 3
- Psych 263 3

**Second Term**
- MvSt 415 3
- MvSt 461 3
- Tier III Course (GER) 3

**Additional Clinical Experiences Recommended**

**Elective Core 3**

**Elective 3**

**Tier III Course (GER) 3**

**MvSt 461 3**

**MvtSt 415 3**

**HF 484 3**

**Ath T 305 3**

**SpMgt 365 or 367 3**

**SpMgt 374 3**

**SpMgt 377 3**

**SpMgt 394 3**

**SpMgt 490 3**

**Tier III Course (GER) 3**

**Elective 2 or 3**

**Second Term**
- SpMgt 491 10-12

**SPORT MANAGEMENT DEGREE PROGRAM (120 HOURS)**

**First Year**

**First Term**
- Arts & Humanities [H,G] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Social Sciences [S,K] (GER) 3
- Tier I Science [Q] (GER) 3

**Second Term**
- Biological Science [B] (GER) 4
- GenEd 111 [A] (GER) 3
- Intercultural Studies [I,G,K] (GER) 3
- Math 205 [N] or 210 [N] (GER) 3 or 4
- SpMgt 276 3

**Second Year**

**First Term**
- Area of Specialization 3
- ComSt 102 [C] (GER) 3
- Elective 3

**Second Term**
- Area of Specialization 6
- SpMgt 290 or additional GER [H,G,S,K] 3

**Third Year**

**First Term**
- Area of Specialization 6
- SpMgt 365 or 367 3
- SpMgt 374 3
- SpMgt 377 3
- SpMgt 394 1

**Second Term**
- Area of Specialization 6
- Engl 402 [W] (GER) 3
- SpMgt 365 or 367 3

**Fourth Year**

**First Term**
- SpMgt 464 3
- SpMgt 468 3
- SpMgt 488 3
- SpMgt 490 3
- Tier III Course (GER) 3

**SpMgt 491 10-12**

**Minors**

**Leadership Studies**

Students majoring in any academic area may also take a minor in leadership studies. The minor in leadership studies requires 18 semester hours, 13 of which must be from 300-400-level courses. Students must earn credits from courses in the core curriculum and the supporting interdisciplinary curriculum approved for the minor. Students must complete 9 and no more than 12 core curriculum credits from the following: 6 credits from: Ed Ad 389, 440; 3 credits from: either Ed Ad 497, 498, or 499.

In addition to the 9 credits from the core curriculum, students must earn the balance of the 18 credits from courses listed in the interdisciplinary supporting curriculum: choose 9 credits from: CES 301, 335, 495, ComSt 185, 235, 302, 334, 475, H D 205, Mgt 401, 450, Pol S 455, 456, W St 315. For more detailed information, visit www.getinvolved.wsu.edu/leadership/minor.htm

**Sport Management**

The minor in sport management requires 18 semester hours of course work and practical experience. The minor is designed for students with an interest in sport organizations or sport-related business. Sport management is an appropriate area for students with a variety of career interests, including business, communication, criminal justice, law, and social sciences.

To be eligible to certify as a sport management minor a student must have earned at least 60 credit hours, have a minimum cumulative GPA of at least 2.5, and be certified in a major. Graded courses in the minor may not be taken pass/fail. The program director must approve any exceptions to these requirements.

Required courses include SpMgt 276, 290, 377; SpMgt 367 or Soc 345; and 6 credits from SpMgt 365, 394, 496, 497, 498.

**Strength and Conditioning**

The minor requires 18 semester hours of course work and practical experience. Due to supervision requirements and the nature of the hands-on practical experience, participation in the minor also requires 9 semester credits of prerequisite course work (HF 263, MvSt 262, and Ath T 311) and application. The minor is designed for students with an interest in becoming certified by the Nation Strength and Conditioning Association.

Required course include: Ath T 411, 412, 413, 414, MvSt 264, 362.
Description of Courses

Athletic Training Courses

Ath T

266 Care and Prevention of Athletic Injuries
3 (2-3) Prereq MvSt 262 or c/. Administration of school sports health care program; prevention, treatment, and rehabilitation of sports injuries.

305 Nutrition Related to Fitness and Sport
3 Prereq FSHN 130 or 233. Identification of energy, macro/micro nutrient and fluid requirements during exercise; evaluation of dietary regimens and ergogenic aids for pre and post competition, weight maintenance, and wellness. Cooperative course taught by UI (FCS 305), open to WSU students.

311 Strength Training
3 Prereq MvSt 262, 264. Basic information and guidelines for enhancement of athletic performance, injury prevention, rehabilitation and general fitness. Cooperative course taught by WSU, open to UI students (PEP 311).

349 Advanced Athletic Injuries
3 (2-3) Prereq Ath T 266. Etiologic symptoms of sports-related injuries; diagnostic emphasis given to specific injuries of the extremities. Cooperative course taught by UI (H&S 349), open to WSU students.

390 Athletic Training High School Practicum
V 1-4 By interview only. Supervised practicum. Cooperative course taught by WSU, open to UI students (H&S 390). May be repeated for credit; cumulative maximum 8 hours. S, F grading.

391 Athletic Training Sport Medicine Practicum
V 1-4 By interview only. Supervised practicum. Cooperative course taught by WSU, open to UI students (H&S 391). May be repeated for credit; cumulative maximum 8 hours. S, F grading.

411 Advanced Strength Training
3 Prereq Ath T 311. Advanced methods as they apply to the enhancement of athletic performance, injury prevention, rehabilitation and general fitness. Cooperative course taught by WSU, open to UI students (PEP 411).

412 Strength Training Practicum, Level I
3 (1-6) Prereq admission to strength training program. Entry-level practical experience in the Varsity Weight Room. S, F grading.

413 Strength Training Practicum, Level II

414 Strength Training Practicum, Level III
3 (1-6) Prereq Ath T 413. Advanced-level practical experience in the varsity weight room. S, F grading.

465 Medical Aspects of Athletic Injuries
1 Prereq Ath T 266. Role and function of various medical and paramedical specialists in the treatment of sport-related injuries/illnesses. S/F grading.

466 Athletic Training Evaluation
3 Prereq Ath T 266. Advanced injury evaluation theory and techniques in athletic training.

467 [M] Athletic Training Rehabilitation
3 Prereq Ath T 266. Advanced injury rehabilitation theory and techniques in athletic training.

468 Athletic Training Modalities
3 Prereq Ath T 266. Advanced theory and techniques of modality use in athletic training.

469 [M] Athletic Training Organization and Administration
3 Prereq Ath T 266. The organization and administration of athletic training programs.

490 Instructional Practicum
V 1-4 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

491 Athletic Training Clinical Internship I
3 (0-9) By interview only. Beginning techniques in management of sport injury/illness under supervision of a certified athletic trainer. May be repeated for credit; cumulative maximum 6 hours. S, F grading.

492 Athletic Training Clinical Internship II
3 (0-9) By interview only. Intermediate techniques in management of sport injury/illness under supervision of a certified athletic trainer. May be repeated for credit; cumulative maximum 6 hours. S, F grading.

493 Athletic Training Clinical Internship III
3 (0-9) By interview only. Advanced techniques in management of sport injury/illness under supervision of a certified athletic trainer. S, F grading.

499 Special Problems
V 1-4 May be repeated for credit. S, F grading.

CoPsy

457 [T,D] Chicano/Latino Psychology
3 Same as CES 457.

474 Introduction to Counseling Techniques
2 Prereq 9 hours Educcation or Psychology; junior standing. Practical directive and non-directive counseling techniques for school counselors and classroom teachers. Not open to PhD students in CoPsy.

490 Instructional Practicum
V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 8 hours. S, F grading.

499 Special Problems
V 1-4 May be repeated for credit. S, F grading.

501 Historical and Philosophical Foundations of Counseling Psychology
3 Prereq admission to Counseling Psychology PhD program. History of counseling psychology; philosophical and psychological systems; current identity of counseling psychology as an academic discipline and a profession.

511 Theories, Research, and Techniques in Counseling Psychology I
3 or 4 Philosophical assumptions, theory of personality, counseling process, techniques and relevant research in the major theories of counseling and personality.

512 Theories, Research, and Techniques in Counseling Psychology II
3 or 4 Prereq CoPsy 511. Advanced study of process techniques and outcome research in the field of counseling and psychotherapy; nonspecific process skills are presented and integrated into specific, empirically validated interviews.

513 Career Development
3 or 4 Theories, concepts, methods and findings in career development; vocational assessment and prediction, career counseling intervention outcomes.

515 Ethics and Professional Problems in Counseling Psychology
4 Professional problems; ethical, legal, and training issues, practices, and new issues.

518 Theoretical Foundations of Group Counseling
3 Prereq CoPsy 512 or c/. History, philosophy and theoretical foundations; the group counselor, members, and issues in group counseling.

522 Introduction to Family Counseling
3 Counseling in the family context; intervention strategies, theoretical models, and professional ethics and issues.

523 Topics in Counseling Psychology
V 1-4 May be repeated for credit; cumulative maximum 8 hours. Recent research, developments, issues, and/or applications in selected areas of counseling psychology.

525 Counseling Diverse Populations
3 Prereq CoPsy 512. Research and theories regarding the influence of culture, gender, and lifestyle on counseling processes; application of appropriate assessment/treatment strategies.

527 Individual Appraisal I
3 or 4 Prereq EdPsy 508, 509. Theoretical background and practical skills needed to administer, score, and interpret individual intelligence and structured personality tests; integration of nontest data.

528 Individual Appraisal II
4 Prereq CoPsy 527. Theoretical and empirical bases, psychometric properties, administration, scoring, and interpretation of major projective techniques; emphasis on Rorschach and TAT.

529 Counselor Supervision: Theory, Research, and Practice
3 or 4 Prereq admission to Counseling Psychology PhD program. Survey of major theoretical approaches, techniques, and research in models of counselor supervision and training.

531 Current Issues in School Counseling I
532 Current Issues in School Counseling II 3
Prereq CoPsy 531. Additional coverage of contemporary issues of concern to school counselors; comprehensive developmental school programs, school community dynamics, parental involvement, consultation.

533 Master's Internship in Community Counseling V 4-8 Prereq CoPsy 512, 513, 515; 527 or c//; or by interview only. Supervised experience in the application of counseling theory and techniques in an agency setting. May be repeated for credit; cumulative maximum 8 hours.

535 Master's Internship in School Counseling V 4-8 May be repeated for credit; cumulative maximum 8 hours. Prereq CoPsy 512, 513, 518; 515 or c//; 527 or c//; or by interview only. Supervised experience in the application of guidance and counseling theory and techniques in a school setting. S, F grading.

537 Professional Development in Counseling Psychology 3 NBCC requirements; growth and development, social and cultural foundations, the helping relationship, group dynamics, career, appraisal and research.

541 Clinical and Experimental Hypnosis Seminar 4 Prereq PhD student in counseling, educational, experimental, or clinical psychology. Clinical and experimental hypnosis, emphasizing applied research and clinical methods.

542 Cross-cultural Research in Counseling and Assessment 4 Cross-cultural research methods, concepts, and findings in counseling and assessment.


552 Doctoral Practicum in Counseling Psychology II 4 (2-6) Prereq CoPsy 531, by interview only. Supervised experiences in the application of counseling psychology theory and techniques. S, F grading.

553 Doctoral Practicum in Counseling Psychology III V 2 (1-3) to 4 (2-6) May be repeated for credit; cumulative maximum 12 hours. Prereq CoPsy 552, by interview only. Supervised experiences in the application of counseling psychology theory and techniques. S, F grading.

557 Chicano/Latino Psychology 3 Graduate-level counterpart of CES 457; additional requirements. Credit not granted for both CES 457 and CoPsy 557.

561 Continuing Counseling ESA Certification V 3-6 May be repeated for credit; cumulative maximum 6 hours. Prereq Initial Counselor Certification; equivalent of 180 full days of school counselor experience. Peer review requirements for continuing level ESA Counselor Certification.

562 Advanced Hypnosis and Therapy 3 Prereq CoPsy 512, or by permission. Advanced training emphasizing mind-body therapies and primary health care including hypnosis, biofeedback, and ego-state therapy.

590 Seminar in Research in Counseling Psychology 4 By interview only. Recent developments in counseling psychology research and design applied to PhD dissertation proposals. S, F grading.

597 Counseling Psychology Internship V 2-4 May be repeated for credit; cumulative maximum 8 hours. Supervised internship experience, individual and group counseling, evaluation, assessment, supervision, and teaching. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Educational Administration Courses
Ed Ad
389 Undergraduate Leadership Development 3 Basic leadership through styles, skills and conflict management, critical thinking, problem solving, organizational behavior, and leadership issues.

440 Principles of Service and Leadership 3 Prereq Ed Ad 389, senior standing. Individual and group opportunities to apply leadership skills, theory, and principles to a proposed service learning project.

490 Special Topics V 1-4 May be repeated for credit; cumulative maximum 8 hours. By interview only.

497 Peer Leadership V 1-4 May be repeated for credit. Development of leadership and interpersonal skills for specific peer leadership and paraprofessional positions. S, F grading.

498 Undergraduate Leadership Practicum V 1-4 Prereq Ed Ad 389 or c//. Weekly seminar; development of and reporting on significant project associated with a leadership position held by the student. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Philosophy of Education 3 Development of American educational philosophy.

503 Values and Ethics for Educational Leaders 3 Study of ethical theories, the moral dilemmas of public schooling, and the skills of ethical reasoning; professional code of ethics.

506 Social Context of Education 2 The interpretation of social context issues including historical, legal and cultural factors as these influence policies and practice in education.

507 Social Foundations of Education 3 Educational adaptations to the economic and social trends and forces.

510 Improvement of Instruction 3 Rec teaching experience. Analysis and evaluation of instructional models with emphasis on information processing; implications for changing teaching style.

511 Models of Teaching 2 Theoretical models and strategies of teaching in classrooms; relationships between specific models and curriculum priorities.

514 Basic Principles of Curriculum Design 2 or 3 Rec teaching experience. The application of theoretical concepts and approaches in the planning and design of curricula.

515 Curriculum Implementation 3 Rec teaching experience. Research and practice; innovation and change in curricular organization emphasizing implementation.

516 Instructional and Curricular Leadership 2 or 3 Rec teaching experience. Theory, research, and practice of providing instructional and curricular leadership in schools and other educational settings.

517 In-service Programs 3 Research, theory, and practice in staff development in K-12, higher education, and non-school settings; for administrators, teachers, and other staff.

518 Educational Technology 3 Rec T & L 445 or 446. Research and theory of communication related to instructional resources and current educational technology; problems of planning and administering programs.

520 Seminar in Curriculum and Instruction 2 or 3 Rec teaching experience. Contemporary issues, analyses and developments of educational programs.

521 Topics in Education V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, developments, issues, and/or applications in selected areas of education.

522 Topics in Education V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, developments, issues, and/or applications in selected areas of education.

530 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Topical issues in education responding to shifting demands and skills needed by parents, teachers, school administrators and community leaders.

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536 Introduction to Qualitative Research in Education 3 Prereq Ed Psy 505. Introduction to the theory and methods of qualitative research; field relations, data collections, data analysis, hypothesis development, and theory generation.

537 Advanced Qualitative Research in Education 3 Prereq Ed Ad 536. Advanced theory and methods of qualitative research; theoretical foundations, data collection and analysis, and reporting.

538 Special Topics in Qualitative Research in Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Ed Ad 536.

540 Current Issues in Sport Management 3 Solutions-oriented investigation of current issues faced by sport managers/administrators; interpretation of research literature; procedures for issue resolution.

560 Student Personnel Services in Higher Education 2 or 3 Philosophy, structure, functions, and organization of student personnel services.

561 Students Development Theory, Research, and Application 3 Student development theory, related research and the application of theory to practice in student affairs work.

562 Professional Problems in Student Affairs 3 Prereq Ed Ad 560, 561. The organization, programs and professional issues related to selected student affairs programs and units.

563 Models of College Student Social Identity 3 Prereq Ed Ad 561. Critique and understand social identity models as they relate to teaching, advising, and working with diverse student populations.

564 Seminar in Student Affairs 3 Prereq graduate standing. Contemporary issues, analyses, and development of student affairs programs and institutions.

565 Master's Practicum in Student Affairs 3 (0-9) Prereq graduate student with 15 hours of completed course work in education. Selected supervised experiences in professional student affairs settings which provide for the investigation/application of theory/methods gained through formal course work.

566 PhD Practicum in Student Affairs V 1-3 May be repeated for credit; cumulative maximum 3 hours. Prereq must have grad assistantship. Selected supervised experiences in professional affairs settings which provide for the investigation/application of theory/methods gained through formal course work.

567 Organizational Leadership of Multicultural Change 3 Prereq graduate standing. Reflection on experience and examination of the theory of practice or organizational leadership in the context of diversity.

568 Finance and Budgeting in Higher Education 3 Prereq undergraduate macro and microeconomics or by permission of instructor; graduate standing. Exposes students to the fundamentals of higher education budgeting and finance.

570 Community and Technical Colleges 3 For teachers and administrators. Development and function of community and technical colleges.

571 Undergraduate and Community/Technical College Teaching 3 Rec Ed Ad 570 or 572. Concepts, principles, issues, and procedures in undergraduate curriculum development; goal-oriented educational strategies and delivery systems.

572 The American College and University 3 History, philosophy, objectives, and issues of colleges and universities as social institutions.

573 Issues in Higher Education 3 Selected contemporary issues in higher education.

574 Seminar in Higher Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Contemporary issues, analyses and developments of higher education programs and institutions.

575 Administrative Concepts in Sport Organizations 3 Effective management for sport programs. Analysis of dynamic management process necessary for improvement of productivity in sport organizations.

576 Marketing of Sport Events and Programs 3 Prereq SpMgt 464 or equivalent background. Principles of sport marketing including public relations, corporate sponsorship, and service quality for sport organizations.

577 Law and Risk Management in the Sport Industry 3 Prereq SpMgt 377 or equivalent background. Use of risk management perspective to explore the law as it applies to the management concerns of sport organizations.

578 Higher Education Law and Ethics 3 Legal and ethical aspects of higher education with special reference to administrators, faculty, and students in higher education institutions.

579 Administration of Higher Education 3 Organization, administration and leadership of universities, colleges, and community colleges.

580 School Organization and Administration 3 Rec teaching experience. Readings and discussions on the theories and practices of school organization and administration. Cooperative course taught jointly by WSU and UI (EdAd 509).

581 Politics in Education 3 Prereq graduate standing. Examining the intrapersonal, organizational politics and political dilemma, particularly as they pertain to marginalized groups.

582 Policy Formation and Analysis in Education 3 Political and organizational policy formation processes in educational organizations; policy analysis in education.

583 Community and Communications 3 Social, political, and economic relationships between education and the community; methods of public polling and campaign strategy techniques.

584 Human Resource Management 3 Human relations in education; problems involved and practical solutions considered.

585 Financial Management in Education 3 Economics and financing of education; financial planning, budget development, investment analysis, bonding, cost effectiveness; current trends in educational finance. Cooperative course taught jointly by WSU and UI (EdAd 535).

586 Management of Facility Planning 3 Principles and procedures in the development of educational specifications, conducting needs assessment, forecasting; selecting an architect.

587 Seminar in School Administration V 1-6 May be repeated for credit; cumulative maximum 6 hours. Interdisciplinary seminars; related studies; discussions in several areas by specialists.

588 The Law and Education 3 Fundamental legal principles within which public education functions; applicable school codes of Washington and other states; review important court cases.

589 Leadership Development Seminar 3 Improving knowledge and skills in strategic planning, decision making, leadership issues, conflict, motivation, staff development, productivity, and stress.

590 Internship 3 or 6 May be repeated for credit; cumulative maximum 12 hours. By interview only. In professional positions. S, F grading.

596 Preparing Grant Proposals 3 Identification of funding sources; analysis, evaluation, and production of grant proposals.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
Educational Psychology Courses

EdPsy

401 Classroom Assessment, Elementary 2 or 3 Prereq certified education major; T & L 301; c/ in T & L 310, 403, 413, 445, 490 (3 credits); and Sp Ed 420 or 421. Principles and practice of high-quality classroom assessment in the elementary schools.

402 Classroom Assessment, Secondary 2 Prereq certified education major; T & L 301, 302, 303, and 317/318. Principles and practice of high-quality classroom assessment in secondary schools.

490 Instructional Practicum V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 8 hours. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Scholarly Analysis and Writing for Educators 3 Prereq graduate standing. Develop advanced information literacy to identify information resources; critically analyze education research; analyze and construct oral and written scholarly arguments.

502 Theoretical Foundations of Learning and Instruction 3 Historical and contemporary theories of learning and instruction: application of theory in counseling and teaching settings.

503 Advanced Educational Psychology 2 Theories of learning and development as applied to education.

504 Classroom-focused Research Methods 2 Methods, design, implementation, and application of results in classroom context.

505 Research Methods I 3 Research methods; literature review; design, implementation, and interpretation of results.

508 Educational Statistics 3 This course is designed to provide graduate students with an introductory course in applied statistics for the behavioral sciences. Cooperative course taught jointly by WSU and UI (EdAd 507).

509 Educational Measurements: Test Development and Assessment 2 or 3 Rec EdPsy 508. Theory and use of standardized educational measurement instruments; intelligence, aptitude, and achievement tests; measurement of outcomes.

510 Assessment of Learning 3 Prereq graduate standing. Assessment of student learning, school and district evaluation; particularly appropriate for school administrators.

511 Large Scale Educational Assessment and Testing 3 Prereq EdPsy 508; 509. Large-scale educational assessment and test development and evaluation; history and policy uses of achievement tests.

519 Practicum in College Instruction 1 (0-3) May be repeated for credit; cumulative maximum 4 hours. By interview only. Supervised experience in college teaching. S, F grading.

521 Topics in Educational Psychology V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, developments, issues, and/or applications in selected areas of educational psychology.


568 Research Methods II 3 Prereq EdPsy 505, 565. Integration and application of research skills in writing proposals, dissertations, papers for publication; interpreting, critiquing, and synthesizing research studies.

569 Seminar in Quantitative Techniques in Education 2 or 3 May be repeated for credit; cumulative maximum 6 hours. Prereq EdPsy 565. Application of parametric and nonparametric statistics, data processing using computer packages in educational research.

570 Introduction to Program Evaluation 3 Prereq EdPsy 505. Introduction to strategies and techniques for evaluation of educational and social programs.

571 Advanced Program Evaluation 3 Prereq EdPsy 570. Advanced methods and techniques of program evaluation.

597 Educational Psychology Internship V 2-4 May be repeated for credit; cumulative maximum 8 hours. Supervised internship experience in educational psychology, measurement and evaluation. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Exercise Science Courses

ExSci

370 Physical Assessment 1 (0-3) Prereq ExSci 364. Application of common physiological/physical measurements in a variety of subjects. May be repeated for credit; cumulative maximum 4 hours. S, F grading.

463 Physiology of Exercise 4 (3-3) Prereq Biol 315, ExSci 380, or MvtSt 262; Biol 251. Advanced undergraduate exercise physiology with emphasis on mechanisms regulating physiological responses to exercise across the life span.


480 Introduction to Cardiac Rehabilitation 3 Prereq ExSci 463, 470, 476. Principles and applications of exercise testing and prescription to cardiac rehabilitation situations and populations.

491 Internship 12 Prereq all required courses in Exercise Science major. Supervised practicum in agency, clinic, or business. S, F grading.

563 Exercise and Immune Response 3 Rec ExSci 463. Influence of physical exercise on immune response and consequent impact on host susceptibility to disease and infection.

565 Muscle Physiology and Exercise Biomechanics 3 Rec ExSci 463. Bioenergetic, striated muscle metabolic, and neuroendocrine responses to exercise and training.

567 Cardiopulmonary Exercise Physiology 3 Rec ExSci 463. Pulmonary, circulatory, thermoregulatory, fluid balance and physiological system integration responses to exercise and training.

568 Clinical Assessment and Prescription 3 Prereq ExSci 463, 476, 567. Development of knowledge and skills in clinical testing analysis, and exercise prescription for clinical populations. Cooperative course taught by UI (PE 593), open to WSU students.

589 Research Techniques 2 (1-3) or 3 (2-3) Application and use of research techniques and tools in physiology of exercise.

590 Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Opportunity in an educational, industrial, municipal or private sports or recreational setting; direct participation in tasks, research and reporting activities. S, F grading.

596 Seminar 1 or 2 May be repeated for credit.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Kinesiology Courses

Kin

551 Assessment and Evaluation of Motor Dysfunction 3 Principles of assessment/evaluation of motor dysfunction; tools and techniques: administration, interpretation, and translation into program plans. Cooperative course taught by WSU, open to UI students (PE 551).

563 Exercise and Immune Response 3 Rec MvtSt 463. Influence of physical exercise on immune response and consequent impact on host susceptibility to disease and infection.

573 Philosophical Perspectives of Sport and Physical Activity 3 Ontological, ethical, aesthetic views of physical activity.
<table>
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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Hours</th>
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<tr>
<td>574</td>
<td>Social and Cultural Issues of Physical Activity and Sport</td>
<td>3 Physical Activity and Sport</td>
<td>3</td>
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<td>578</td>
<td>Sports in Society</td>
<td>3 The social significance of sports; sociology of sport research</td>
<td>3</td>
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<td>582</td>
<td>Observation and Analysis of Teaching</td>
<td>3 (2-3) Systematic approach to observation/analysis of teaching physical activity; evaluation of instructional process</td>
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<td>586</td>
<td>Methods of Health and Physical Education</td>
<td>2 Physical activity and health promotion for school programs K-8</td>
<td>2</td>
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<td>596</td>
<td>Seminar</td>
<td>1 or 2 May be repeated for credit.</td>
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<td>597</td>
<td>College Teaching: Physical Education</td>
<td>1 (0-3) May be repeated for credit; cumulative maximum 4 hours. By interview only. Supervised experience in college teaching.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>600</td>
<td>Movement Studies Courses</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>196</td>
<td>Introductory Topics</td>
<td>1 May be repeated for credit; cumulative maximum 4 hours. Physical education, leisure, recreation, dance, health sports.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>199</td>
<td>Human Motor Development</td>
<td>3 Development and performance of human motor patterns; understanding of motor development; observation and analysis of foundations of movement.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>262</td>
<td>Human Anatomy</td>
<td>4 (3-3) Comprehensive survey of the structure and organization of the human body; emphasis on skeletomuscular, cardiovascular, nervous, and respiratory systems. Cooperative course taught by WSU, open to UI students (PE 261).</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>264</td>
<td>Fitness</td>
<td>3 (2-3) Physiological, mechanical, and health-related basis of fitness practices.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>289</td>
<td>Introduction to Youth Sports</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>296</td>
<td>Applied Computer Technology</td>
<td>1 (0-3) Application of scholarly concepts with the help of multimedia technology.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>314</td>
<td>Philosophy of Human Movement</td>
<td>3 The philosophical dimensions of physical education, sport, and dance.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>317</td>
<td>Practicum and Seminar</td>
<td>3 (1-6) 10 hours in the subject-matter major. S, F grading.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>362</td>
<td>Biomechanics</td>
<td>3 Prereq junior standing; MvtSt 262 or Zool 315; math proficiency requirement. Anatomical and mechanical influences on human movement.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>380</td>
<td>Introduction to Exercise Physiology</td>
<td>3 Prereq Zool 251. Introduction to exercise physiology as it relates to sport, physical training, and performance.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>384</td>
<td>Lifeguard Instruction</td>
<td>1 (0-3) Prereq ARC Lifeguard training; CPR; first aid. Methods, materials, and resources; American Red Cross lifeguard instructor certificates awarded to those who qualify.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>385</td>
<td>Methods of Water Safety and Swimming Instruction</td>
<td>3 (2-3) Prereq ARC Lifeguard Training or Emergency Water Safety certificates; ARC Swimmer Certificate, or equivalent ability. Methods, materials, and resources; American Red Cross certificates awarded to those who qualify.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>390</td>
<td>Practicum in Coaching</td>
<td>V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Combined maximum for MvtSt 300-level practicum courses 8 hours. By interview only. Supervised practicum.</td>
<td>V 1</td>
<td></td>
</tr>
<tr>
<td>392</td>
<td>Practicum in Physical Education</td>
<td>V 1 (0-3) to 4 (0-12) May be repeated for credit, cumulative maximum 8 hours. Combined maximum for MvtSt 300-level practicum courses 8 hours. By interview only. Supervised practicum.</td>
<td>V 1</td>
<td></td>
</tr>
<tr>
<td>415</td>
<td>Assessment</td>
<td>3 (2-3) Prereq Math 205, senior standing. Measurement and evaluation for human performance.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>461</td>
<td>[M] Motor Skill Acquisition</td>
<td>3 Motor learning and motor control areas; neural mechanisms, practice, feedback, retention, and transfer application of theoretical concepts.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>473</td>
<td>Physical Education for Grades K-8</td>
<td>2 (1-3) Materials, management methods, lab experiences for teaching physical education K-8.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>475</td>
<td>Marginality and Movement</td>
<td>3 Understanding of the current status of women’s sports participation in the U.S. and of the woman participant herself.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>481</td>
<td>Analysis of Human Movement</td>
<td>3 (2-3) Prereq MvtSt 362. Application of biomechanical principles for movement analysis.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>483</td>
<td>Fitness Education Methods</td>
<td>3 (2-3) Prereq MvtSt 481. Basic principles, theory, practice of development and maintenance of fitness for health and physical performance; emphasis on application for teachers.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>484</td>
<td>Principles of Movement for Individuals with Disabilities</td>
<td>3 Knowledge, understanding, and skills for teaching movement activities to individuals with disabilities.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>490</td>
<td>Instructional Practicum</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 6 hours. S, F grading.</td>
<td>V 1</td>
<td></td>
</tr>
<tr>
<td>496</td>
<td>Special Topics</td>
<td>1 May be repeated for credit; cumulative maximum 4 hours. Physical education, leisure, recreation, dance, health sports.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>499</td>
<td>Special Problems</td>
<td>V 1-4 May be repeated for credit. S, F grading.</td>
<td>V 1</td>
<td></td>
</tr>
<tr>
<td>276</td>
<td>Introduction of Sport Management</td>
<td>3 Principles and concepts in sport management; overview of sport industries and career opportunities. Not open to seniors or first semester freshmen.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>284</td>
<td>Introductory Principles of Coaching</td>
<td>2 Overview of coaching responsibilities and basic understanding in the sport sciences utilized in coaching.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>290</td>
<td>Sport Programs</td>
<td>3 (2-3) Philosophies and program content of public/private sport programs; laboratory experiences in school, college, and community sport programs.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>365</td>
<td>Ethics and Moral Reasoning in Sport</td>
<td>3 Prereq SpMgt 276; junior standing. Understanding and application of ethical theory and principles of moral reasoning to the analysis of issues and dilemmas in sport.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>367</td>
<td>[M] Sport in American Society</td>
<td>3 Prereq SpMgt 276; junior standing. Examination of the role of sport in contemporary American society as well as the relationship between sport and other social institutions.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>374</td>
<td>Sport Finance</td>
<td>3 Prereq Acctg 230; junior standing. Introduction to financial analysis, budgeting and revenue acquisition for both “for profit” and “not for profit” sport organizations.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>377</td>
<td>Legal Aspects of Sport</td>
<td>3 Prereq SpMgt 276; junior standing. Legal aspects of the supervision, management and business of sport.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>394</td>
<td>Practicum in Sport Management</td>
<td>1 (0-3) to 4 (0-12) By interview only. Supervised practicum. May be repeated for credit; cumulative maximum 8 hours. S, F grading.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>399</td>
<td>Professional Work Experience</td>
<td>V 1 (0-3) to 6 (0-18) Prereq sophomore standing, by interview only. Paid or volunteer, off-campus work experience with a sport organization. S, F grading.</td>
<td>V 1</td>
<td></td>
</tr>
<tr>
<td>464</td>
<td>Sport Marketing</td>
<td>3 Prereq SpMgt 365. An examination of sport as a consumer product and as a medium by which to sell consumer products.</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
School of Electrical Engineering and Computer Science

www.eecs.wsu.edu/EME 102
509-335-6602


The School of Electrical Engineering and Computer Science offers courses of study leading to the degrees of Bachelor of Science in Electrical Engineering (BSEE), Computer Engineering (BSCpe), or Computer Science (BSCS), Bachelor of Arts in Computer Science (BACS), Master of Science in Electrical Engineering (MSEE) or Computer Science (MSCS), and Doctor of Philosophy. The programs leading to the BSEE and BSCpe are accredited by the Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology (ABET). The programs leading to the BSCS and BACS are accredited by the Computing Science Accreditation Commission of ABET.

Electrical Engineering

The curriculum in electrical engineering is designed to give the student fundamental knowledge in the areas of general interest to all electrical engineers. The course of study is therefore oriented toward the basic theory and concepts which prepare students for entry into any of the many activities open to members of the profession including research, design, development, operations, management, teaching, sales, and consulting. Laboratory experience is emphasized to provide familiarity with electrical, electronic, and computing equipment and with experimental techniques. Modern laboratories are available for electrical circuits, electronics, power systems, electromagnetics, measurements, digital signal processing, wireless communications, and computers. Students are exposed to a variety of up-to-date computing environments to aid in their studies.

The curriculum is designed so that the equivalent of the first three to four semesters may be transferred from community colleges with minimal difficulty. The additional basic material common to all branches of electrical engineering is concentrated in the junior year, and maximum flexibility is permitted in the senior year, allowing the student to develop a breadth of interest or to select an area of specialization. The program offers a two-semester senior design project that typically involves industry cooperation, and provides students with valuable experience in applying their skills to solve real-world problems.

We expect our graduating students will be able to:
1) apply knowledge of mathematics, science, and engineering; 2) design and conduct experiments as well as analyze and interpret data; 3) design a system, component, or process to meet desired needs; 4) function on multidisciplinary teams; 5) identify, formulate, and solve engineering problems; 6) communicate effectively; and 7) use techniques, skills, and modern engineering tools necessary for engineering practices. Graduates will have a broad education and knowledge of contemporary issues necessary to understand the impact of engineering solutions in global and societal context.

Computer Science

Computer science is a discipline that provides a scientific foundation for computing expertise and skills. The curriculum is geared to provide the fundamental computing concepts derived from mathematics and sciences, and the practical application of these concepts through substantial hands-on course project experiences. The coursework in computer science prepares students for a variety of careers that involve the extensive use of computers.

There are two major degrees offered within computer science: the BS in Computer Science, and the BA in Computer Science. Graduates in both the degree programs will have a solid technical background in mathematics and sciences. The BS degree requires substantial basic and advanced computer science course work and is the traditional computer science degree. The BA degree is designed for multidisciplinary students who wish to learn the basics of computer science and apply it to a different field. This degree requires a minor in another area, such as art, biochemistry, music, psychology, architecture, etc.

The program offers courses in a wide variety of topics including theory of computation, design and analysis of algorithms, software engineering, operating systems, computer networks, computer graphics, image processing, distributed systems, and database systems. The coursework is supplemented by several general purpose computing labs dedicated to computer science students, and specialized labs for courses such as operating systems, software engineering, computer animation, and computer networking. Option area course sequences allow students to specialize in specific areas such as computer graphics and animation, computer systems software, software engineering, or computer engineering.

We expect our graduating students will be able to:
1) apply knowledge of aspects of mathematics relevant to computer science; 2) demonstrate proficiency in analysis and design of data structures and algorithms; 3) apply programming language concepts, including the ability to contrast and choose
programming languages appropriate to a project; 4) specify, analyze, document, design, prototype, implement, test, and demonstrate a software project; and 5) communicate effectively and collaborate with peers. Graduates will have an understanding of social, professional, and ethical issues related to computing.

Certification

Students interested in majoring in any of the School of Electrical Engineering and Computer Science's bachelor degree programs should apply for certification as early as possible in their studies after completion of the respective courses listed below. Applications for certification are accepted prior to December 1 and May 1 for certification effective the following spring and fall, respectively. Qualification for initial certification, as well as continuation of certified status, will be evaluated based on several criteria including academic integrity, overall GPA, and GPA in mathematics, science, and electrical engineering or computer science courses. Acceptance will be made after the current semester grades are available and students will be notified of the decision as soon as possible.

Students may apply for certification into the Bachelor of Science in Electrical Engineering degree program after completion of Biol 102 or Chem 105; Cpt S 121, 122; Math 171, 172, 273; Phys 201, 202.

Students may apply for certification into the Bachelor of Science in Computer Engineering degree program after completion of Biol 102 or Chem 105; Cpt S 121, 122; EE 214; Math 171, 172, 216; Phys 201, 202.

Students may apply for certification into the Bachelor of Science in Computer Science degree program after completion of Biol 102 or Chem 105; Cpt S 121, 122; Math 171, 172, 216; Phys 201, 202.

Students may apply for certification into the Bachelor of Science in Computer Science degree program after completion of Cpt S 121, 122, 223; EE 214; Math 171, 172, 216; Phil 201; Phys 201. Students may apply for certification into the Bachelor of Arts in Computer Science degree program after completion of Cpt S 121, 122, 223; Math 201, 202, 216; Phil 201. Math 171, 172 may be substituted for Math 201, 202.

Transfer Students

Students planning to transfer from other institutions should carefully note the sequence of courses. Transfers from community colleges should consult the information available on the Web for transfer students at www.salc.wsu.edu/transfer or should write directly to the School of Electrical Engineering and Computer Science for specific information.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanity, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

Bachelor of Arts, Computer Science Requirements (122 Hours) FYDA

No courses listed in this schedule of study may be taken on a pass/fail basis. All listed EE and Cpt courses, required electives, and prerequisites to these courses must be completed with a grade of C or better.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cpt S 121</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 or GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 201</td>
<td>3</td>
</tr>
<tr>
<td>Phil 201 [H] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cpt S 122</td>
</tr>
<tr>
<td>GenEd 110 or GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Math 202 [N] (GER)</td>
</tr>
<tr>
<td>Math 216</td>
</tr>
<tr>
<td>Soc 101 [S,D] (GER)</td>
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</table>

Second Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cpt S 223</td>
<td>3</td>
</tr>
<tr>
<td>Lab Sciences [B,P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Math 212</td>
<td>3</td>
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<tr>
<td>Minor Elective</td>
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Second Term

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Cpt S 224</td>
</tr>
<tr>
<td>E E 214</td>
</tr>
<tr>
<td>Lab Sciences [B,P] (GER)</td>
</tr>
<tr>
<td>Math Elective</td>
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<tr>
<td>Minor Elective</td>
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Third Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cpt S 355</td>
<td>3</td>
</tr>
<tr>
<td>E E 234</td>
<td>3</td>
</tr>
<tr>
<td>Inter-cultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Lab Sciences [B,P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Science Elective [B,F,Q] (GER)</td>
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Second Term

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Cpt S Elective</td>
</tr>
<tr>
<td>Cpt S 322 [M]</td>
</tr>
<tr>
<td>Engl 402 [W] or 403 [W] (GER)</td>
</tr>
<tr>
<td>Minor Electives</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
</tr>
</tbody>
</table>

Fourth Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Cpt S Elective</td>
<td>1</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Science [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Cpt S 422 [M]</td>
<td>3</td>
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<tr>
<td>Minor Elective</td>
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Second Term

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Advanced Cpt S Elective</td>
</tr>
<tr>
<td>Cpt S 402</td>
</tr>
<tr>
<td>Minor Elective</td>
</tr>
<tr>
<td>Tier III Humanities or Social Sciences Course [T] (GER)</td>
</tr>
</tbody>
</table>

Bachelor of Science, Computer Science Requirements (123 Hours) FYDA

No courses listed in this schedule of study may be taken on a pass/fail basis. All listed EE and Cpt courses, required electives, and prerequisites to these courses must be completed with a grade of C or better.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cpt S 121</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Phil 201 [H] (GER)</td>
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</table>

Second Term

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cpt S 122</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
</tr>
<tr>
<td>Math 172</td>
</tr>
<tr>
<td>Math 216</td>
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</table>

Second Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cpt S 223</td>
<td>3</td>
</tr>
<tr>
<td>E E 214</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 220</td>
<td>2</td>
</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
<td>4</td>
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</table>

Second Term

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
</tr>
<tr>
<td>Cpt S 224</td>
</tr>
<tr>
<td>E E 234</td>
</tr>
<tr>
<td>Phys 202 [P] (GER)</td>
</tr>
<tr>
<td>Soc 101 [S,D] (GER)</td>
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</tbody>
</table>

Third Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cpt S 355</td>
<td>3</td>
</tr>
</tbody>
</table>
Cpt S Option Courses¹ 6
Econ 101 [S] or 102 [S] (GER) 3
Math 273 or 301 2 or 3
Stat 360 3
Second Term
Cpt S 317 3
Cpt S 322 [M] 3
Cpt S 360 4
Cpt S Option Course¹ 3
Engl 402 [W] or 403 [W] (GER) 3
Complete Writing Portfolio

Fourth Year
First Term
Cpt S 422 [M] 3
Cpt S 450 3
Cpt S 451 or 452 3
Cpt S Option Course¹ 3
Intercultural Studies [I,G,K] (GER) 3
Second Term
Cpt S 402 3
Cpt S 460 3
Cpt S Option Course¹ 6
Tier III Humanities or Social Sciences Course [T] (GER) 3

¹ Eighteen credits (6 courses) of option area classes are required for completion of the degree program. The option courses are chosen from upper-level computer science related courses and must be approved by an advisor.

COMPUTER ENGINEERING REQUIREMENTS
(128 HOURS)  
No courses listed in this schedule of study may be taken on a pass/fail basis. All listed E E and Cpt S courses, required electives, and prerequisites to these courses must be completed with a grade of C or better.

First Year
First Term
Chem 105 [P] (GER) 4
Cpt S 121 Prog Design 4
Engl 101 [W] (GER) 3
Math 171 [N] (GER) 4
Second Term
Cpt S 122 4
Math 172 4
Math 216 3
Phys 201 [P] (GER) 4

Second Year
First Term
Cpt S 223 3
E E 214 3
GenEd 110 or 111 [A] (GER) 3
Math 220 2
Math 273 2
Phys 202 [P] (GER) 4
Second Term
E E 234 3
E E 261 3
E E 262 1
GenEd 110 or 111 [A] (GER) 3
Intercultural Studies [I,G,K] (GER) 3
Math 315 3

Third Year
First Term
E E 311 3
E E 321 3
E E 324 4
E E 331 3
Engl 402 [W] or 403 [W] (GER) 3
Second Term
Biological Sciences [B] (GER) 3 or 4
Cpt S 360 4
E E 334 4
Engineering Science Elective¹ 3
Stat 360 3
Complete Writing Portfolio

Fourth Year
First Term
Approved Cpt E Technical Electives² 3
Arts and Humanities [H,G] (GER) 3
Cpt S 455 3
Design I 3
E E 415 2
Econ 101 [S] or 102 [S] (GER) 3
Second Term
Approved Cpt E Technical Electives² 6
Cpt S 460 or 466 3
E E 416 [M] 2
Tier III Humanities or Social Sciences Course [T] (GER) 3

¹ Choose from C E 211, M E 212, M E 301, or MSE 302.
² Technical electives must all be 300 or 400 level courses and must be chosen with an advisor’s approval.

ELECTRICAL ENGINEERING REQUIREMENTS
(128 HOURS)  
No courses listed in this schedule of study may be taken on a pass/fail basis. All listed E E and Cpt S courses and prerequisites to these courses must be completed with a grade of C or better.

First Year
First Term
Chem 105 [P] (GER) 4
E E 120 2
Engl 101 [W] (GER) 3
GenEd 110 [T] or 111 [A] (GER) 3
Math 171 [N] (GER) 4
Second Term
Cpt S 121 4
GenEd 110 [A] or 111 [A] (GER) 3
Math 172 4
Math 220 2
Phys 201 [P] (GER) 4

Second Year
First Term
Biological Science [B] (GER) 3
Cpt S 122 4
E E 214 3
Math 237 3
Phys 202 [P] (GER) 4
Second Term
E E 234 3

Third Year
First Term
Arts & Humanities [H,G] (GER) 3
E E 311 3
E E 321 3
Engineer Science II¹ 3
Engl 402 [W] or 403 [W] (GER)² 3
Complete Writing Portfolio

Fourth Year
First Term
E E 415 2
E E 489 3
Intercultural Studies [I,G,K] (GER) 3
Stat 443 3
Technical Electives³ 6
Second Term
E E 416 3
Technical Electives³ 8
Tier III Humanities or Social Sciences Course [T] (GER) 3

¹ Choose from C E 211, M E 212, M E 301, or MSE 302.
² E E 362 and Engl 402 are taken concurrently.
³ Technical electives must all be 300-400-level courses. The capstone design requirement is satisfied by the two-semester sequence, E E 415, E E 416. Technical electives must be selected with an advisor’s approval.

Minors

Computer Engineering
16 semester hours of computer related courses in electrical engineering are necessary to earn a minor, 9 of which must be 300-400-level. E E 214, 234, and 324 are required.

Computer Science
The minor in computer science consists of 20 credits which must include Cpt S 121, 122, 223, and three 300-400-level Cpt S courses excluding computer skills and literacy courses. All prerequisites for minor courses must be met. The minor program must be approved by the computer science undergraduate coordinator.

Electrical Engineering
16 semester hours of courses in electrical engineering are necessary to earn a minor, 9 of which must be 300-400-level. Three courses (9 semester hours) in addition to E E 214, 261, and 262 are required.
Information Technology
16 semester hours which must include Cpt S 121, 122, and three more courses that may include Cpt S 223 and other 300-400-level Cpt S courses. Credit will not be granted for both Cpt S 330 and 430. All prerequisites for minor courses must be met. The minor program must be approved by the computer science undergraduate coordinator.

Description of Courses

Computer Science Courses

With the exception of the Computer Skills and Literacy courses, enrollment in 300-400-level computer science courses is restricted to certified majors or minors in computer science, computer engineering, or electrical engineering, and to juniors and seniors officially certified into other degree programs requiring these computer science courses.

Cpt S

120 Innovation in Design 2 Same as M E 120.

121 Program Design and Development 4 (3-3) Prereq Math 107, 201 or satisfactory math placement score. Formulation of problems and top-down design of programs in a modern structured language for their solution on a digital computer.

122 Data Structures 4 (3-3) Prereq Cpt S 121 or equivalent. Advanced programming techniques: data structures, recursion, sorting and searching, and basics of algorithm analysis.

153 BASIC Programming 3 Comprehensive programming practice using contemporary instances of the BASIC programming language.

203 FORTRAN Programming 2 Prereq Math 171 or C//. Comprehensive programming practice using FORTRAN.

207 Introduction to the Internet 3 Prereq Cpt S 105 or 121. Skills and strategies for utilization of the resources of the Internet.

223 Advanced Data Structures 3 Prereq Cpt S 122; Math 216 or equivalent. Advanced data structures, object oriented programming concepts, concurrency, and program design principles.

224 Programming Tools 2 Prereq Cpt S 122, rec 223 or equivalent. Debugging tools, scripting languages, UNIX programming tools, introduction to graphical user interface programming.

251 C Programming Language 2 Prereq Math 171 or C/. Comprehensive programming practice using C.

252 Introduction Windows Development Programming 3 Prereq Cpt S 122. Introduction to Windows application programmers interface, emphasizing what constitutes a well behaved Windows program.

253 Java Programming Language 3 Prereq Cpt S 121, 153, 203, or 251. Comprehensive programming practice using Java.

283 Topics in Computer Skills and Literacy V 1-3 May be repeated for credit; cumulative maximum 9 hours. Current topics in computer skill development and computer literacy.

302 Unix System Administration 3 (2-3) Prereq Cpt S 121. Functions and responsibilities of Unix system administrators; disks, networking, accounting, and policy.

306 Programming for Engineers I 3 Prereq Math 220, 273, 315. Problem-solving methods, software development principles structured programming with engineering applications.

307 Programming for Engineers II 3 Prereq Cpt S 306. Continuation of Cpt S 306; advanced programming topics and data structures with engineering applications.

317 Automata and Formal Languages 3 Prereq Cpt S 122, Math 216. Finite automata, regular sets, pushdown automata, context-free language, Turing machines and the halting problem.

322 [M] Software Engineering Principles I 3 Prereq Cpt S 224, Math 216, C// in Engl 402. Introduction to software engineering; requirements analysis, definition, specification including formal methods; prototyping; design including object and function oriented design.

330 Numerical Computing 3 Prereq Cpt S 121, 203, or 251; C// in Math 315. Power and limitation of numerical solutions; design, analysis and implementation of numerical algorithms; visualization and rendering.

355 Programming Language Design 3 Prereq Cpt S 223, 224. Design concepts of high-level programming languages; survey of existing languages, experience using some languages.

360 Systems Programming 4 (3-3) Prereq Cpt S 223; E E 234. Implementation of systems programs, concepts of computer operating systems; laboratory experience in using operating system facilities.

401 [T] Computers and Society 3 Prereq Phil 260 or Soc 101; completion of one Tier I and three Tier II courses; completion of University Writing Portfolio. Ethical and societal issues related to computers and computer networks; computers as enabling technology; computer crime, software theft, privacy, viruses, worms.

402 [M] Social and Professional Issues in Computer Science 3 Prereq Cpt S 121; certified in computer science; completion of University Writing Portfolio. Social, legal, ethical and professional issues that arise in the context of computing.

422 [M] Software Engineering Principles II 3 Prereq Cpt S 322. Dependable software systems; software verification and validation, testing; CASE environments; software management and evolution.

423 Software Engineering Laboratory 3 (1-6) Prereq Cpt S 422. Laboratory/group design project for large-scale software development, requirements analysis, estimation, design, verification techniques.

425 Network Security 3 Prereq Cpt S 360. Practical topics in network security; policy and mechanism; intrusion, detection, prevention, response, and cryptography. Cooperative course taught by UI (CS 423), open to WSU students.

427 Computer Security 3 Prereq Cpt S 360, Math 216. Computer security concepts, models and mechanisms; encryption technology, formal models, policy and ethical implications. Credit not granted for both Cpt S 427 and 527.

430 Numerical Analysis 3 Same as Math 448. Credit not granted for both Cpt S 430 and S30.

434 Neural Network Design and Application 3 Prereq Cpt S 122, Stat 360. Hands-on experience with neural network modeling of nonlinear phenomena; application to classification, forecasting, identification and control. Credit not granted for both Cpt S 434 and 534.

435 Concurrent and Real-Time Systems 3 Prereq Cpt S 322, 467; engineering consortium students only. Analysis, design, and programming of concurrent and real-time systems.

440 Introduction to Artificial Intelligence 3 Prereq Cpt S 122; Math 212 or 360. Basic issues of knowledge representation and automated problem solving; introduction to the theory and application of expert systems technology.

442 Computer Graphics 3 Prereq Cpt S 223, 224; Math 220. Raster operations; transformations and viewing; geometric modeling; visibility and shading; color. Credit not granted for both Cpt S 442 and 542. Cooperative course taught by WSU, open to UI students (CS 324).

443 Human-Computer Interaction 3 Prereq junior standing. Concepts and methodologies of engineering, social and behavioral sciences to address ergonomic, cognitive, social and cultural factors in the design and evaluation of human-computer systems.

445 Digital Image Processing 3 Prereq Cpt S 330 or E E 341; Math 315; C// in Stat 360 or 443. Digitization, coding enhancement, restoration, reconstruction, segmentation, and description of digital images. Cooperative course taught by WSU, open to UI students (CS 404).

446 Animation Programming 3 (1-4) Prereq Cpt S 122. Introduction to computer animation production, animation programming techniques, simulation, and dynamic visualization.

450 Design and Analysis of Algorithms 3 Prereq Cpt S 223, 317; Stat 360. Analysis of data structures and algorithms; computational complexity and design of efficient data-handling procedures.

451 Introduction to Database Systems 3 Prereq Cpt S 223, 224. Introduction to database concepts, data models, database languages, database design, implementation issues.

453 Graph Theory 3 Same as Math 453. Credit not granted for both Cpt S 453 and 553.

455 Introduction to Computer Networks 3 Prereq Cpt S 360. Concepts and implementation of computer networks; architectures, protocol layers, internetworking and addressing case studies.

456 Secure Wireless Networks 3 Prereq Cpt S/EE 455 or permission. Mobile wireless networks; wireless ATM, threat models, authentication, detection mechanisms for security attacks. Credit not granted for both Cpt S 456 and 556.

460 Operating Systems and Computer Architecture 3 Prereq Cpt S 360. Operating systems, computer architectures, and their interrelationships in micro, mini, and large computer systems.

461 Digital Sound Synthesis and Processing 3 Same as E E 461.

464 Distributed Systems Concepts and Programming 3 Prereq Cpt S 360. Concepts of distributed systems; naming, security, networking, replication, synchronization, quality of service; programming middleware including CORBA, XML, DCOM/SOAP. Credit not granted for both Cpt S 464 and 564. Cooperative course taught by WSU, open to UI students (CS 404/504).

465 Microcomputer Systems 3 (2-3) Prereq Cpt S 360; E E 214. Design and implementation of a microcomputer system including the system hardware and firmware (BIOS).

466 Embedded Systems 3 (2-3) Prereq Cpt S 360. The design and development of real-time and dedicated software systems with an introduction to sensors and actuators. Cooperative course taught by WSU, open to UI students (CS 404).

467 System Software 3 (2-3) Prereq E E 315; engineering consortium students only. Engineering and design of system software in C and assembly, including libraries, executables, and I/O; use of debugger and emulators.

480 Object-Oriented Windows Programming 3 (2-3) Prereq admission to consortium program, six semester credits of HLL programming. Object-oriented software design and programming in a modern windowing environment.

483 Topics in Computer Science V 1-4 May be repeated for credit. Prereq Cpt S 322. Current topics in computer science or software engineering.

490 Work Study Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq Cpt S 224; E E 314; computer science major; by interview only. Experience in programming and systems analysis in a working environment under supervision of industrial or governmental professionals and faculty. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 Proseminar 1 Faculty research interests, departmental computer systems, computer science research, report preparation. S, F grading.

511 Computational Structures 3 Prereq Cpt S 317 or Math 421; graduate standing. Categories as theories; formal approaches to specifications and homomorphisms of computational structures.

516 Algorithms 3 Prereq Cpt S 450. Discrete structures, automata, formal languages, recursive functions, algorithms, and computability.

518 Programming Language Theory 3 Prereq Cpt S 516 or Math 421. Syntax; operational and denotational semantics. Cooperative course taught by WSU, open to UI students (CS 510).

519 Introduction to Computational Geometry 3 Prereq Cpt S 450; graduate standing. Introduction to computational geometry; data structures and algorithms, with motivating applications.

521 Software Engineering Analysis 3 Prereq Cpt S 322. Research in software engineering: application of quantitative techniques in the software life cycle; current software engineering literature; exploration of techniques of mathematical modeling and solutions to software engineering problems. Cooperative course taught by UI (CS 581), open to WSU students.

522 Software Reuse 3 Prereq Cpt S 422. Basic principles of software reuse, compositional and generative reuse, with specific topics selected from current literature, reverse engineering.

523 Software Engineering Measurement 3 Prereq Cpt S 521. Measurement methodology; software development process in a develop environment; examples of software measurement and the applications of these measurements; application of the scientific method in evaluation of programming methods and models; extension of the measurement concepts into the area of statistical modeling. Cooperative course taught by UI (CS 583), open to WSU students.

524 Software Specification and Analysis 3 Prereq Cpt S 422 or instructor’s permission; Math 216. Formal specification, abstraction, and analysis of software using a formal specification language; case studies of design.

526 Experimental Software Engineering 3 Prereq Cpts 322, Cpt S 422, graduate standing. Experimental strategies to assess and understand software processes and artifacts (experiments, case studies, field observations, surveys).

527 Computer Security 3 Graduate-level counterpart of Cpt S 427; additional requirements. Credit not granted for both Cpt S 427 and 527.

530 Numerical Analysis 3 Prereq graduate standing. Graduate-level counterpart of Cpt S 430; additional requirements. Credit not granted for both Cpt S 430 and 530.

531 Computational Linear Algebra 3 Same as Math 544.

532 Advanced Numerical Analysis 3 Same as Math 545.

533 Numerical Analysis of Elliptic PDEs 3 Same as Math 546.

534 Neural Network Design and Application 3 Prereq graduate standing. Graduate-level counterpart of Cpt S 434; additional requirements. Credit not granted for both Cpt S 434 and 534.

538 Scientific Visualization 3 Prereq Cpt S 443. Investigation of the effectiveness of computer-based visualization from a cognitive, social and cultural perspective.

541 Artificial Intelligence 3 Prereq Cpt S 440. Intelligent computer programs; simulation of cognitive processes.

542 Computer Graphics 3 Prereq graduate standing. Graduate-level counterpart of Cpt S 442; additional requirements. Credit not granted for both Cpt S 442 and 542.

543 Multimedia Systems 3 Prereq Cpt S 455, 460. Survey of recent advances in multimedia systems: applications, authoring tools, information retrieval, network and operating system support, and data management.

544 Neural Computation 3 Prereq Math 315, Stat 443. Parallel processing inspired by natural neural systems; neural computer architecture, supervised and unsupervised learning, generalization, implementation, and application; neurophysiology basis.

546 Computer Animation 3 May be repeated for credit; cumulative maximum 9 hours. Advanced computer animation techniques; advanced specialization in building/design simulation, dynamic modeling and visualization, engineering animation.

548 Advanced Computer Graphics 3 Prereq Cpt S 442. Solid modeling, visual realism, light and color models, advanced surface generation techniques.

549 Genetic Algorithms 3 Prereq Cpt S 223, Math 360. Basic concepts, fundamental theories, and techniques of genetic algorithms; applications.
550 Parallel Computation 3 Prereq Cpt S 450. Parallel machine models, principles for the design of parallel algorithms, interconnection networks, systolic arrays, computational aspects to VLSI.


553 Graph Theory 3 Prereq graduate standing. Graduate-level counterpart of Cpt S 453; additional requirements. Credit not granted for both Cpt S 453 and 553.

555 Computer Communication Networks 3 Same as E E 555.

556 Secure Wireless Networks 3 Prereq Cpt S/EE 455 or permission. Mobile wireless networks; mobile IP, mobile and ad hoc networks, wireless ATM, threat models, authentication, detection mechanisms for security attacks.

557 Advanced Computer Networks 3 Prereq Cpt S 455 or S 555. ATM networks, optical WDM networks, and wireless/mobile networks; access, transport, and routing protocols.

559 Mobile Computing in Wireless Networks 3 Prereq graduate standing. GSM, CDMA, Mobile-IP, MANET, WATM; routing, mobility management, authentication, naming, address resolution; transport layer and security issues due to mobility.

560 Operating Systems 3 Prereq Cpt S 460. Structure of multiprogramming and multiprocessing; efficient allocation of system resources; design implementation and performance measurement.

561 Computer Architecture 3 Prereq E E 424. Parallel and distributed processors; multiprocessors; interconnection topologies; language-directed architecture; special-purpose architecture.

562 Fault Tolerant Computer Systems 3 Prereq Cpt S 460; Cpt S 464 or S 564. Fault tolerance aspects involved in design and evaluation of systems; methods of detection and recovery; multicast, middleware, and reconfiguration.

564 Distributed Systems Concepts and Programming 3 Prereq Cpt S 360. Graduate-level counterpart of Cpt S 464; additional requirements. Credit not granted for both Cpt S 464 and 564. Cooperative course taught by WSU, open to UI students (CS 504).

565 Advanced Distributed Systems 3 Prereq Cpt S 460 and Cpt S 464 or S 564. Advanced topics and programming in distributed systems; topics may include middleware, scalability, naming, and distributed system management.

566 Embedded Systems 3 (2-3) Prereq graduate standing. Graduate-level counterpart of Cpt S 466; additional requirements. Credit not granted for both Cpt S 466 and 566.

570 Machine Learning 3 Prereq Cpt S 122; graduate standing. Introduction to building computer systems that learn from their experience; classification and regression problems; unsupervised and reinforcement learning.

572 Numerical Methods in Computational Biology 3 Prereq cell biology, probability and statistics, graduate standing in computer science, or permission of the instructor. Computational methods for solving scientific problems related to information processing in biological systems at the molecular and cellular levels.

573 Bioinformatics Software Development 3 Prereq cell biology, probability and statistics, and graduate standing in computer science or permission of the instructor. Provides programming skills needed to address current computational problems in bioinformatics; emphasis on mathematical development and software design.

580 Advanced Topics in Computer Science 3 May be repeated for credit.

595 Directed Study in Computer Science V 1-3 Current topics in computer science. May be repeated for credit; cumulative maximum 6 hours.

596 Computer Science Seminar 1 May be repeated for credit; cumulative maximum 3 hours.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Projects, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Electrical Engineering Courses

Enrollment in 300 and 400-level electrical engineering courses is restricted to certified majors or minors in electrical engineering, computer engineering, or computer science, and to juniors and seniors officially certified into other degree programs requiring 400-level engineering courses.

E E

120 Innovation in Design 2 Same as M E 120.

214 Design of Logic Circuits 3 (2-3) Prereq Cpt S 121 or 251. Design and application of combinational logic circuits with exposure to modern methods and design tools; introduction to sequential logic circuits.

234 Microprocessor Systems 3 (2-3) Prereq Cpt S 122, E E 214. Microprocessor system architecture, instruction sets, and interfacing; assembly language programming.

261 Electrical Circuits I 3 Prereq Math 315 or c//; Phys 202; c// in E E 262. Application of fundamental concepts of electrical science in linear circuit analysis; mathematical models of electric components and circuits.

262 Electrical Circuits Laboratory I 1 (0-3) Prereq E E 261 or c//. Electrical instruments; laboratory applications of electric laws; transient and steady-state responses of electrical circuits.

304 Introduction to Electrical Circuits 2 Prereq Math 315 or c//. Basic DC and AC circuits.

311 Electronics 3 Prereq E E 214, 261. Fundamental device characteristics including diodes, MOSFETs and bipolar transistors; small- and large-signal characteristics and design of linear circuits.

312 Electronics Laboratory I 1 (0-3) Prereq admission to engineering consortium program, E E 321 or c//. Lab exercises in the implementation and analysis of electronic circuits.

315 Microcomputers and Assembly Language 3 Prereq admission to engineering consortium program, 6 semester hours of programming. Study of microprocessor systems, including CPUs, memory, registers, bus structures, computer control, and assembly language programming.

316 Microprocessor Laboratory 1 (0-3) Prereq admission to engineering consortium program, E E 315 or c//. Lab exercises in the time and frequency-domain analysis of electrical circuits.


327 Electronics II 3 Prereq admission to engineering consortium program, E E 311. Analysis and design of electronic circuits, both analog and digital, discrete and integrated.

328 Electronics Laboratory II 1 (0-3) Prereq admission to engineering consortium program, E E 327 or c//. Lab exercises in the implementation and analysis of electronic circuits.

331 Electromagnetic Fields and Waves 3 Prereq E E 261, 262; Math 315; Phys 202; certification not required. Fundamentals of electric fields, magnetic fields, and electromagnetic waves.

334 Computer Architecture 4 (3-3) Prereq E E 234. Modern developments in digital system design, parallel structures, pipelining, input/output, high speed circuits, laboratory experience in digital system design; emphasis on CPU architecture.

341 Signals and Systems 3 Prereq E E 321. Discrete and continuous-time signals, LT1 systems, convolution, sampling, Fourier transform, Z-transform, filtering, DFT, amplitude and frequency modulation.

351 Distributed Parameter Systems 3 Prereq E E 331. Transmission lines, plane waves, waveguides, antennas, fiber optics.
352 Electrical Engineering Laboratory I 3 (1-6) Prereq E E 311, 321, or c//. Experiments in electrical circuits, measurements and electronics; principles of measurements and measuring instruments.

361 Electrical Power Systems 3 Prereq E E 321, 331. Power system hardware; transformers, and electromechanical machinery; introduction to power system operation.

362 [M] Power System Laboratory I 2 (1-3) Prereq c// in E E 361, E E 341, and Engl 402 or 403. Experiments in simulation, modeling, transformers, rotating machines, and transmission lines.

414 [M] Senior Design Prep 3 Prereq senior standing in engineering consortium program. Engineering project management and design; teamwork, client interaction, specifications, planning, ethics, costing, oral and written technical presentations.

415 Design Project Management 2 Prereq senior standing. Project scheduling/planning, technical writing, oral presentation skills, working in teams, TQC, TQM, market-driven organizations.

416 [M] Electrical Engineering Design 3 (1-6) Prereq E E 415; Engl 402 or 403. Electrical engineering design of specific projects including design specification; written and oral presentation and reports.

425 Computer Architecture and Design 3 Prereq E E 315; engineering consortium students only. Study of computer design at the architectural and gate levels, pipelining, RISC vs. CISC, cache systems, register-transfer level simulation.

426 Introduction to Electromagnetic Compatibility 3 Prereq E E 341, 351. Electromagnetic compatibility requirements and principles, nonlinear component behavior, conducted and radiated emissions and susceptibility, crosstalk, shielding, system design. Credit not granted for both E E 426 and 526.

431 RF and Microwave Circuits and Systems 4 (3-3) Prereq E E 341, 351. Design and implementation of RF/microwave modules and systems for telecommunications; microstrip, filters, mixers, amplifiers, frequency synthesizers and transceivers.

432 RF Engineering for Telecommunications 4 (3-3) Prereq E E 341, 351. System and propagation issues for wireless telecommunications; cellular, PCS, microwave, and satellite system analysis, design, measurement, and testing.


441 Digital Control Systems I 3 Prereq E E 341, 489. Linear difference equation, Z-transform, discretization, A/D and D/A conversion, sampled data system analysis, frequency domain design, state space design, quantization effects.  

442 Robotics 3 Prereq E E 489 or M E 481 or c//. Robots, kinematics, inverse kinematics, Jacobians, dynamics, sensors, actuators, position control, force control, hybrid control, trajectory generation.

445 Digital Image Processing 3 Same as Cpt S 445.


455 Introduction to Computer Networks 3 Same as Cpt S 455.

461 Digital Sound Synthesis and Processing 3 Prereq EE 321 or CptS 317; B- or better in Cpts 122 and Math 273. Digital sound synthesis, discrete Fourier transforms and frequency domain analysis, digital processing and manipulation of audio signals.

464 Digital Signal Processing I 3 Prereq E E 341. Discrete and fast Fourier transforms; Z-transform; sampling; discrete convolution; digital filter design; effects of quantization.


466 VLSI Design 3 (2-3) Prereq E E 234, 311, 324. Very Large Scale Integrated circuit, system and physical design using CAD software; project specification, modeling, implementation, documentation and reporting.

475 Electrical Measurements and Transducers 3 (1-6) Prereq E E 352. Principles of electrical measurements and techniques with individual transducer design, development and test problem; formal report.

476 Analog Integrated Circuits 3 Prereq E E 311; 351 or c//; 489 or c// in 477 for capstone design credit. Analysis and design of analog integrated circuits in CMOS and BiCMOS technologies; current mirrors, gain stages, operational amplifiers, frequency response, and compensation. Credit not granted for both E E 476 and 576.

477 [M] Analog Integrated Circuits Laboratory I 2 Prereq c// in E E 476. Laboratory applications of E E 476 including the computer-aided design of analog integrated circuits; emphasis on design documentation and reporting.

478 Microelectronic Fabrication 3 Prereq MSE 302 or by permission. Semiconductors, photo-lithography, diffusion, oxidation, thin film deposition, plasma and chemical etching, process integration, fabrication and testing of diodes and MOS capacitors. Credit not granted for both E E 478 and 578.

483 Topics in Electrical and Computer Engineering V 1-3 May be repeated for credit; cumulative maximum 3 hours. Current topics in electrical engineering and computer engineering.

486 Power Electronics 3 Prereq E E 311, 321. High power semiconductor devices; analysis and design of linear and switching power supplies, high frequency magnetics, controller design. Cooperative course taught jointly by WSU and UI (E E 427).

489 Introduction to Control Systems 3 Prereq E E 341. State variable models, system response, stability analysis, root locus analysis and design; frequency-response and state-space analysis and design.

491 Performance of Power Systems 3 Prereq E E 361, 362. Static and dynamic behavior of power systems, powerflow, and economic considerations.

493 Protection of Power Systems I 3 Prereq E E 361. Analysis and equipment fundamentals of power system protection; symmetrical components, fault calculations; fuses; and relays including burden calculations.

494 Protective Relay Labs 2 (0-6) Prereq E E 493 or c//. Experiments and measurements of protective relay equipment under test, simulated fault and fault conditions.

495 Internship in Electrical Industry V 2-4 May be repeated for credit; cumulative maximum 8 hours. Prereq E E 341 or 361. For juniors and seniors in electrical engineering. Students work full time on engineering assignments in approved industries. S, F grading.

496 Introduction to Semiconductor Device Theory 3 Prereq E E 311 or MSE 302. Equilibrium statistics of electrons and holes; carrier dynamics; p-n junctions, metal-semiconductor junctions, BJTs, Mosfets, LEDs.

497 RF Mosfet Modeling 3 Prereq E E 496. Mosfet device operation, SPICE BSIM, low end frequency small signal models, noise, parameter extraction, device simulation, DC and RF measurements.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Linear System Theory 3 Prereq E E 489. Dynamic systems from the state variable approach; observability, controllability, stability, and sensitivity of differential and nondifferential systems. Cooperative course taught jointly by WSU and UI (E E 572).

502 Linear Multivariable Control 3 Prereq E E 501. Optimal linear feedback control, optimal stochastic observers, LQG/LTR design methodology, modern Wiener-Hopf design, robust controllers. Cooperative course taught jointly by WSU and UI (E E 574).

503 Structure, Dynamics and Control of Large-scale Networks 3 Prereq E E 501, 507. Introduction and development of computational and analytical methods required to characterize large-scale networks.


507 Random Processes in Engineering 3 Prereq Stat 443. Functions of random variables; random sequences; stochastic processes; mean-square stochastic calculus; ergodicity; spectral density; linear transformations, filtering, dynamic systems. Cooperative course taught jointly by WSU and UI (EE 570).

508 Estimation Theory for Signal Processing, Communications, and Control 3 Prereq E.E. 501, 507, or equivalent. Principles of statistical estimation; LLE; Kalman filtering; smoothing; prediction; maximum-likelihood and Bayesian estimation.


511 Protection of Power Systems II 3 Prereq E.E. 491 or c/. Protection of electrical equipment as related to electric power systems with emphasis on digital algorithms. Cooperative course taught jointly by WSU and UI (EE 526).

512 Active Network Synthesis 3 Prereq E.E. 341. Devices and classical network synthesis, two-port network theory, filters, active filters.

514 Optoelectronics Lab I V 1-3 May be repeated for credit. Same as Phys 514.

515 Optoelectronics Lab II V 1-3 May be repeated for credit; cumulative maximum 3 hours. Same as Phys 515.

516 Wave Propagation and Scattering 3 Prereq E.E. 351. Radiative transfer theory; rough surface scattering; scattering in random media; scattering by random discrete scatterers; the T-matrix method; inverse scattering. Cooperative course taught by WSU, open to UI students (E.E. 536).

518 Advanced Electromagnetic Theory I 3 Prereq E.E. 351. Electromagnetic waves, electromagnetic theorems and concepts, solutions to the wave equation in rectangular, cylindrical and spherical coordinates. Cooperative course taught by WSU, open to UI students (E.E. 530).

519 Advanced Electromagnetic Theory II 3 Prereq E.E. 518. Exact solutions to canonical electromagnetic diffraction problems, high and low frequency limits, foundations of numerical solutions to electromagnetic scattering problems.

520 Plasma Engineering 3 Prereq E.E. 351 or Phys 342. Electromagnetics, kinetic theory, and fluid mechanics of plasmas in space, arcs, plasma processing, coronas, and fusion reactors.

521 Analysis of Power Systems 3 Prereq E.E. 491. Concepts and practices of modern power engineering, including steady-state and dynamic analysis, economics and control design.

522 High Voltage Engineering 3 Prereq E.E. 331. High voltage-high power phenomena; design and measurements associated with electrical transmission, current interruption, insulation, transformation, lightning, and corona.

524 Advanced Computer Architecture 3 Prereq E.E. 424. Instruction set architectures, pipelining and super pipelining, instruction level parallelism, superscalar and VLIW processors, cache memory, thread-level parallelism and VLSI.

526 Introduction to Electromagnetic Compatibility 3 Prereq graduate standing. Graduate-level counterpart of E.E. 426; additional requirements. Credit not granted for both E.E. 426 and 526.

527 Antenna Theory and Design 3 Prereq E.E. 351. Antenna fundamentals, analytical techniques, characteristics and design procedures for selected types of wire, broadband, and aperture antennas. Cooperative course taught jointly by WSU and UI (E.E. 533).

528 Advanced Topics in Electromagnetics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq E.E. 351. Advanced topics of current interest in wave propagation (electromagnetics, acoustics, or optics).


531 Energy Management and Planning 3 Available energy resources; energy issues, economic analysis of energy alternatives; energy future.

534 High Performance Computing 3 Prereq E.E. 324. Development, current state and future of high speed computing; application of existing commercial supercomputers to engineering problems. Cooperative course taught by UI (EE 564), open to WSU students.

535 Numerical Solutions to EM Problems I 3 Prereq E.E. 351. Theory and use of finite-difference time-domain; numeric dispersion; absorbing boundary conditions; scattering; radiation; time-domain vs. frequency-domain.


541 Digital Control Systems II 3 Prereq E.E. 441. State space approach, SISO, optimal control, state estimators, stochastic systems, state estimation in the presence of noise.

543 Signal Theory 3 Prereq E.E. 341. Theory of signals; signal spaces; basis sets; signal representations; projection theorem; Fourier transform; optimum signal design.

544 Neural Computation 3 Same as Cpt S 544.

545 Data Compression 3 Prereq E.E. 507, 543. Source coding with a fidelity criterion; quantization theory; predictive, transform and subband coding; noiseless source codes.

548 Information Theory and Channel Coding 3 Prereq E.E. 451, 507. Information theory; entropy, mutual information, source and channel coding theorems, channel capacity, Gaussian channels; channel coding; block and convolutional codes.

551 Data Communication Systems 3 Prereq E.E. 341, 507. Digital communications; multi-amplitude/phase signal constellations; probability of error performance; cutoff rate; Viterbi algorithm; trellis coded modulation.

554 Asynchronous Digital Systems 3 Prereq E.E. 324. Analysis and design of high speed asynchronous state machines, timing defect analysis, modular elements, arbiters, programmable sequencers, system level design. Cooperative course taught jointly by WSU and UI (EE 540).

555 Computer Communication Networks 3 Prereq Stat 443. Packet switching networks; multi-access and local-area networks; delay models in data networks; routing and flow control.

562 Fault Tolerant Computer Systems 3 Same as Cpt S 562.

564 Advanced Signal Processing 3 Prereq Stat 443. Signal processing and communication theory aspects of frequency domain analysis of continuous and discrete random signals.

571 Advanced Wireless Integrated Circuits and Systems 3 Prereq E.E. 341 and 351 or 431. Analysis and design methodologies of state-of-the-art wireless integrated circuits and systems.

574 Optoelectronics 3 Prereq E.E. 496 or Phys 463. Methods of modulating, generating, and detecting light; display techniques; display devices; fiber optics.

576 Analog Integrated Circuits 3 Prereq graduate standing. Graduate-level counterpart of E.E. 476; additional requirements. Credit not granted for both E.E. 476 and 576.

578 Microelectronic Fabrication 3 Graduate-level counterpart of E.E. 478; additional requirements. Credit not granted for both E.E. 478 and 578.

581 Advanced Topics in Power Systems 2 or 3 May be repeated for credit; cumulative maximum 6 hours. Prereq E.E. 521. Power system operations including AGC, economic dispatch and security; power system dynamics; intelligent systems applications. Cooperative course taught jointly by WSU and UI (EE504).

582 Advanced Topics V 1-3 May be repeated for credit.

586 VLSI Systems Design 3 Prereq E.E. 444. VLSI models, layout algorithms, design methodologies, simulation and layout tools, algorithm design for VLSI implementation.
in mechanical engineering at Washington State University's Vancouver campus. Mechanical engineering deals with diverse engineering problems. The undergraduate curriculum covers the fundamental aspects of the field, emphasizes basic principles, and their use in solving engineering problems. The upper-division course of study focuses on design, manufacturing process, robotics, computer-aided-engineering, thermal and fluid systems, mechanics of materials, micro and nano electronic device design and manufacturing, and machine integration and control. The curriculum incorporates hands-on experiences through laboratory work and design projects. The program provides flexibility to students in customizing their study through three option areas:

- Micro/Nano Technology
- Design and Manufacturing
- Mechatronics

The micro/nano technology option provides education in micro device fabrication, nano-science, and its impact on design of the next generation engineering systems. The design and manufacturing option emphasizes Computer Aided Engineering and Manufacturing, micro machining, and rapid prototyping through industry-based projects. The mechatronics option concentrates on design of mechanical systems with electronic and computer control automation, and robotics.

The program was established and designed to prepare students to satisfy the needs of local and regional industry. The curriculum also prepares students for continued education at the graduate level.

Certification in the Major

Certification in a degree program is required by WSU prior to the granting of a baccalaureate degree. Qualification for initial certification, as well as continuation of certified status, will be evaluated based on several criteria including academic integrity, overall GPA, and GPA in mathematics, science, and major core courses: Computer science or mechanical engineering. Certification will be initiated once the required courses have been completed. Students will be notified of the decision as soon as possible.

When it becomes necessary to limit enrollment, the overall GPA as well as the GPA for the prerequisite courses listed will be important factors. Students who have not completed all of the prerequisite courses will be placed in a pre-engineering or pre-computer science major. Some courses require students to be certified in their major before enrollment is allowed in those courses. See the catalog for additional prerequisite information.

Additional details regarding certification in the major are available from the School of Engineering and Computer Science academic coordinator.

Students who have completed at least 30 semester hours of course work and who have completed CS 121, 122, 223; Math 171, 172, 216; and Phil 201 or their equivalents are eligible for certification into the Bachelor of Arts in Computer Science program. All courses required for certification must be completed with a grade of C or better.

Students who have completed at least 30 semester hours of course work and who have completed CS 121, 122, 214, 223; Math 171, 172, 216; and Phil 201; or Phys 201 or their equivalents are eligible for certification into the Bachelor of Science in Computer Science program. All courses required
for certification must be completed with a grade of C or better.

Enrollment in 400-level computer science courses is restricted to certified majors or minors in computer science and to juniors and seniors certified in other degree programs requiring 400-level computer science courses.

Students who have completed at least 30 semester hours of graded coursework and who have completed the following courses: C E 211, Chem 105, Engl 101, ME 103, Math 171, 172, and Phys 201 or their equivalents with a minimum 2.0 gpa for all college level courses and for the group of courses listed above are eligible to apply for certification into the manufacturing engineering program. Applications for certification will be reviewed by a program committee. Application deadline dates are March 1 for the fall semester and October 1 for the spring semester. Additional details and application forms are available from the manufacturing engineering program coordinator.

Students who have completed at least 30 semester hours of course work and who have completed Chem 106; Engl 101; Math 220, 273, 315; Mech 211, 212, 215; and Phys 202 or their equivalents are eligible for certification into the Bachelor of Science in Mechanical Engineering program. All courses required for certification must be completed with a grade of C or better.

Enrollment in many upper-level mechanical engineering courses is restricted to certified majors or minors in mechanical engineering.

Preparation for Graduate Study

The Master of Science in Computer Science program in the School of ENCS is a thesis program and requires 30 credit hours, including 21 hours of graded course work and 9 credits of thesis research (CS 700). The coursework and research are in the general areas of software engineering, artificial intelligence, computer networks, and computer graphics.

Sophisticated facilities are available for instruction and research. Teaching and research assistantships are available for qualified students.

Before undertaking graduate study in computer science, the student should have completed a baccalaureate degree substantially similar to the BSCS degree described below in the BSCS schedule of studies. Students from other academic disciplines are encouraged to apply; however, such students will be required to take or have taken the equivalent of the following courses: CS 317, 320, 360, and 450. An undergraduate grade point average of 3.0 is a minimum for admission to the MS program.

The Master of Science in Mechanical Engineering program in the School of ENCS is a thesis program and requires a minimum of 30 credit hours. This includes 21 hours of graded coursework beyond the bachelor’s plus a minimum of 4 thesis credits. The coursework and research are in the general areas of dynamics, robotics, solid mechanics, manufacturing and design, fluid dynamics, heat and mass transfer, and micro and nanotechnology.

The laboratories are equipped with state-of-the-art equipment worth more than $3 million. Teaching and research assistantships are available for qualified students.

A bachelor of science degree from an accredited program in mechanical engineering provides a good background for the MSME graduate program. Students with bachelor degrees in other engineering disciplines, mathematics, and the physical sciences are routinely admitted, but may be required to make up requisite undergraduate deficiencies. An undergraduate grade point average of 3.0 is a minimum for admission to the MS program.

Transfer Students

The School of Engineering and Computer Science cooperates closely with Washington community colleges to facilitate the transfer of students into its computer science and mechanical engineering programs. Students planning to transfer into the School of ENCS are strongly encouraged to contact the academic coordinator to evaluate the transfer of their lower-division course credits and to help plan the continuation of their academic career at Washington State University Vancouver.

Students will note that a number of the courses offered by the School of Engineering and Computer Science have identical course numbers and similar descriptions to courses offered by the School of Electrical Engineering and Computer Science and the School of Mechanical and Materials Engineering, both located on the Pullman campus. The transfer of course credit between these Schools is not automatic or guaranteed. Students intending to take courses in one School for credit in another are advised to consult with the academic advisor for their degree program, in advance, to assess how the courses may fulfill their degree requirements.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

No courses listed in this schedule of studies may be taken on a pass/fail basis. All listed computer science courses, and their prerequisites, must be completed with a grade of C or better.

BACHELOR OF ARTS, COMPUTER SCIENCE DEGREE PROGRAM

(WSU VANCOUVER)

(122 HOURS)

Junior and senior year are held at the Vancouver Campus.

First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td>Biological Science [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CS 121</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td></td>
<td>Math 171 [N] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Phil 201 [H]</td>
<td>3</td>
</tr>
<tr>
<td>Second Term</td>
<td>CS 122</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Gened 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Math 172</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Math 216</td>
<td>3</td>
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<tr>
<td></td>
<td>Social Science/[S,K] (GER)</td>
<td>3</td>
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</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>CS 214</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CS 223</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Gened 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Math 220</td>
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<tr>
<td></td>
<td>Physical Science [P] (GER)</td>
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<tr>
<td>Second Term</td>
<td>CS 224</td>
<td>2</td>
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<td></td>
<td>CS 234</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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<tr>
<td></td>
<td>Physical Science [P] (GER)</td>
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<tr>
<td></td>
<td>Science Elective [B], [P] or [Q] (GER)</td>
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Third Year

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<thead>
<tr>
<th>Term</th>
<th>Courses</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Term</td>
<td>CS 320 [M]</td>
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<tr>
<td></td>
<td>Advanced CS Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Engl 402 [W] or Engl 403 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Stat 360</td>
<td>3</td>
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<tr>
<td>Second Term</td>
<td>CS 355</td>
<td>3</td>
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<tr>
<td></td>
<td>Advanced CS Elective</td>
<td>3</td>
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<tr>
<td></td>
<td>Minor Electives</td>
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<tr>
<td></td>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Complete University Writing Portfolio</td>
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Fourth Year

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<tr>
<th>Term</th>
<th>Courses</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Term</td>
<td>CS 402 [M]</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Advanced CS Electives</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Minor Electives</td>
<td>6</td>
</tr>
<tr>
<td>Second Term</td>
<td>Advanced CS Electives</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Minor Electives</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Tier III Humanities or Social Science Course [T] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Science coursework must include a year-long sequence in a physical science. Each course in the sequence must include a laboratory. The course sequence Phys 201 and Phys 202 is preferred but not required.

2 The science elective may be any course with 3 or more credits having a GER designator of [B], [P], or [Q]. The science elective need not include a laboratory.

3 Advanced Computer Science Electives: Eighteen credit hours of advanced computer science coursework are required and must be chosen from at least three separate areas of computer science. Eligible areas and courses include: Theory: CS 317, 450; Scientific Computing: CS 330; Programming Languages: CS 452; Hardware Systems: CS 360, 460, 466; Graphics and Multimedia: CS 442, 443, 446; Intelligent Systems: CS 440; Software Systems: CS 420, 427, 451, 455, 464, 471. Selected offerings of CS 483, 490, and 499 may fit into one or more of the listed areas.

4 Formal Minor Requirement: The completion of 18 credit hours in a minor subject, other than computer science, is a graduation requirement for the degree. Various academic departments offer minor programs and set specific formal minor requirements that must be met to fulfill this graduation requirement. A bachelor’s degree, in a subject other than computer science, that is valid by Washington State University standards fulfills the minor subject requirement.
BACHELOR OF SCIENCE, COMPUTER SCIENCE DEGREE PROGRAM (WSU VANCOUVER) (122 HOURS)

No courses listed in this schedule of studies may be taken on a pass/fail basis. All listed computer science courses, and their prerequisites, must be completed with a grade of C or better.

Junior and senior year are held at the Vancouver Campus.

First Year
First Term  Hours
CS 121 4
Engl 101 [W] (GER) 3
Math 171 [N] (GER) 4
Phil 201 [H] (GER) 3
Biological Science [B] (GER) 4

Second Term  Hours
CS 122 4
Math 172 4
Math 216 3
GenEd 110 [A] (GER) 3
Social Science/Diversity [S,K] (GER) 3

Second Year
First Term  Hours
CS 214 3
CS 223 3
Math 220 2
Phys 201 [P] (GER) 4
GenEd 111 [A] (GER) 3

Second Term  Hours
CS 224 2
CS 234 3
Econ 101 [S] or Econ 102 [S] (GER) 3
Phys 202 [P] (GER) 4
Math 273 2

Third Year
First Term  Hours
CS 317 3
CS 320 [M] 3
CS Option Course1 3
Engl 402 [W] or Engl 403 [W] (GER) 3
Stat 360 3

Second Term  Hours
CS 355 3
CS 360 4
CS 420 [M] 3
CS Option Course1 3
Complete University Writing Portfolio 3

Fourth Year
First Term  Hours
CS 402 [M] 3
CS 450 3
CS 451 or CS 452 3
CS Option Course1 3
Intercultural Studies [I,G,K] (GER) 3

Second Term  Hours
CS 460 3
CS Option Courses1 9
Tier III Humanities or Social Science Course [T] (GER) 3

1Eighteen credit hours of option area courses are required for completion of the degree program. The option courses are chosen from upper-division computer science and related courses and must be pre-approved by a faculty advisor.

MECHANICAL ENGINEERING DEGREE PROGRAM (WSU VANCOUVER) (128 HOURS)

No courses listed in this schedule of studies may be taken on a pass/fail basis. All courses required for certification in the major must be completed with a grade of C or better. All upper-division mechanical engineering courses must be completed with a minimum 2.0 average gpa.

Junior and senior year are held at the Vancouver Campus.

First Year
First Term  Hours
Chem 105 4
Engl 101 3
GenEd 110 3
Math 171 4
Mech 120 2

Second Term  Hours
Biological Science [B] (GER) 3
Chem 106 4
GenEd 111 3
Math 172 4
Mech 103 3

Second Year
First Term  Hours
CS 153 or 251 (preferred) 2-3
Econ 101 or 102 3
Math 220 2
Math 273 2
Mech 211 3
Phys 201 4

Second Term  Hours
Arts & Humanities [H, G] (GER) 3
Biological Science [B] (GER) 3
Chem 106 4
GenEd 111 3
Mech 172 4
Mech 103 3

Third Year
First Term  Hours
CS 153 or 251 (preferred) 2-3
Econ 101 or 102 3
Math 220 2
Math 273 2
Mech 211 3
Phys 201 4

Second Term  Hours
CS 371 3
CS 372 3
Mech 315 3
Mech 251 3
Mech 215 3
Phys 202 4

Third Year
First Term  Hours
Mech 303 3
Mech 304 3
Mech 309 3
Mech 313 3
Stat 360 3

Second Term  Hours
Mech 301 3
Mech 310 4
Mech 314 3
Mech 348 3
Mech 4xx Option X.1 Course1 3
Complete University Writing Portfolio 3

1The program emphasizes fundamentals and provides flexibility in selecting a course of study through four technical electives. Students can either take any four elective courses, provided they meet the prerequisites, or they can choose to take a set of three related electives comprising an option area and a fourth elective of their choice. Students are required to work with their faculty advisor to develop their schedule of studies as they are admitted to the program at the junior level. The following are the technical elective courses and option areas: Option 1, Micro and Nanotechnology, Mech 431, 438, 450; Option 2, Design and Manufacturing, Mech 425, 476, 485; and Option 3, Mechatronics, Mech 405, 467, 468.

MANUFACTURING ENGINEERING DEGREE PROGRAM (WSU VANCOUVER) (128 HOURS)

Junior and senior year are held at the Vancouver Campus.

First Year
First Term  Hours
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
ME 103 3
Math 171 [N] (GER) 4

Second Term  Hours
CE 211 3
Cpt S 251 2
ME 212 3
Math 315 3
Phys 201 [P] (GER) 4

Second Year  Hours
Arts & Humanities [H, G] (GER) 3
Biological Sciences [B] (GER) 4
CE 211 3
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4

Third Year  Hours
ME 404 3
ME 414 3
ME 416 2
ME 4xx Technical Elective1 3
ME 4xx Option X.2 Course1 3

Second Term  Hours
Engl 402 [W] (GER) 3
Mech 402 3
Mech 417 3
Mech 4xx Option X.3 Course1 3
Tier III Humanities or Social Science Course [T] (GER) 3

1Eighteen credit hours of option area courses are required for completion of the degree program. The option courses are chosen from upper-division manufacturing engineering courses and must be pre-approved by a faculty advisor.
and Computer Science to plan and assess the transfer of their course work and the degree requirements their lower-division course work may fulfill.

CS

121 Program Design and Development 4 (3-3) Prereq Math 107, 201 or satisfactory math placement score. Formulation of problems and top-down design of programs in a modern structured language for their solution on a digital computer.

122 Data Structures 4 (3-3) Prereq CS 121 or equivalent. Advanced programming techniques: data structures, recursion, sorting and searching, and basics of algorithm analysis.

153 BASIC Programming 3 Comprehensive programming practice using contemporary instances of the BASIC programming language.

214 Design of Logic Circuits 3 (2-3) Prereq CS 121 or 251. Design and application of combinational logic circuits with exposure to modern methods and design tools; introduction to sequential logic circuits.

223 Advanced Data Structures 3 CS 122; Math 216 or equivalent. Advanced data structures, object-oriented programming concepts, concurrency, and program design principles.

224 Programming Tools 2 Prereq CS 122, rec 223 or equivalent. Debugging tools, scripting languages, UNIX programming tools, introduction to graphical user interface programming.

234 Microprocessor Systems 3 (2-3) Prereq CS 122, 214. Microprocessor system architecture, instruction sets and interfacing; assembly language programming.

251 C Programming Language 2 Prereq Math 171 or c/. Comprehensive programming practice using C.

253 Java Programming Language 3 Prereq CS 121, 153, 203, or 251. Comprehensive programming practice using Java.

317 Automata and Formal Languages 3 Prereq CS 122; Math 216. Finite automata, regular sets, pushdown automata, context-free language, Turing machines and the halting problem.

320 [M] Fundamentals of Software Engineering 3 Prereq CS 224; Math 216; c/ in Engl 402. Introduction to software engineering; requirements analysis, definition and specification; software process models; prototyping; architecture; object-oriented design with UML.

330 Numerical Computing 3 Prereq CS 121 or 251; Math 172, 220. Power and limitation of numerical solutions; design, analysis and implementation of numerical algorithms; visualization and rendering.

355 Programming Language Design 3 Prereq CS 223, 224. Design concepts of high-level programming languages; survey of existing languages, experience using some languages.

360 Systems Programming 4 (3-3) Prereq CS 223; E E 314. Implementation of systems programs, concepts of computer operating systems; laboratory experience in using operating system facilities.

402 [M] Social and Professional Issues in Computer Science 3 Prereq CS 121; certified in computer science; completion of University Writing Portfolio. Social, legal, ethical and professional issues that arise in the context of computing.

420 [M] Software Engineering in Practice 3 Prereq CS 322. Development of software in a team environment; project management; unit and integration testing; bug tracking, configuration management, software process models; object-oriented design with UML.

427 Computer Security 3 Prereq CS 360, Math 216. Computer security concepts, models and mechanisms; encryption technology, formal models, policy and ethical implications. Credit not granted for both CS 427 and 527.

440 Introduction to Artificial Intelligence 3 Prereq CS 122; Math 212 or 360. Same as CS 440.

442 Computer Graphics 3 Prereq CS 223, 224; Math 220. Raster operations; transformations and viewing; geometric modeling; visibility and shading; color. Credit not granted for both CS 442 and 542.

443 Computer-Human Interaction 3 Prereq junior standing. Introduction to the field of human-computer interaction; understanding the system user; user-centered design and evaluation techniques including heuristic evaluation and usability testing.

446 Animation Programming 3 (1-4) Prereq CS 122. Introduction to computer animation production, animation programming techniques, simulation, and dynamic visualization.

450 Design and Analysis of Algorithms 3 Prereq CS 223, 317, Stat 360. Analysis of data structures and algorithms; computational complexity and design of efficient data-handling procedures.

451 Introduction to Database Systems 3 Prereq CS 223, 224. Introduction to database concepts, data models, database languages, database design, implementation issues.


455 Introduction to Computer Networks 3 Prereq CS 360. Concepts and implementation of computer networks; architectures, protocol layers, internetworking and addressing case studies.

460 Operating Systems and Computer Architecture 3 Prereq CS 360. Operating systems, computer architectures, and their interrelationships in micro, mini, and large computer systems.
464 Distributed Systems Concepts and Programming
3 Prereq CS 360. Concepts of distributed systems; naming, security, networking, replication, synchronization, quality of service; programming middleware including CORBA, XML, DCOM/SOAP. Credit not granted for both CS 464 and 564.

466 Embedded Systems
3 (2-3) Prereq CS 360. Design and development of real-time and dedicated software systems with an introduction to sensors and actuators.

471 Professional Programming Problems and Practice
3 Prereq CS 320; 360; senior standing. Application of OOP techniques to a variety of challenging, real world problems; industrial program development processes, peer reviews and interpersonal skills presented and exercised.

483 Topics in Computer Science
V 1-4 Prereq CS 322. May be repeated for credit. Current topics in computer science or software engineering.

490 Work Study Internship
V 1-9 Prereq CS 224; E E 314; computer science major; by interview only. May be repeated for credit; cumulative maximum 9 hours. Experience in programming and systems analysis in a working environment under supervision of industrial or governmental professionals and faculty. S, F grading.

499 Special Problems
V 1-4 May be repeated for credit. S, F grading.

500 Computer Science Seminar
1 Faculty research interests, departmental computer systems, computer science research, report preparation. S, F grading.

516 Algorithmics
3 Prereq CS 450. Discrete structures, automata, formal languages, recursive functions, algorithms, and computability.

522 Software Reuse
3 Prereq CS 422. Basic principles of software reuse, compositional and generative reuse, with specific topics selected from current literature, reverse engineering.

527 Computer Security
3 CS 360; Math 216. Graduate-level counterpart of Cpt S 427; additional requirements. Credit not granted for both Cpt S 427 and S27.

534 Neural Network Design and Application
3 Prereq graduate standing. Graduate-level counterpart of CS 434; additional requirements. Credit not granted for both CS 434 and 534.

541 Artificial Intelligence
3 Prereq CS 440. Intelligent computer programs; simulation of cognitive processes.

542 Computer Graphics
3 Prereq graduate standing. Graduate-level counterpart of CS 442; additional requirements. Credit not granted for both CS 442 and S42.

548 Advanced Computer Graphics
3 Prereq CS 442. Solid modeling, visual realism, light and color models, advanced surface generation techniques.

550 Parallel Computation
3 Prereq CS 450. Parallel machine models, principles for the design of parallel algorithms, interconnection networks, systolic arrays, computational aspects to VLSI.

564 Distributed Systems Concepts and Programming
3 Prereq CS 360. Graduate-level counterpart of CS 464; additional requirements. Credit not granted for both CS 464 and 564.

566 Embedded Systems
3 (2-3) Prereq graduate standing. Graduate-level counterpart of CS 466; additional requirements. Credit not granted for both CS 466 and 566.

570 Machine Learning
3 Prereq CS 122; graduate standing. Introduction to building computer systems that learn from their experience; classification and regression problems; unsupervised and reinforcement learning.

580 Advanced Topics in Computer Science
3 May be repeated for credit.

595 Directed Study in Computer Science
V 1-3 Current topics in computer science.

700 Master’s Research, Thesis, and/or Examination
Variable credit. S, F grading.

Mechanical Engineering—Vancouver Courses

Enrollment in many upper-level mechanical engineering courses is restricted to certified majors or minors in mechanical engineering. Washington State University Vancouver offers only upper-division and graduate courses. Lower-division courses (100-200 level) are listed below only for reference with respect to degree requirements. Students planning to transfer are encouraged to consult with the academic coordinator for the School of Engineering and Computer Science to plan and assess the transfer of their coursework and the degree requirements their lower-division coursework may fulfill.

Mech

103 Engineering Graphics
3 (1-6) Orthographic theory, conventions, and visualization; isometric and oblique pictorials; graphical analysis and solution of spatial problems, computer-aided drafting.

120 Innovation in Design
2 Engineering and architectural creativity; role, function, enhancement, integration in design methods.

211 Statics
3 Prereq Math 127 or c//; Phys 201; or c//. Engineering mechanics concepts; force systems; static equilibrium; centroids, centers of gravity; shear and moment diagrams; friction; moments of inertia.

212 Dynamics
3 Prereq Mech 211. Kinematics and kinetics of particles and rigid bodies; introduction to mechanical vibration.

215 Mechanics of Materials
3 Prereq Mech 211. Concepts of stress, strain, and their relationships; axial loads, torsion and bending; combined stress; properties of materials; columns, repeated loadings.

301 Fundamentals of Thermodynamics
3 Prereq certified Mech major; Phys 201; Rec Math 220, 315. Thermodynamic properties of matter, ideal and real gases, work and heat, first and second laws and their application to engineering systems.

303 Fluid Mechanics
3 Prereq Mech 212. Fluid statics, laminar and turbulent flow, similitude, pipe flow, boundary layers, lift and drag and measurement techniques.

304 Instrumentation and Measurement
3 (2-3) Prereq CS 251, Math 220 or c//, Math 315 or c//, Phys 202. Basic DC and AC circuits, analog electronic components, digital circuits, computer data acquisition and engineering measurements.

309 Introduction of Engineering Materials
3 (2-3) Prereq Chem 106; Phys 201 or c//. Structure of materials, phase equilibrium, phase transformations, and mechanical properties.

310 Introduction to Design and Manufacturing
4 (3-3) Prereq certified Mech major; Mech 103, 309. Basic mechanical design; manufacturing process; shaping and non-shaping processes; exposure to 3D-CAD; manufacturing laboratory in machining, welding and forming; manufacturing project.

313 Engineering Analysis
3 Prereq CS 251, Math 220, 315. Analysis and modeling of engineering problems utilizing numerical and mathematical techniques and computers.

314 [M] Design Process
3 Prereq certified major in mechanical engineering; Mech 215; completion of writing portfolio. Introduction to the engineering design process, including topics relevant to the engineering job.

348 Dynamics Systems
3 Prereq certified Mech major; Mech 212, 313. Fundamentals of vibration analysis, control systems, system modeling and dynamics analysis.

402 Thermal Systems Design
3 (2-3) Prereq Mech 301, 404. Power and refrigeration cycles, thermodynamic relations, mixtures, reacting systems and combustion, phase and chemical equilibrium, compressible flow.

404 Heat Transfer
3 Prereq Mech 303 or c//. Conduction, radiation, and convection heat transfer; analytical, numerical, experimental results for solids, liquids, and gases; heat exchanger design.

405 Introduction to Microcontrollers
3 Prereq CS 251, Mech 304. Microcontroller architecture, microcontroller programming, mechanical system design with embedded microcontrollers.

414 Machine Design
3 Prereq certified major in Mech, Mech 213, 309. Optimal design of machinery; analysis for prevention of machine elements failure.

416 [M] Mechanical Systems Design
1 2 Prereq Mech 414; senior standing; consent of academic coordinator. First of two-semester long design class; integrative design, multidisciplinary design project in both technical and non-technical contexts.
417 Mechanical Systems Design II 3 Prereq Mech 416, senior standing, or by permission of instructor. Second semester of year-long design class. Integrative design in M E; multidisciplinary design project in both technical and non-technical contexts.

425 Introduction to Manufacturing Systems 3 Prereq Mech 310 or by permission. Traditional and contemporary tools used to support direct manufacturing processes in a manufacturing enterprise.


432 Microfabrication Technology 3 (2-3) Prereq Chem 106, Phys 202, certified major in Mech. Semiconductor micro lithography, thin film deposition, CMOS process integration, process simulation tools, microstructure/ micro device fabrication and testing. Credit not granted for both Mech 432 and 532.


450 Advanced Topics in Nanoscience and Technology 3 (2-3) Prereq Mech 431 or c/. Introduction to quantum mechanics, physics in low dimensional structures and materials; hands-on experience with scanning probe microscope. Credit not granted for both Mech 450 and 550.


468 Robotics 3 Prereq Mech 304, 348. Industrial robots, kinematics, control, robot programming, interfacing, sensors, actuators, vision systems and mobile robots. Credit not granted for both Mech 468 and 568.

476 Advanced Manufacturing Engineering 3 Prereq Mech 310. Advanced topics in manufacturing processes, including interrelationships between the properties of the material, the manufacturing process and design of components. Credit not granted for both Mech 476 and 576.

485 Computer-aided Design and Engineering Systems 3 Prereq Mech 310, 313. Introduction to the use of computers in engineering product design, analysis and manufacturing; basic concepts and applications in CAD/CAE/CAM. Credit not granted for both Mech 485 and 585.

495 Internship in Mechanical Industry 3 or 6 May be repeated for credit; cumulative maximum 12 hours. Prereq major in materials science engineering or mechanical engineering. By interview only. Students work full time on engineering assignment in approved industries with industrial and faculty supervision. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

509 MEMS Engineering 3 (2-3) Prereq graduate standing or permission of instructor. Introduction to the design, fabrication and application of microelectromechanical systems.

515 Advanced Heat Transfer 3 Rec Mech 404, 521. Derivation of the energy conservation equation; laminar and turbulent forced convection heat transfer with internal and external flow; free convection.

521 Fundamentals of Fluids I 3 Prereq Mech 303 or 315. Governing equations of fluid mechanics accompanied by applications of Navier-Stokes equation to simple flow situations, boundary layer analysis.

532 Finite Elements 3 Theory of finite elements; applications to general engineering systems considered as assemblages of discrete elements.


540 Advanced Dynamics of Physical Systems 3 Newtonian dynamics, rotating coordinate systems; Lagrangian and Hamiltonian mechanics; gyroscopic mechanics, other applications.

550 Advanced Topics in Nanoscience and Technology 3 (2-3) Prereq Mech 431 or c/. Graduate-level counterpart of Mech 438; additional requirements. Credit not granted for both Mech 450 and 550.

575 Geometric Modeling 3 Study of the mathematics behind the creation of complex shapes for CAD using curves, surfaces, and solids.

576 Advanced Manufacturing Engineering 3 Prereq Mech 310. Graduate-level counterpart of Mech 476; additional requirements. Credit not granted for both Mech 476 and 576.

585 Computer-aided Design and Engineering Systems 3 Prereq Mech 310, 313. Graduate-level counterpart of Mech 485; additional requirements. Credit not granted for both Mech 485 and 585.

598 Seminar 1 May be repeated for credit. Current research interests. S, F grading.

600 Special Projects or Independent Study Variable credit. Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Manufacturing Engineering Courses

Mfg E

305 Microprocessor Applications 2 Prereq CptS 251, EE 304. Microprocessors, hardware/software interfacing and system design with embedded microcontrollers for non-electrical engineering majors.

409 Metrology 3 (2-3) Prereq Math 220, M E 212; Rec Math 360. Dimensional referencing and tolerance stack up; process variation and process capability measures; mechanical, electronic, and optical methods for measuring manufacturing attributes and variables.

442 Robotics in Manufacturing 3 Prereq Cpt S 251, E E 304, Math 220. Fundamental concepts of industrial robot theory and application; robot programming and interfacing for supervisory control; robotic cell design project with hardware and software development.

463 Engineering Cost Analysis 3 Understanding and estimating costs for production, overhead taxes, cash flow, time value of money, forecasting, justifications, make/buy and break-even decisions.

476 [T] Industrial Ecology and Sustainable Manufacturing 3 Prereq senior standing in business, science or engineering; calculus course; completion of one Tier I and three Tier II courses. Open and closed manufacturing systems; resources and sinks; pollution prevention, zero discharge; materials productivity and dematerialization; green design and manufacturing.

479 Micro-Device Packaging 3 (2-3) Prereq MSE 201, M E 310, or permission of instructor. Electrical, thermal, and mechanical considerations for packaging methods; manufacturing equipment; processes and analysis for packaging electronic, optical, and mechanical micro-devices.

483 Special Topics V 1-4 Prereq M E 325. Contemporary topics in manufacturing engineering.
**Program in Engineering Management**

[www.engrmgt.wsu.edu/](http://www.engrmgt.wsu.edu/)

ETRL 336  
509-335-0125

Program Director, J. A. Ringo; Teaching Faculty, W. J. Gray; J. R. Holt; E. R. Ladd; H. A. Ramsey; Adjunct Instructors; R. Crick, G. Sudlikas.

Engineering management is a graduate program designed to help technical professionals become effective managers. The program is administered by the College of Engineering and Architecture. Management training is integrated with upgraded technical skills to meet industry needs for the management of technology and the management of technical professionals. Engineering management focuses on the management of those activities that have a high technological content.

This interdisciplinary master's degree is offered to industries in the Puget Sound area and to other high-tech firms around the country, at WSU Spokane, WSU Tri-Cities, and WSU Vancouver. Classes in the program are offered at times convenient for the working engineer. Engineering management students are engineers who bring a significant amount of experience with them into the academic arena from a variety of engineering and management backgrounds. The college also offers four certificates in engineering management topics.

**Program Requirements**

The master's program with a nonthesis option consists of 32 credit hours including a minimum of 30 credit hours of approved course work and a minimum of 2 credit hours of master's special problems. There is both a project and an exam option. The program of studies leads to a Master of Engineering Management degree (non-engineers take the technology management option). An overview of the engineering management curriculum can be summarized as follows:


**Pre-Approved Elective Courses**

Students need to have four 3-semester credit hour electives to total 12 hours of electives: E M 508, 517, 526, 530, 534, 545, 560, 565, 570, 575, 580, 585, 590, 595, 596.

**Admission Requirements**

Students who apply to the Master of Engineering Management degree program will have earned a Bachelor of Science in Engineering from an accredited program with a minimum gpa of 3.0. Working engineers with undergraduate degrees in other fields, particularly mathematics, physics, or other physical sciences, may be accepted for this program; requirements for additional undergraduate work in engineering (non-engineering majors) are evaluated on an individual basis. Prospective students must score above 500 on the Graduate Management Admission Test (GMAT), provide three letters of recommendation, a resume showing significant engineering experience, and a brief personal statement outlining the appropriateness of the program in light of career goals and work history.

For information on the certificate program, please contact the Pullman office at 509-335-0125.

**Description of Courses**

**Engineering Management Courses**

**E M**

426 **Constraints Management** 3 Identifies factors that block improvements in any system; effective breakthrough solutions; continual systems improvements for manufacturing, administration, projects. Credit not granted for both E M 426 and 526.

430 **Applications of Constraints Management** 3 Understanding and applying proved solutions developed by the theory of constraints in areas of production, project management, finance, and distribution. Credit not granted for both E M 430 and 530.

460 **Manufacturing and Operations Design and Strategy** 3 Prereq junior standing. Concepts and techniques for design and managing manufacturing and service, operations intended to develop a world class organization.

480 **Quality Control and Reliability Design** 3 Prereq junior standing. Quality analysis including process modeling, product quality, statistical process control, process capability studies and reliability prediction models.

485 **Quality Engineering Using Experimental Design** 3 Prereq junior standing. The process of designing quality into products and processes using Taguchi Techniques for robust and parameter design.

490 **Design for Product and Service Realization/Manufacturability** 3 Prereq junior standing. Tools and techniques used by engineers for the improvement of the design of products and services.

501 **Management of Organizations** 3 Exploration of issues related to individual behavior in work organizations, including motivation, leadership, team-building, and team management skills.

505 **Financial Management for Engineers** 3 Time value of money, capital budgeting, accounting principles, cost, valuation, risk, cost accounting and sensitivity analyses: concepts for engineering decision-making.

508 **Legal Concepts for the Technical and Engineering Manager** 3 Prereq graduate standing. Basic legal obligations of engineering/technical managers; identify, minimize and recognize risks and liability; contemporary legal environment and business law. May be repeated for credit; cumulative maximum 6 hours.

517 **Simulation Modeling of Engineering Systems** 3 Prereq Stat 430; experience with computer programming. Analyzing and developing representative models for complex systems such as project or operations management using a variety of simulation styles.

526 **Constraints Management** 3 Graduate-level counterpart of E M 426; additional requirements. Credit not granted for both E M 426 and 526.

530 **Applications of Constraints Management** 3 Graduate-level counterpart of E M 430; additional requirements. Credit not granted for both E M 430 and 530.

534 **Contemporary Topics in Constraints Management** 3 Prereq E M 526 or 530. Contemporary teaching tools, software packages, current techniques and thought in managing complex systems using the theory of constraints. May be repeated for credit; cumulative maximum 6 hours.

540 **Operations Research for Managers** 3 Rec Math 273. Applying linear, integer, goal programming; network optimization; queuing analysis; dynamic programming; simulation; Markov analysis; and forecasting to engineering management decisions.

545 **Decision Analysis for Engineering** 3 Structured discipline for describing, analyzing, and finalizing decisions involving uncertainty.

555 **Enterprise Resource Planning** 3 Prereq graduate standing. Focus on the flow of quality, timely products and cooperative supply chain operations and planning.

560 **Integrated Supply Chain Management** 3 Analyzing and managing the flow of materials, services, and information for products from inception to final customer for technical managers.

564 **Project Management** 3 Rec basic statistics course. Planning, organizing, scheduling and controlling major projects; human dimensions, PERT and CPM scheduling models, resource allocation, and cost controls.

565 **Systems Engineering Management** 3 Prereq graduate standing. Design manufacture, operation of complex system development for engineering managers; project planning, organizing, and controlling tools for engineering system constraints.

570 **Six Sigma Quality Management** 3 Prereq graduate standing. Overview of the total field of quality, including strategic quality management programs, quality assurance, quality control, and product design.

575 **Performance Management in Technical Organizations** 3 Rec MgtOp 501 or C/. Management of high technology organizations; planning, measurement, and human factors in improving high technology organizations; productivity, motivation and performance systems.

580 **Quality Control and Reliability Design** 3 Prereq junior standing. Graduate-level counterpart of E M 480; additional requirements. Credit not granted for both E M 480 and 580.

585 **Quality Engineering Using Experimental Design** 3 Prereq junior standing. Graduate-level counterpart of E M 485; additional requirements. Credit not granted for both E M 485 and 585.

590 **Design for Manufacturability (DFM)** 3 Tools and techniques which can be used for the improvement of the design of products, processes, and services.
600 Special Projects or Independent Study Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

**Department of English**

libarts.wsu.edu/english

Avery 202 509-335-2581


The major in English provides students with a broad critical and cultural understanding of literature and literary studies, while at the same time emphasizing the writing and analytical skills that are vital to success in the University, in professional and graduate school, and in the workplace. The program of study is flexible and allows English majors to focus on particular areas of intellectual interest, to pursue electives, minors, and second majors in other departments, and to shape their academic careers in line with professional and personal interests. The curriculum is designed for (1) students who desire a breadth of language and literary studies, (2) students who wish to teach or to pursue electives, minors, and second majors in other departments. Option II is designed for students preparing for graduate study in English and related fields. Option III is for students who need specific training in the teaching of language and literature at the secondary level; it is coordinated with the Department of Teaching and Learning. Option IV is for English majors planning to enter law school; it emphasizes analytical and verbal skills and breadth requirements in areas identified as requisite to success in the profession by law schools. Option V is for English majors planning for a career in business; it emphasizes analytical and communication skills, and a core of business, economics, and computer science courses required for most business careers. Option VI is for students interested in creative writing in various forms (poetry, fiction, nonfiction prose), in editing and publishing, and in careers drawing on related creative and professional skills. Options I-V in the major include a four-course upper-division concentration, which must include an appropriate senior seminar, senior project (the latter possible with an acceptable proposal and advisor available to direct), or internship, the whole making up a coherent area of study. Concentrations must be approved by advisor, may include one nondepartmental or 100-200-level course if appropriate, and must fall into one of the following categories: English literature, American literature, literature and criticism, world literature/humanities, writers of color/ethnic studies, gender identity and literature, literature and cultural studies, language and linguistics, or writing and rhetoric (professional writing, creative writing, or rhetoric and theory emphasis). Some 300-400-level courses are offered only on alternate semesters; please check time schedule when planning these suggested sequences.

**Preparation for Graduate Study**

Students interested in a graduate program in English at Washington State University should offer preparation in English courses generally approximating one of the five undergraduate programs described above. Students with undergraduate majors in such subjects as philosophy, foreign languages, and history may also be accepted for graduate study in the department. Every student should be well grounded in at least one foreign language.

**Schedules of Studies**

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.
- An understanding of the interaction between humans and machines
- The capability to manage both creative and technical endeavors
- The ability to communicate with a wide variety of professionals
- The competence to analyze end-user needs and preferences and apply them to the development of process

### First Year

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<td>First Term</td>
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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Cpt S105 or 110</td>
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<td>DTC Core(^2)</td>
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<td>Elective</td>
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<td>Engl 304</td>
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<td>Physical Sciences [P] (GER)</td>
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### Second Year

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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>Engl 302 [M] [W] (GER)</td>
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<td>Engl 305 [H] or 306 [H] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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<td>ComSt 102 [C] (GER)</td>
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<td>Engl 383, 384, 385, or 386</td>
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<td>Engl 387, 388, or 389</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Electives</td>
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### Third Year

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<tr>
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<td>American Writers of Color(^2)</td>
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<td>Concentration Elective</td>
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<tr>
<td>Engl 380, 381, or 382</td>
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<tr>
<td>English Literature Elective(^4)</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<td>Electives</td>
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### Fourth Year

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<tr>
<td>Senior Seminar, Senior Thesis, or Internship(^5)</td>
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<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Electives</td>
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</table>

\(^1\) Students are expected to take three of the following as part of the core: Engl 338, Anth 355, Com 420, F A 331, Psych 301.

\(^2\) Students are encouraged to take an introductory fine arts course and introductory computer science course.

\(^3\) If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.

\(^4\) 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.

\(^5\) Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).
### III. ENGLISH—TEACHING OPTION (120 HOURS)

#### First Year

**First Term**  
**Hours**  
- Arts & Humanities [H,G] (GER)³ 3  
- Engl 101 [W] (GER) 3  
- GenEd 110 [A] (GER) 3  
- Math Proficiency [N] (GER) 3  
- Science Elective (GER) 4  

**Second Term**  
**Hours**  
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3  
- Biological Sciences [B] (GER) 4  
- Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER) 3  
- GenEd 111 [A] (GER) 3  
- Social Sciences [S,K] (GER)² 3  

#### Second Year

**First Term**  
**Hours**  
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 6  
- Engl 302 [M] [W] (GER) 3  
- Engl 305 [H] or 306 [H] (GER) 3  
- Grammar/Linguistics Elective³ 3  
- Intercultural [I,G,K] (GER) 3  

**Second Term**  
**Hours**  
- ComSt 102 [C] (GER)³ 3  
- Engl 383, 384, 385, or 386 3  
- Engl 387, 388, or 389 3  
- Electives 9  

#### Third Year

**First Term**  
**Hours**  
- American Writers of Color¹ 3  
- Concentration Elective⁴ 3  
- Engl 380, 381, or 382⁷ 3  
- English Language Elective³ 3  
- Elective 3  

**Second Term**  
**Hours**  
- Complete Writing Portfolio 3  
- Concentration Elective⁴ 3  
- Engl 324 3  
- Electives 9  

#### Fourth Year

**First Term**  
**Hours**  
- Concentration Elective⁴ 3  
- Engl 323 3  
- Electives 9  

**Second Term**  
**Hours**  
- Engl 324 3  
- Senior Seminar, Senior Thesis, or Internship⁵ 3  

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² One from Engl 311, 314, 321, 322, 341, 345, or 346.  
³ If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.  
⁴ 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.  
⁵ At least one from Hum 101, 103, 302, 303, 304, 335, or 410 is required.  
⁶ At least one from Hum 101, 103, 302, 303, 304, 335, or 410 is required.
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<td>First Term</td>
<td>Engl 101 [W] (GER)</td>
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<td>First Term</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Second Term</td>
<td>GenEd 110 [A] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<td>Science Elective (GER)</td>
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<td>Third Year</td>
<td>Engl 251</td>
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<td>Econ 102 [S] or 198 [S] (GER)</td>
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<td>Engl 302 [M] [W] (GER)</td>
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<td>First Term</td>
<td>Engl 305 [H] or 306 [H] (GER)</td>
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<td>Second Term</td>
<td>Cpt S 105 or Cpt S 100 and 101</td>
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<td>Engl 383, 384, 385, or 386</td>
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<td>Engl 387, 388, or 389</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>B Law 210</td>
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<td>Elective</td>
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<td>Engl 380, 381, or 382</td>
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<td>MIS 250 or 350</td>
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<td>Complete Writing Portfolio</td>
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<td>English Literature Elective</td>
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<td>Mgt 301 or MgtOp 340</td>
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<td>First Term</td>
<td>Phil 260 [H] (GER)</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Elective (200-level lit. course recommended)</td>
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<td>Engl 351, 352, or 353</td>
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<td>Second Term</td>
<td>Literature Elective (300-400 level)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Second Term</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Fourth</td>
<td>First Term</td>
<td>Engl 446</td>
<td>3</td>
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<tr>
<td></td>
<td>First Term</td>
<td>Literature Elective (300-400 level)</td>
<td>3</td>
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<tr>
<td></td>
<td>First Term</td>
<td>Complete Writing Portfolio</td>
<td>3</td>
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<tr>
<td></td>
<td>Second Term</td>
<td>Engl 355, 357, or 402</td>
<td>3</td>
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<tr>
<td></td>
<td>Second Term</td>
<td>Electives</td>
<td>9</td>
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<tr>
<td></td>
<td>Second Term</td>
<td>Engl 451 or 452</td>
<td>3</td>
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<tr>
<td></td>
<td>Second Term</td>
<td>Literature Elective (300-400 level)</td>
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<tr>
<td></td>
<td>Second Term</td>
<td>Electives</td>
<td>9</td>
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<tr>
<td>Minors</td>
<td>First Term</td>
<td>400-level Literature Elective</td>
<td>3</td>
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<td>First Term</td>
<td>Electives</td>
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<td></td>
<td>Second Term</td>
<td>Creative Writing or Literature Elective</td>
<td>3</td>
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<tr>
<td></td>
<td>Second Term</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Minors</td>
<td>Elective</td>
<td>3</td>
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</tbody>
</table>

**Certificates**

**Professional Writing Certificate**

To earn the Professional Writing Certificate, students must complete the following five courses with a 3.0 GPA or better: Anth 320, Engl 320, 355, 302, and 498. Engl 498 must be taken only after the other four courses have been completed. The certificate can be earned through the Distance Degree Program and/or on-campus offerings. The University undergraduate certificate fee will apply.

**Description of Courses**

**Digital Technology and Culture Courses**

**DTC**

**375 [H,M] Language, Texts, and Technology** 3 Prereq junior standing. Same as Engl 375.

**475 [T,D,M] Digital Diversity** 3 Prereq junior standing; completion of one Tier I and three Tier II courses. Same as Am St 475.

**476 Digital Literacies** 3 Prereq Engl/DTC 375. Same as Engl 476.

**477 Advanced Multimedia Authoring** 3 (0-6) Prereq Engl 355. Same as Engl 477.

**478 Usability and Interface Design** 3 (0-6) Prereq Engl 355. Same as Engl 478.

**English Courses**

**Engl**

**100 Basic Writing** 3 Prereq writing placement exam. Designed to introduce students to writing and reading in the University. S, F grading.

**101 [W] Introductory Writing** 3 Prereq writing placement exam or Engl 100. Designed to develop students’ academic writing, critical thinking, rhetorical strategies, reading and library skills. Credit not granted for more than one: Engl 101, 105, and 198.

**102 Writing Tutorial V 1 (0-3) to 3 (0-9). May be repeated for credit; cumulative maximum 5 hours. Prereq writing placement exam. Student-centered group tutorial focusing on writing improvement usually connected to the completion of one Tier I or Tier II course. S, F grading.**

**104 Intermediate Grammar and Basic Skills ESL** 3 Prereq writing placement exam. Designed to introduce non-native speakers of English to writing and reading in the University.

**105 [W] Composition for ESL Students** 3 Prereq writing placement exam. Designed to develop academic writing, critical thinking, reading, library skills, and rhetorical strategies for non-native speakers of English. Credit not granted for more than one: Engl 101, 105, 198.

**106 Conversation ESL** 1 (0-2) May be repeated for credit; cumulative maximum 2 hours. Oral communication designed specifically to fit the needs of international students.
108 [H] Introduction to Literature 3 Reading short stories, novels, plays, and poetry by diverse voices; role of conventions, culture, history in interpretation of literature. Credit not granted for both Engl 108 and 199.

138 Freshman Special Topics 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

150 Introduction of Film as Narrative 3 (2-3) Introduction to analysis of techniques and elements of narrative film and to critical vocabulary for its study as art form.

198 [W] English Composition Honors 3 Credit not granted for more than one: Engl 101, 105, and 198. Open only to students in the Honors College.

199 [H] English Composition and Literature Honors 3 Credit not granted for both Engl 108 and 199. Open only to students in the Honors College.

200 [W] Expository Writing 1 or 2 Prereq sophomore standing. For transfer students who need to make up writing credits.

201 [W] Writing and Research 3 Prereq Engl 101 or 105. Designed to develop students' researching skills for writing across the disciplines.

202 Grammar in Context 1 Prereq concurrent writing course. May be repeated for credit; cumulative maximum 2 hours. Tutorial to assist students in mastering conventions of Standard Edited American English. S, F grading.

205 [H] Introduction to Shakespeare 3 Shakespeare plays with emphasis on stage productions and film adaptations in various cultural contexts.

209 [H] Readings in English Literature 3 Selected works by diverse voices from different eras of English literature; importance of conventions, cultural contexts, for interpretation and understanding.

210 [H] Readings in American Literature 3 Selected works by diverse voices from different eras of American literature; importance of conventions, cultural contexts, for interpretation and understanding.

216 [S,D] American Cultures 3 Same as Am St 216.

220 [H,D] Introduction to Multicultural Literature 3 Same as CES 220.

251 Introduction to Creative Writing: Exploring the Genres 3 Beginning writer's workshop covering short fiction, creative nonfiction, and poetry with discussion of the elements of each genre; poetic forms.

255 English Grammar 3 Introduction to the terms, concepts, and analytical methods of traditional English grammar.

256 Introduction to Syntax and Semantics 3 Technical introduction to the structure of words and sentences in natural languages and to the study of linguistic meaning.

298 [W] Writing and Research Honors 3 Prereq advanced placement credit in Engl 101 or Engl 198. Advanced writing for honors students who enter the University with credit for Engl 101.

300 Computers in English 1 (0-3) May be repeated for credit; cumulative maximum 6 hours. Use of computers in the writing process and in the analysis of literature. S, F grading.

301 [W] Writing and Rhetorical Conventions 3 Prereq Engl 101 or 105. Designed to provide students with advanced practice in and study of style, argument, and other discourse conventions.

302 [W,M] Writing About Literature 3 Prereq Engl 101; one college-level literature course or c/. Rhetorical and problem-solving skills in writing analysis of literary texts; critical approaches, theories of interpretation, use of research.

303 Revision Workshop—ESL 3 Prereq GER written communication proficiency course and completion of University Writing Portfolio. Appreciation of writing processes and revision for speakers of English as a second or foreign language, including self-assessment, developing rhetorical approaches, diagnosing and solving consistent problems, editing, and proofreading strategies.

304 Revision Workshop 3 Prereq GER written communication proficiency course and completion of University Writing Portfolio. Appreciation of writing processes and revision, including self-assessment, developing rhetorical approaches, diagnosing and solving consistent problems, editing, and proofreading strategies.

305 [H] Shakespeare 3 Shakespearean drama to 1600.

306 [H] Shakespeare 3 Shakespearean drama after 1600.

307 Historicized Analysis of Literature 3 Prereq Engl 302 or c/. Introduction to analyzing literary texts in relation to literary and cultural history.

308 [H,M] Introduction to Literary Criticism 3 Introduction to the systematic study of critical and theoretical approaches to literature; emphasis on problems of interpretation.

309 [H] Women Writers 3 Women's artistic and intellectual contributions to prose, fiction, drama, and poetry.

311 [G] Asian/Pacific American Literature 3 Same as CES 313.

314 [M] Topics in Asian/Pacific American Literature 3 Same as CES 314. May be repeated for credit; cumulative maximum 6 hours.


321 [G] African American Literature 3 Same as CES 331.

322 [M] Topics in African American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Trends and major writers.

323 Approaches to the Teaching of English 3 Literature and language arts in secondary schools.


325 Young Adult Literature 3 Issues in literature written for young adults and strategies for teaching the genre in secondary schools.

326 Applied Grammar for Teachers 3 Application of traditional English grammar for K-12 teachers, with focus on edited, American, African American, vernacular, and Spanish-influenced Englishes.

332 [M] Topics in Poetry 3 May be repeated for credit; cumulative maximum 6 hours. Forms, history, development of poetry; the lyric, verse satire, dramatic monologue, modernist verse.

333 [M] Topics in Fiction 3 May be repeated for credit; cumulative maximum 6 hours. Forms, history, development of narrative fiction: the tale, short story, Continental and experimental novel.

334 [M] Topics in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Forms, history, development of drama: comedy, tragedy, Medieval religious drama, theatre of the absurd.

335 [H] The Bible as Literature 3 Historical and literary approach to texts of the Jewish and Christian scriptures; emphasis on history, interpretation, and influence.

336 [H] Composition and Design 3 Prereq junior standing. Design practices and process for composing for a multimedia environment including color, pattern and shape.

337 Experimental Animation 3 (2-2) Digital and analog animation techniques; conceptual development of narrative structures.

338 [M] Topics: Major Trends and Figures 3 May be repeated for credit; cumulative maximum 6 hours. Literary trends or major writers.

339 Topics in Film as Literature 3 (2-3) Analytical study of film as major literary genre. May be repeated for credit; cumulative maximum 6 hours.

340 Science Fiction Film 3 (2-3) Major science fiction films and the literature which inspired them.

341 [G,M] Native American Literature 3 Same as CES 373.


346 Topics in Latina/o Literature 3 Prereq CES 101. Same as CES 354.

351 Creative Writing: Prose 3 Prereq Engl 251 or substitution approved by instructor. Writing the short story: practice and theory.

352 Creative Writing: Poetry 3 Prereq Engl 251 or substitution approved by instructor. Workshop approach to poetry writing.
353 Creative Writing: Nonfiction 3 Prereq Engl 251 or substitution approved by instructor. Workshop approach to poetry writing.

354 History of the English Language 3 Prereq one-year foreign language. Language related to the origin, history, and literature of its speakers.


356 Electronic Research and the Rhetoric of Information 3 Social and cultural role of information; research with electronic sources; production, validation, storage, retrieval, evaluation, use, impact of electronic information.

357 Topics in Magazine Editing and Creative Writing 3 May be repeated for credit; cumulative maximum 6 hours. Magazine editing, audience, and cultural contexts; professional publishing techniques; other specialized topics in professional and creative writing.

358 Workshop Topics in Writing, Teaching, Literature 1 May be repeated for credit; cumulative maximum 6 hours. Prereq junior standing or approval of instructor. An intensive, time-limited workshop, offered by visiting writers, scholars, and other experts, in topics of special interest. S, F grading.

359 Topics in Creative Writing 3 Prereq Engl 251. Specialized topics in creative writing. May be repeated for credit; cumulative maximum 9 hours.

360 [H] The English Novel to 1900 3 Classic English novels in cultural perspective by such authors as Defoe, Fielding, Austen, the Brontes, Thackeray, Dickens, George Eliot, Hardy.

368 [H] The American Novel to 1900 3 Classic American novels in cultural perspective by such authors as Cooper, Hawthorne, Melville, Stowe, Twain, James, Jewett, Chopin, Crane, Dreiser.

375 [H,M] Language, Texts and Technology 3 Prereq junior standing. Relationship between technology and communication; writing practices from a historical point of view.

380 American Literature to 1855 3 Prereq Engl 302 or substitution approved by advisor. American writing from Settlement and Revolution through the times of Irving, Poe, Emerson, Hawthorne, Fuller, Thoreau, and Melville.

381 American Literature 1855-1916 3 Prereq Engl 302 or substitution approved by advisor. American writing in an era of expansion, social and literary ferment: Whitman, Dickinson, Frost, the literature of realism and naturalism.

382 Modern American Literature 3 Prereq Engl 302 or substitution approved by advisor. Major literary movements and alternate voices in American poetry, fiction, and drama from World War I to the present.

383 Chaucer and Medieval Literature 3 Prereq Engl 302 or substitution approved by advisor. Chaucer’s Canterbury Tales in the context of Medieval culture and literary tradition.


385 Milton and English Literature of the 17th Century 3 Prereq Engl 302 or substitution approved by advisor. Nondramatic literature from the Metaphysicals and Johnson through Milton, against background of scientific revolution, religious controversy, and civil war.

386 English Literature of the Restoration and 18th Century 3 Prereq Engl 302 or substitution approved by advisor. Neo-classical literature from 1660 to the Romantic era: Dryden, Swift, Pope, Johnson, Gray, Goldsmith, Burns, and others.

387 English Romantic Literature 3 Prereq Engl 302 or substitution approved by advisor. Major works by Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, and others during Romantic literary revolt, especially 1798-1832.

388 Victorian Literature 3 Prereq Engl 302 or substitution approved by advisor. Major works by Tennyson, Dickens, Browning, Swinburne, Wilde, and others in a dynamic age of change in Britain, 1832-1901.

389 Modern British Literature 3 Prereq Engl 302 or substitution approved by advisor. Fiction, drama, poetry in age of conflict, artistic experimentation: Joyce, Woolf, Lawrence, Murdoch, Shaw, Pinter, Yeats, Eliot, Auden, and others.

390 History of Rhetoric 3 Survey of influential theories of rhetoric, ancient to modern.

391 Topics—Study Abroad 3

401 [WM] Technical and Professional Writing 3 Prereq Engl 101, junior standing. Research writing: defining, proposing, reporting progress; presenting a final product; other professional writing needs. Credit not granted for both Engl 402 and 403.

403 [WM] Technical and Professional Writing ESL 3 Prereq Engl 101; pass University Writing Portfolio or concurrent enrollment in additional assigned coursework. For non-native speakers of English. Same as Engl 402. Special grammatical and rhetorical problems. Credit not granted for both Engl 402 and 403.

405 Advanced Professional Writing and Editing 3 Prereq Engl 402 or by interview. Professional writing and editing; textual alterations, design, and layout, including internship experience.

409 [T] Women Writers in the American West 3 Prereq completion of one Tier I and three Tier II courses. Diversity of writings by women in the trans-Missouri West from the 1890s to the present.

410 [T] Cultural Criticism and Theory 3 Same as CES 405.

415 [T] Traditions of Comedy and Tragedy 3 Prereq completion of one Tier I and three Tier II courses. Study of tragedy and comedy in the Age of Shakespeare.

419 [T] The Twentieth Century Novel 3 Prereq completion of one Tier I and three Tier II courses. The novel in English in the literary and cultural context of the modern age.

436 Ethnoarchaeology 3 Multidisciplinary approach (archaeology, ethnography and history) to the interpretation of past human cultures.

443 Problems in English Linguistics: Syntax and Phonology 3 May be repeated for credit; cumulative maximum 6 hours. Technical introductions to generative analysis of sentences and to sound systems of human languages. Credit not granted for both Engl 443 and 454.

446 Form and Theory in Creative Writing: Prose and Poetry 3 Prereq two college-level creative writing courses. Formal elements of fiction, creative nonfiction, poetry for creative writing students; analysis of contemporary applications of traditional and experimental techniques.

451 Advanced Creative Writing: Prose 3 May be repeated for credit; cumulative maximum 6 hours. Prereq one upper-division creative writing course. Advanced workshop in writing fiction or creative nonfiction prose.

452 Advanced Creative Writing: Poetry 3 May be repeated for credit; cumulative maximum 6 hours. Prereq one upper-division creative writing course. Workshop approach to poetry writing for the advanced student.

458 Topics in Sociolinguistics and Psycholinguistics 3 May be repeated for credit; cumulative maximum 6 hours. Relationship of language to social and psychological structures.

470 [T] Literature and Culture of the American West 3 Prereq completion of one Tier I and three Tier II courses. Cultural exploration of American West in written texts; outsider and insider versions of reality and imagination of its diverse peoples.

471 [T] Cultural Politics Since World War II 3 Same as Am St 471.

472 [T] Ecological Issues and American Nature Writing 3 Prereq completion of one Tier I and three Tier II courses. Same as Am St 472.

475 [T,D,M] Digital Diversity 3 Prereq junior standing; completion of one Tier I and three Tier II courses. Same as Am St 475.

476 Digital Literacies 3 Prereq Engl/DTC 375. Development and use of new literacies as they affect communication through technology.

477 Advanced Multimedia Authoring 3 (0-6) Prereq Engl 355. Advanced writing, imaging and teamwork skills for authoring in new computer-based media; Web site project in client-oriented context.
478 Usability and Interface Design 3 (0-6) Pre-req Engl 355. Design of Web sites using best practices of visual literacy, interface architecture, and usability.

492 [M] Advanced Topics in Literature, Criticism, and Theory 3 Not open to graduate students. Seminar with term paper project; focused studies in literature and critical theory.

493 [M] Advanced Topics in English Literature 3 Not open to graduate students. Seminar with term paper project; focused studies in English literature.

494 [M] Advanced Topics in American Literature 3 Not open to graduate students. Seminar with term paper project; focused studies in American literature.

495 [M] Advanced Topics in English for Teachers 3 Prereq senior in English/teaching option. Not open to graduate students. Seminar with term paper project; literature, composition theory, pedagogy.

496 Topics in American Studies 3 American Studies Summer Institute. Credit not granted for both Engl 496 and 596. May be repeated for credit; cumulative maximum 9 hours.

498 Internship V 1-15 May be repeated for credit; cumulative maximum 15 hours. Prereq junior in English. Cooperative learning experience in business, education, or industry in English-related jobs. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 Introduction to Graduate-Level Writing for ESL Students 3 Prereq graduate standing. Introduction to the linguistic and rhetorical conventions of graduate-level writing, including the preparation of master's theses and dissertations.

501 Seminar in the Teaching of Writing: Methodology of Composition 3 Development of a workable definition of the methods of composing through a review of relevant research and problem-solving exercises.


503 Old English: Anglo-Saxon 3 Old English language and its literature with emphasis on short lyrics and prose.

504 Old English: Beowulf 3 Prereq Engl 503. Advanced study of Old English language and literature with focus on the epic Beowulf.

506 Seminar in 16th Century English Literature 3 May be repeated for credit; cumulative maximum 6 hours.

507 Shakespeare 3 Plays, poems, criticism, and background materials.

508 Seminar in Assessment of Writing 3 Problems involved in the diagnosis and assessment of student writing.

509 Seminar in Classical Rhetoric and its Influences 3 Study of Greek and Roman rhetorical theories and their influences.

510 Backgrounds of American Literature 3 Studies of American writing in cultural contexts.

511 Seminar in 17th and 18th Century American Literature 3

512 Introduction to Graduate Study 3

513 Theory and Method in American Studies 3 Same as Am St 513.

514 Seminar in 20th Century American Literature 3 May be repeated for credit; cumulative maximum 6 hours.

515 Contemporary Theories of Rhetoric 3 Contemporary critical theory and cultural studies and reconsiderations of suasive discourse practices.

516 Rhetorical Theory 3 Same as Com 525.

521 Seminar in British Romantic Literature 3 May be repeated for credit; cumulative maximum 6 hours.

522 Seminar in Victorian Literature 3 May be repeated for credit; cumulative maximum 6 hours.

525 Seminar in English Literature of the 17th Century 3 May be repeated for credit; cumulative maximum 6 hours.

527 Seminar in English Literature of the Restoration and 18th Century 3 May be repeated for credit; cumulative maximum 6 hours.

529 Seminar in 19th Century American Literature 3 May be repeated for credit; cumulative maximum 6 hours.

531 Administering a Writing Lab 3 Prereq Engl 501 or 502 or consent of Writing Lab Director. Combining theory and practice in writing lab supervision and management. Interns will work under direct faculty supervision.

532 Teaching Writing to Nontraditional Students 3 Prereq Engl 501. Theory and practice of the teaching of basic writers.

534 Theories and Methods of the Teaching of Technical and Professional Writing 3 Historical and theoretical bases for production of scientific discourse; training in its practical applications.

537 Seminar in English Literature 3 May be repeated for credit; cumulative maximum 12 hours. Major topics and figures.

543 Problems in English Linguistics: Syntax and Phonology 3 May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of Engl 443; additional requirements. Credit not granted for both Engl 443 and 543. Cooperative course taught jointly by WSU and UI (Eng 543).

547 Literary Criticism 3 Theories of literature from Plato and Aristotle to the present.

548 Seminar in Literary Theory 3 May be repeated for credit; cumulative maximum 6 hours. Problems in the theory and practice of literary criticism.

549 Seminar in 20th Century British Literature 3 May be repeated for credit; cumulative maximum 6 hours.

550 Seminar in Poetry or Non-fiction Prose 3 May be repeated for credit; cumulative maximum 6 hours. Historical and generic studies in poetry and non-fiction prose.

554 History of the English Language 3

555 Seminar in Middle English Literature 3 May be repeated for credit; cumulative maximum 6 hours.

566 Human Osteology 9 Graduate-level counterpart of Anth 466; additional requirements.

567 Seminar in Prose Fiction 3 May be repeated for credit; cumulative maximum 6 hours. Historical and generic studies of prose fiction.

573 Seminar in American Literature 3 May be repeated for credit; cumulative maximum 12 hours. Major topics and figures.

580 Seminar in Medieval Literature 3 May be repeated for credit; cumulative maximum 6 hours. The literature of western Europe from 450 to 1500.

590 Research in English Studies 1 Prereq graduate standing. Directed reading and interpretive problems in English studies. May be repeated for credit; cumulative maximum 6 hours.

591 The Teaching of Literature 3 Prereq two semesters full-time enrollment in program or consent of advisor. The theory and practice of designing and teaching courses in literature.

592 Language Arts: Methods of Composition 3 Methods of composition and relevant research in language arts.

595 Topics in English 3 May be repeated for credit; cumulative maximum 6 hours. Language, English pedagogy, or literature of special or current interest; reading theories, teaching of writing, current literary theories.

596 Topics in American Studies 3 Graduate-level counterpart of Engl 496; additional requirements. Credit not granted for both Engl 496 and 596.

597 Topics in Composition and Rhetoric 3 May be repeated for credit; cumulative maximum 6 hours. Rhetoric and composition theory and praxis.

598 Teaching Apprenticeship 1 May be repeated for credit. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
Department of Entomology

entomology.wsu.edu/  
FHSN 166  
509-335-5504


Insects and other related arthropods are dominant components in all terrestrial ecosystems. There are more kinds of insects than all the other species of animals and plants combined. This almost unimaginable diversity provides the most fertile resource for scientific inquiry within a number of areas of biology. Entomology at Washington State University is active, robust, and dynamic. The curriculum provides the opportunity to investigate the basic and applied aspects of the science. Facilities and training are available for study in major areas of entomology, including, but not limited to, apiculture, behavior, integrated biological control and sustainable pest management, ecology, forest entomology, insect/plant interactions, population genetics, physiology, taxonomy/systematics, biological diversity, and environmental toxicology. We believe that a detailed understanding of insect biology is a prerequisite to developing rational, effective, and sustainable management measures. Similarly, an understanding of the ecological ramifications of such management measures, particularly pesticide use, is a requirement.

The entomology curriculum provides the opportunity to study the basic and applied aspects of entomology and prepares students for graduate study in entomology or for employment in institutional or private pest control oriented areas. Courses are designed for majors and nonmajors, providing needed training for students in agriculture, education, veterinary medicine, microbiology, public health, environmental sciences, and natural sciences. An interdisciplinary curriculum integrated in pest management (IPM) is available to students with interests that span entomology and pest management.

Facilities are available for graduate study in the major areas of entomology as delineated above. Departmental faculty, adjunct faculty, and affiliate faculty may all serve as student advisors. Faculty is housed both on campus and at research stations throughout the state; this ability to significantly interact with both on and off campus advisors and mentors offers students opportunities and perspectives not available in most programs. We maintain strong cooperative interactions with the USDA, ARS lab in Warapo, Washington, and students are encouraged to explore this avenue for advisors and funding opportunities. The department has a long and excellent record of student placement both nationally and internationally. Extensive insect collections, insectary, quarantine, and computer and video facilities support teaching, extension, and research. The department is committed to both basic and applied aspects of the science. We are heavily involved developing an integrated biological control approach to pest management. This commitment is reflected in the broad involvement of the faculty in all aspects of entomology.

The department offers courses of study leading to the degrees of Bachelor of Science in Entomology, with three options available in entomology: human/animal health, and tree fruit IPM; Master of Science in Entomology, and Doctor of Philosophy (Entomology). Additional information can be obtained on the Web at entomology.wsu.edu.

Preparation for Graduate Study

As preparation for work toward an advanced degree in entomology, a student should have completed an undergraduate major in one of the biological or physical sciences, forestry, agriculture, or a closely related field. Potential students with majors in other disciplines are considered on an individual basis. Background work should include courses in the biological and physical sciences, genetics, ecology, entomology, and the plant and animal sciences.

### INTEGRATED PEST MANAGEMENT

The integrated pest management (IPM) major is a multidisciplinary course of study sponsored by the Department of Entomology. Students electing the IPM major will take courses in the Departments of Crop and Soil Sciences, Entomology, Horticulture and Landscape Architecture, and Plant Pathology. Students acquire a holistic perspective and ecological understanding of the philosophy, principles, and practices of pest management and are trained to become professional crop protection specialists. Students in this major have the option of obtaining a general background in pest management or specializing in the areas of entomology, weed science, and tree fruit IPM within pest management. All students also participate in a sustainability program whereby they have the opportunity to gain work experience through supervised off-campus employment with pest management individuals or organizations.

All students are required to complete a minimum of 120 semester hours of course work, including the internship, to earn the Bachelor of Science degree in Entomology with a major in IPM.

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<tr>
<th>Schedules of Studies</th>
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<tr>
<td>Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.</td>
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**ENTOMOLOGY—GENERAL OPTION (120 HOURS)**

Students planning to become pest control consultants or pest management specialists should include the following courses: Ag Ec 201, CropS 305; IPM 201, 452, 462; Pl P 429; Soils 201; Stat 310 or 412, and crops courses in CropS and Hort.

**ENTOMOLOGY—HUMAN/ANIMAL HEALTH OPTION (120 HOURS)**

The human/animal health option is geared toward students interested in pre-professional training and will prepare students for medical, dental, or veterinary professional schools, and will also give a fall-back opportunity for degree holders in the areas of professional human and animal health, including public health and animal care organizations. Entomology represents a unique discipline that easily bridges between several diverse biological disciplines. Students completing this option should be highly trained pre-professional graduates who will be prepared to enter the public or veterinary health areas or pursue a career in entomology.

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<th>First Year</th>
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<tr>
<td>First Term</td>
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<td>Hours</td>
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<td>Biol 106 [B] (GER)</td>
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<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
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<td>Biol 107 [B] (GER)</td>
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<tr>
<td>Chem 102 [P] or 106 [P] (GER)</td>
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<td>Communication Proficiency [C,W] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<td>First Term</td>
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<tr>
<td>Hours</td>
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<tr>
<td>Ag Ec 201 [S] or Econ 102 [S] (GER)</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Physical Science [P] (GER)</td>
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<td>Biol 372</td>
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<td>Chem 345</td>
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<td>MBioS 301</td>
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<td>Social Sciences [S,K] (GER)</td>
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<td>First Term</td>
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<tr>
<td>Hours</td>
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<td>Bot 320, Zool 352, or 353</td>
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<td>Entom 343[M], 344 [M]</td>
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<td>Math 140 [N] or 205 [N] (GER)</td>
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<td>Electives</td>
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<td>Complete Writing Portfolio</td>
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<td>Biol 120, 320, or 332</td>
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## Department of Entomology

The tree fruit integrated pest management option in the Entomology BS degree is an integrated, cooperative program between Wenatchee Valley College and the department of entomology. This option is designed to prepare integrated pest management specialists for employment with the tree fruit industry in Washington or elsewhere in the Pacific Northwest. The first half of the program is taken at Wenatchee Valley College, where the emphasis is on fundamental agricultural science, tree fruit production, and orchard management (including pest management) through courses and orchard practicum experiences. Wenatchee Valley College, located in the heart of Washington’s tree fruit industry, has teaching orchards and well equipped facilities. The second half of the program is taken at Washington State University where courses provide students with an advanced knowledge of plant science, entomology, and integrated pest management and fulfill remaining GER’s necessary for the BS degree.

### INTEGRATED PEST MANAGEMENT—TREE FRUIT OPTION (146 HOURS)

The tree fruit integrated pest management option in the Entomology BS degree is an integrated, cooperative program between Wenatchee Valley College and the department of entomology. This option is designed to prepare integrated pest management specialists for employment with the tree fruit industry in Washington or elsewhere in the Pacific Northwest. The first half of the program is taken at Wenatchee Valley College, where the emphasis is on fundamental agricultural science, tree fruit production, and orchard management (including pest management) through courses and orchard practicum experiences. Wenatchee Valley College, located in the heart of Washington’s tree fruit industry, has teaching orchards and well equipped facilities. The second half of the program is taken at Washington State University where courses provide students with an advanced knowledge of plant science, entomology, and integrated pest management and fulfill remaining GER’s necessary for the BS degree.

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<td>Entom 343, 344</td>
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<td>One from: Entom 348, 441, 448 or 450</td>
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### INTEGRATED PEST MANAGEMENT—ENTOMOLOGY OPTION (130 HOURS)

The tree fruit integrated pest management option in the Entomology BS degree is an integrated, cooperative program between Wenatchee Valley College and the department of entomology. This option is designed to prepare integrated pest management specialists for employment with the tree fruit industry in Washington or elsewhere in the Pacific Northwest. The first half of the program is taken at Wenatchee Valley College, where the emphasis is on fundamental agricultural science, tree fruit production, and orchard management (including pest management) through courses and orchard practicum experiences. Wenatchee Valley College, located in the heart of Washington’s tree fruit industry, has teaching orchards and well equipped facilities. The second half of the program is taken at Washington State University where courses provide students with an advanced knowledge of plant science, entomology, and integrated pest management and fulfill remaining GER’s necessary for the BS degree.

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<td>Eng 101</td>
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<td>Chem 111</td>
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INTEGRATED PEST MANAGEMENT—WEED SCIENCE OPTION (132 HOURS)

First Year

**First Term**
- **Biol 106 [B] (GER)** 4
- **Chem 101 [P] or 105 [P] (GER)** 4
- **Engl 101 [W] (GER)** 3
- **GenEd 110 [A] (GER)** 3
- **IPM 201** 2

**Second Term**
- **Biol 107 [B] or 120 [B] (GER)** 4
- **Chem 102 [P] or 106 [P] (GER)** 4
- **GenEd 111 [A] (GER)** 3
- **Math 140 [N] or Stat 212 [N] (GER)** 4
- **Psych 105 [S] (GER)** 3

Second Year

**First Term**
- **Ag Ec 201 [S] (GER)** 3
- **CropS 201 or Hort 201** 4
- **ES/RP 101 [B] (GER)** 4
- **ES/RP 174** 3
- **H D 205 [C] (GER)** 3

**Second Term**
- **Arts & Humanities [H,G] or Social Sciences [S,K] (GER)** 3
- **Chem 345** 4
- **ES/RP 150 [Q] or Zool 150 [Q] (GER)** 3
- **Intercultural [I,G,K] (GER)** 3
- **Soils 201 [B] (GER)** 3

Third Year

**First Term**
- **Arts & Humanities [H,G] (GER)** 3
- **Bot 320** 4
- **CropS 302** 3
- **CropS 305** 3
- **PI P 429** 3
- **Complete Writing Portfolio**

**Second Term**
- **Biol 372 [M]** 4
- **Bot 332** 4
- **Entom 340; or 343, 344** 3 or 4
- **IPM 452** 2
- **Elective/Option Course** 3
- **Year 3, Summer Session: IPM 399** 3

Fourth Year

**First Term**
- **CropS 303** 3
- **CropS 443** 3
- **Tier III Course (GER)** 3
- **Elective/Option Courses** 6

**Second Term**
- **IPM 462 [M]** 3
- **Soils 301** 3
- **Elective/Option Courses** 9-12

Minors

**Entomology**
A minimum of 16 hours is required for the minor and must include Entom 343, 344, 439, or 440 and 9 hours from: Entom 348, 441, 448, 449, 450, 462; IPM 201, 452, 462.

**Description of Courses**

**Entomology Courses**

1. **Entom 101 [B] Insects and People: A Perspective** 3

   The world's most abundant animals and their extensive effects on people yesterday and today.

2. **Entom 150 Insects, Science, and World Cultures** 3 (2-3)

   Impact of insects and agriculture on human affairs with emphasis on cultures and countries around the world; especially useful for non-science majors and K-8 pre-service teachers. Cooperative course taught by WSU, open to UI students (Ent 150).

3. **Entom 340 Agricultural Entomology** 3 (2-3)


4. **Entom 349 Taxonomic Entomology** 3 (2-3)

   Prereq Entom 340 or 343. Identification of insect orders and families. Insect collection required. Credit not granted for both Entom 439 and 539.

5. **Entom 441 Insect Ecology** 3 (2-3)

   Prereq Entom 340 or 343. General ecology course. Population and community dynamics, theory and application in natural and artificial systems. Field trips required. Credit not granted for both Entom 440 and 540.

6. **Entom 445 Insect Control** 3 (2-3)

   Prereq Entom 343 or general ecology course. Population and community dynamics, theory and application in natural and artificial systems. Field trips required. Credit not granted for both Entom 440 and 540.

7. **Entom 446 Insect-Plant Interactions: Mechanisms of Resistance to Arthropods** 3 (2-3)

   Prereq Entom 343. Biochemical, ecological and microevolutionary principles of plant resistance. Credit not granted for both Entom 445 and 540. Cooperative course taught by UI (Ent 445), open to WSU students.

8. **Entom 447 Introduction to Biological Control** 3 (2-3)

   Prereq Entom 106. Principles and methods of controlling insect pests and weeds by biological means. Credit not granted for both Entom 447 and 548. Cooperative course taught by UI (Ent 447), open to WSU students.

9. **Entom 448 Medical Entomology** 3 (2-3)

   Prereq Entom 106, 107. Aspects of medical entomology as they apply to humans. Cooperative course taught by UI (Ent 448), open to WSU students.

10. **Entom 450 Principles of Applied Entomology** 4 (3-3)

    Prereq Entom 340 or 343. Utilization of biological, physical, cultural and chemical factors in managing insect pest populations.

11. **Entom 460 Insects for Teaching** 3 (2-3)

    Prereq Entom 340 or 343. Utilization of biological, physical, cultural and chemical factors in managing insect pest populations.

12. **Entom 499 Special Problems** 1-4 May be repeated for credit; cumulative maximum 10 hours. Credit not granted for both Entom 490 and 590.

13. **Entom 500 Special Problems** 1-4 May be repeated for credit. S, F grading.

14. **Population Analysis** 1 Same as NATRS 526.

15. **Principles of Population Dynamics** 1 Same as NATRS 529.
539 Taxonomic Entomology 2 or 4 (2-6) Graduate-level counterpart of Entom 439; additional requirements. Credit not granted for both Entom 439 and 539.

540 Taxonomy of Immature Insects 2 or 4 (2-6) Graduate-level counterpart of Entom 440; additional requirements. Credit not granted for both Entom 440 and 540.

541 Insect Ecology 3 (2-3) Prereq Entom 343 or general ecology course. Graduate-level counterpart of Entom 441; additional requirements.

542 Insect Behavior 3 Prereq one year biology or entomology. Principles of the behavior of insects. Cooperative course taught by WSU, open to UI students (NEED UI EQUIV).

543 Predator-Prey Dynamics 1 Prereq calculus, general ecology, statistics. Dynamic consequences of interactions between predators and their prey at the population, community and ecosystem level.

545 Insect-Plant Interactions: Mechanisms of Resistance to Arthropods 3 (2-3) Graduate-level counterpart of Entom 445; additional requirements. Credit not allowed for both Entom 445 and 545. Cooperative course taught by UI (Ent 445), open to WSU students.

546 Host Plant Resistance 3 Prereq graduate standing. Graduate-level counterpart of Entom 446; additional requirements. Credit not granted for both Entom 446 and 546. Cooperative course taught by UI (Ent 546), open to WSU students.

547 Introduction to Biological Control 3 (2-3) Graduate-level counterpart of Entom 472; additional requirements. Credit not granted for both Entom 472 and 547.

550 Insect Physiology 3 Prereq Biol 322, Chem 345; Biol 322, Entom 340, or 343. General principles of insect physiology; the mechanisms of vital processes in insects; organ, cellular, subcellular, chemical and physical levels. Cooperative course taught by WSU, open to UI students (Ent 550).

551 Biological Control of Weeds 1 Prereq general ecology. Principles, methodologies, and implementation of biological control of weeds in noncropland environments. Cooperative course taught by WSU, open to UI students (Ent 551).

555 Applied Design and Analysis of Ecological Field Experiments 2 Prereq Biol 372 or Stat 212; graduate standing. Overview of the application of experimental design and advance statistical analysis in ecological systems.

556 Insecticides: Toxicology and Mode of Action 1 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Insecticides in terms of historical perspective, classification, synthesis, toxicity, mode of action, and metabolism.

557 Herbicides: Toxicology and Mode of Action 1 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Herbicides in terms of historical perspective, classification, synthesis, toxicity, mode of action, and metabolism.

558 Pesticide Topics 1 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Current issues concerning pesticides in terms of toxicity, mode of action, and metabolism.

562 Systems in Integrated Crop Management 3 (2-3) Graduate-level counterpart of Entom 462; additional requirements. Credit not granted for both Entom 462 and 562.

565 Integrated Biological Control 3 Prereq Entom 340 or 343. Study of importance of incorporating biological control into integrated pest management problems in agricultural and urban ecosystems.

572 Aquatic Entomology 3 (2-3) Graduate-level counterpart of Entom 472; additional requirements. Credit not granted for both Entom 472 and 572. Cooperative course taught by UI (Ent 472), open to WSU students.

583 Physiological Interactions in Predator-Prey Relationships 1 Prereq Biol 102, Rec general ecology. Intricate physiological and behavioral adaptations that have evolved in predator-prey relationships.

590 Special Topics in Entomology V 1-4 May be repeated for credit; cumulative maximum 10 hours. Graduate-level counterpart of Entom 490; additional requirements. Credit not granted for both Entom 490 and 590.

593 Seminar 1 May be repeated for credit. Prereq 20 hours biology. Reporting and discussing problems and research in entomology.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Projects, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Integrated Pest Management Courses

IPM

201 Introduction to Pest Management in a Quality Environment 2 Pest management to maximize plant protection and safeguard the quality of the environment.

399 Pest Management Internship V 1-4 Supervised individual practicum with IPM-oriented businesses, organizations, and governmental agencies; professionally related field interaction. S, F grading.

452 Pesticides and the Environment 2 Rec 12 hours Biol. Immediate and prolonged effects of pesticides on human and other animals; legal and moral repercussions of pesticide use. Credit not granted for both IPM 452 and 552.


552 Pesticides and the Environment 2 Graduate-level counterpart of IPM 452; additional requirements. Credit not granted for both IPM 452 and 552.

562 Systems of Integrated Pest Management 3 (2-3) Graduate-level counterpart of IPM 462; additional requirements. Credit not granted for both IPM 462 and 562.

Program in Environmental Science and Regional Planning

esrp.wsu.edu
Troy 305
509-335-8538

Professor and Program Chair, W. W. Budd; Professors, F. A. Ford, W. G. Hendrix; Associate Professor, E. H. Franz; Assistant Professor, R. A. Gill; Program Coordinator at WSU Tri-Cities and Associate Professor, R. G. Schreckhise; Program Coordinator at WSU Vancouver and Associate Professor, B. Tissot; Academic Coordinator for General Science at WSU Tri-Cities, E. G. Moore, Jr; Senior Research Scientist, A. L. Brooks; Professor Emeriti G. W. Himman, G. L. Young.

The program coordinates two closely related fields of study: environmental science and regional planning. Environmental science is concerned with the study of natural and modified environments and their interactions with biological (including human) systems with an emphasis on the comprehensive understanding of the environmental/ecological context, assessment of beneficial and disruptive impacts, and methodologies to analyze, interrelate, and resolve these complex systems. The regional planning curriculum provides an understanding of basic issues, methods, and processes in rural, land use, and environmental planning with comprehensive studies of natural and human systems. Students of both fields acquire the holistic and interdisciplinary perspectives and ecological understanding necessary to prepare them for a variety of roles in the study, planning, and management of resources and the environment.

All graduating students in environmental science will: 1) have a well-rounded, general science background in the physical and life sciences, with solid training in the social sciences; 2) have developed an in-depth, interdisciplinary expertise in an area of concentration within the field (these would include but not be limited to environmental assessment, hazardous waste management, ecosystem science and management, environmental planning, or systems analysis); 3) have developed an interdisciplinary cognizance of the field and practice of environmental science through the study of public policy and planning; 4) have developed effective oral and written communication skills; and 5) have developed skills in problem-solving and management.

The program offers courses of study leading to the degrees of Bachelor of Science in Environmental Science, Master of Science in Environmental Science, Master of Regional Planning, and Doctor of Philosophy (Environmental and Natural Resource Sciences). The masters and bachelors degrees in environmental science are offered at WSU Tri-Cities,
A Bachelor of Science in Environmental Science is offered at WSU Vancouver.

Because of the diversity of these fields, the course of study for each student is flexibly designed in a unique, multi-optional interdisciplinary context. Environmental science majors can specialize in agricultural ecology, biological science, human or cultural ecology, environmental education, environmental quality control, hazardous waste management, natural resource management, physical science, systems, and environmental land-use planning. Regional planning majors can specialize in a variety of areas including land-use planning, ecological planning, geographic assessment and planning, and environmental policy and planning. Environmental science majors specializing in environmental education may work toward senior high school teaching certificates with endorsements for the major and minors in physical and biological science.

The program is closely coordinated with the Environmental Research Center and other University research units. It is administratively supported by the Colleges of Agricultural, Human, and Natural Resource Sciences, Engineering and Architecture, Sciences, and Liberal Arts. The participating faculty resource list for the program includes some 65 members representing many disciplines.

**Certification Requirements**

Requirements for certification into the Bachelor of Science Program in Environmental Science:

1. completion of 30 semester hours of course work with a gpa of 2.00, and
2. completion of the courses listed in the catalog in the freshman year of the environmental science curriculum with a grade of C- or better. (Courses not required to fulfill University requirements for graduation may be waived for certification.)

**Preparation for Graduate Study**

Before applying for admission to the graduate programs, a student should have completed an undergraduate curriculum that included examination of a physical, biological, or social system in sufficient depth to serve as background for advanced investigation of one or more of these systems in an ecological context and a minimum gpa of 3.0. For graduate study in environmental science, previous course work in sociology or cultural anthropology, conservation of natural resources, biological science, chemistry or physics, calculus, and ecology is required. Students interested in assistantships should provide Graduate Record Examination scores. General requirements for the Master of Science degree in Environmental Science include 300-400-level or graduate-level courses in ecology, mathematics, statistics, or computer science; applied physical, biological, or social science; environmental impact assessment; graduate seminar; and special topics in environmental science; an option (an area of specialization) with a minimum of 10 credit hours of courses; and a thesis or special project. A minimum of 32 hours of graduate credit is required. The program has been successful in placing MS graduates in a variety of positions with federal, state, and local agencies, industries, and academia, as environmental and resource management specialists. Students entering the Master of Regional Planning (MRP) program are expected to have prior course work in economics, sociology or cultural anthropology, natural science, quantitative skills such as mathematics, and communication skills. Applicants are expected to have a minimum gpa of 3.0 in their undergraduate field and to present evidence of commitment to the field of planning. Prior work experience in planning or related fields is considered in evaluating applicants. Students are required to complete no fewer than 35 graduate credit hours, including a minimum of 9 hours of core planning courses, and 6 hours of thesis or 4 hours of project credit.

MRP candidates are expected to develop a specialization through course work in an allied discipline, but the philosophy of the program is oriented toward preparing graduates for practice in public agencies, tribal agencies, or as consultants in the private sector.

Students entering the PhD program should have a gpa of at least 3.0, 10 semester hours of basic biological and/or physical sciences, and a faculty member to act as advisor. A total of 72 hours is required beyond the bachelor's degree, 34 of which must be in graded course work.

**Schedules of Studies**

**Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.**

**ENVIRONMENTAL SCIENCE DEGREE PROGRAM (123 HOURS)**

This course of study for the bachelor's degree is organized around the requirements listed below. A sequence will be designed by each student and the major advisor to provide an individualized area of specialization. The program has identified nine optional areas of specialization: agricultural ecology, biological science, hazardous waste management, environmental education, environmental quality (air and water), natural resources management, systems, and environmental/land use planning. (Fact sheets on each option are available from the ES/RP Program Office.) Students may also, in consultation with their advisor, develop an area of specialization outside of those identified. 18 hours are required in the chosen area of specialization (normally in not more than two departments). Each major must also complete 8 hours in a modern foreign language unless he/she has completed two years of such language in high school (or one year in high school and 4 hours in the same language at WSU). The program provides a strong foundation for advanced study in many professional and basic research fields.

**First Year**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 101 [B] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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**Second Term**

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<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H, G] (GER)</td>
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<tr>
<td>Chem 106 [P] (GER)</td>
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**Second Year**

<table>
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<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Chem 345</td>
<td>4</td>
</tr>
<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Social Sciences [S, K]</td>
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<tbody>
<tr>
<td>Biol 107 [B] (GER)</td>
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<tr>
<td>Engl 402 [W] (GER)</td>
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<tr>
<td>Phys 102 [P] or 202 [P] (GER)</td>
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<tr>
<td>Stat 212 [N] (GER) or 412</td>
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**Third Year**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ES/RP 335 [M]</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 490, 492, or 493</td>
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</tr>
<tr>
<td>Geol 102 [P] or SoilS 201 [B] (GER)</td>
<td>3</td>
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<tr>
<td>MBioS 301, 302, or 303</td>
<td>4</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<th>Second Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H, G], Intercultural [I, G, K], or Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 372</td>
<td>4</td>
</tr>
<tr>
<td>ES/RP 310</td>
<td>4</td>
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<tr>
<td>Intercultural [I, G, K] (GER)</td>
<td>3</td>
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<tr>
<td>Option Course</td>
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**Fourth Year**

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<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H, G], Intercultural [I, G, K], or Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 404 [M]</td>
<td>3</td>
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<tr>
<td>Option Courses</td>
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<tr>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ES/RP 444</td>
<td>4</td>
</tr>
<tr>
<td>ES/RP 491</td>
<td>1</td>
</tr>
<tr>
<td>Option Courses</td>
<td>9</td>
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</table>

1 Math 107 or concurrent enrollment is the prerequisite for Chem 105 and Math 140/171.
2 Recommend combining the American Diversity [D] (GER) with this requirement.
3 The remaining GERs should include paired introductory and 300-400-level courses in economics, agricultural economics, and either sociology or cultural anthropology. Consult advisor.

**Minors**

An environmental science minor in environmental science requires 18 hours, including ES/RP 101, 335, 444, and elective courses to be chosen in consultation with an ES/RP advisor.
Program in Environmental Science and Regional Planning

Description of Courses

Environmental Science and Regional Planning Courses

ES/RP


174 Introduction to Meteorology and the Atmospheric Environment 3 Same as C E 174.

278 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

301 Forest and Range Plant Resources I 3 (2-3) Same as NATRS 301.

310 Modeling the Environment 4 (3-3) Construction and testing of computer simulation models of environmental systems. Cooperative course taught by WSU, open to UI students. (EnVS 210).

311 Natural Resource Economics 3 Rec Ag Ec 201 or Econ 101. Same as Ag Ec 311.

325 Economic Analysis of Environmental Policies 3 Same as Ag Ec 325.


375 Aspects of Sustainable Development 3 Same as Econ 375.

385 GIS Primer 3 (2-2) Introduction to basic concepts and applications of geographic information systems (GIS), lab exercises on PC-based GIS packages. Cooperative course taught by UI (Geog 385), open to WSU students.

402 Human Health and the Environment 3 Prereq Biol 106, 107, Chem 105, 106; ES/RP 335 or junior in environmental science and regional planning. Problem-solving approach to adverse effects on human health caused by contamination of environmental media or anthropogenic changes in ecosystems. Credit not granted for both ES/RP 402 and 502.

403 Environmental Geology 3 Same as Geol 403.


406 Introduction to Radiological Science 2 Prereq one course each in biology, calculus, chemistry, and physics. Fundamentals of atomic physics; interactions of radiation with matter; radiation dosimetry and biology, radiobiology and radiological health protection.

409 Applied Radiological Physics 3 (2-3) Prereq calculus course; Phys course; Rec ES/RP 406. Production, interactions and measurement of radiation, with application to radiological health protection concerns. Credit not granted for both ES/RP 409 and 509.

411 [M] Limnology and Aquatic Ecosystem Management 3 (2-3) Prereq Biol 102 or 120; Chem 101. Same as Natrs 411.

412 [M] Natural Resource Policy and Administration 3 (2-2) Same as NATRS 438.

414 Environmental Biophysics 2 Prereq Math 107. Same as SoilS 414.

415 Environmental Biophysics Laboratory 1 (0-3) Prereq SoilS 414 or c//. Same as SoilS 415.

416 Radiation Biology 4 (3-3) Prereq introductory radiological physics, or one course each in biology and radiological physics; Rec ES/RP 406. Effects of ionizing radiation at the molecular, cellular, organ and organism level. Credit not granted for both ES/RP 416 and 516.

418 Human Issues in International Development 3 Same as Anth 418.

419 Fundamentals of Risk Assessment 2 Prereq Biol 107, 372; Math 107; Stat 412. Overview of risk assessment processes; identification of toxicological effects; introduction to methods used to quantify potential health and environmental risks.

420 Field and Laboratory Techniques in Environmental Science 2 May be repeated for credit; cumulative maximum 6 hours. Prereq Biol 372; Chem 105. Fundamentals and hands-on experience on the use of field and laboratory techniques and instruments utilized in environmental science. Field trips required.

424 Environmental Health Assessment 2 Prereq one course each in biology, calculus, chemistry, general ecology and physics; Rec ES/RP 406. Environmental transport, fate and effects of radioactive and hazardous materials. Credit not granted for both ES/RP 424 and 524.

426 Population Analysis 1 Same as NATRS 426. Credit not granted for ES/RP 426 and 526.

429 Population Theory 1 Same as NATRS 429. Credit not granted for both ES/RP 429 and 529.

435 Resolving Environmental Conflicts 4 (3-3) Prereq junior standing, two social science courses. Same as CRS 435. Credit not granted for both ES/RP 435 and 535.


445 Hazardous Waste Management 3 Environmental, technical, and political aspects of hazardous waste management; evaluative methods, risk assessment, and current management requirements. Credit not granted for both ES/RP 445 and 545. Cooperative course taught by WSU, open to UI students. (EnVS 445)


452 Environmental Microbiology 3 Same as MBioS 452. Credit not granted for both ES/RP 452 and 552.

466 Environmental Psychology 3 Same as Psych 466.

469 Ecosystem Ecology and Global Change 3 Prereq Biol 372; Chem 106. Historic and current factors controlling the function of ecosystems and their response to natural and human-caused global change. Credit not granted for both ES/RP 469 and 569.

480 Airphotos and Geomorphology 3 Same as SoilS 474.

481 Special Problems V 1-3 May be repeated for credit. S, F grading.

490 Special Topics V 1-15 May be repeated for credit. S, F grading.

492 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

493 Special Topics V 1-15 May be repeated for credit. S, F grading.

498 Special Topics V 1-15 May be repeated for credit. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

503 Natural Resource Planning 3 (2-3) Same as NATRS 503.

504 Ecosystem Management 3 Analysis of ecosystem processes; dual emphasis on ecological principles and development of methods and concepts to evaluate policies for management.

509 Applied Radiological Physics 3 (2-3) Graduate-level counterpart of ES/RP 409; additional requirements. Credits not granted for both ES/RP 409 and 509.

510 Applied Radiation Dosimetry 3 (2-3) Pre-req ES/RP 509 or course in radiological physics. Determination of exposure and doses from external and internal sources of radiation, with applications to environmental, occupational, and medical protection.

511 Legal Process 3 Rec ES/RP 444. Legal process in general and role of the judiciary in natural resource management. Cooperative course taught jointly by WSU and UI (Law 511).

513 Environmental Epidemiology 3 Pre-req Stat 412; Rec MBioS 446; Stat 422. Environmental epidemiologic methods to investigate environmental problems and familiarity with relevant scientific literature.

514 Environmental Biophysics 2 Graduate-level counterpart of ES/RP 414; additional requirements. Credit not granted for both ES/RP 414 and 514. Cooperative course taught by WSU, open to UI students (Bot 545).

516 Radiation Biology 4 (3-3) Graduate-level counterpart of ES/RP 416; additional requirements. Credit not granted for both ES/RP 416 and 516.

517 Fate and Effects of Environmental Contaminants 3 Pre-req graduate standing. Rec biochemistry, organic chemistry. Rational perspective on the environmental behavior and biological effects of contaminants.

519 International Development and Human Resources 3 Same as Anth 519.

524 Environmental Health Assessment 2 Graduate-level counterpart of ES/RP 424; additional requirements. Credit not granted for both ES/RP 424 and 524.

526 Population Analysis 1 Same as NATRS 526. Credit not granted for ES/RP 426 and 526.

527 Environmental Chemistry 2 Same as Chem 527. Credit not granted for both ES/RP 427 and 527.

528 Environmental Management Systems 3 (2-3) Introduction to EMS standards; procedures and requirements for EMS certification; creations and auditing of an EMS.

529 Population Theory 1 Same as NATRS 529. Credit not granted for both ES/RP 429 and 529.

530 Fundamentals of Industrial Safety 2 Pre-req graduate standing or by interview only. Fundamentals for recognizing and controlling hazards and losses to protect the safety and health of workers.


532 Applied Environmental Toxicology 3 Pre-req ES/RP 531 or P/T 505. Overview of the field of environmental toxicology; interactions of xenobiotics with natural systems.

534 Industrial Ecology: Theory and Practice 3 Complex relationships and interactions among industrial activities, the environment, and society and the need for a sustainable system.

535 Resolving Environmental Conflicts 4 (3-3) Pre-req graduate standing. Two social science courses. Same as CWS 535. Graduate-level counterpart of ES/RP 435; additional requirements. Credit not granted for both ES/RP 435 and 535.

544 Environmental Assessment 4 Graduate-level counterpart of ES/RP 444; additional requirements. Credit not granted for both ES/RP 444 and 544. Cooperative course taught by WSU, open to UI students (Geog 544).

545 Hazardous Waste Management 3 Graduate-level counterpart of ES/RP 445; additional requirements. Credit not granted for both ES/RP 445 and 545. Cooperative course taught by WSU, open to UI students. (EnvS 545)

548 Environmental Law 3 By interview only. Environmental planning and protection, regulation of air and water pollution, waste disposal, use of pesticides and other toxic chemicals, and remedies for environmental injury. Cooperative course taught by UI (Law 947), open to WSU students.

549 Public Land Law 3 History of public lands, problems with ownership of land by governments, legal issues including land sales, mineral extraction, livestock grazing, timber harvest, recreation, wildlife protection, and preservation. Cooperative course taught by UI (Law 948), open to WSU students.

550 System Dynamics Models of Environmental Systems 3 Pre-req graduate standing. Analysis of environmental system dynamics; development and uses of simulation models using the Stella software on Macintosh. Cooperative course taught by WSU, open to UI students (EnvS 550).

551 Energy Production and the Environment 2 Graduate-level counterpart of ES/RP 451; additional requirements. Credit not granted for both ES/RP 451 and 551.

552 Environmental Microbiology 3 Same as MBioS 552. Credit not granted for both ES/RP 452 and 552.

555 Environmental Planning 3 State, local and federal approaches to environmental planning and their interactions in private and public land use and development decisions. Cooperative course taught jointly by WSU and U of I (EnvS 555).

556 Insecticides: Toxicology and Mode of Action 1 Same as Entom 556.

557 Herbicides: Toxicology and Mode of Action 1 Same as Entom 557.

558 Pesticide Topics 1 Same as Entom 558.

560 Watershed Management 3 Same as NATRS 560.

567 Advanced Applications in GIS 4 (1-6) GIS concepts using ARC/INFO geographic information systems.

569 Ecosystem Ecology and Global Change 3 Pre-req Biol 372; Chem 106. Historic and current factors controlling the function of ecosystems and their response to natural and human-caused global change. Credit not granted for both ES/RP 469 and 569.

571 Meteorology 3 Same as C E 571. Credit not granted for both ES/RP 471 and 571.

573 Engineering Risk Assessment for Hazardous Waste Evaluations 3 Graduate-level counterpart of ES/RP 473; additional requirements. Credit not granted for both ES/RP 473 and 573. Cooperative course taught by UI (Chem 580), open to WSU students.

575 Geographic Information Systems 3 Pre-req Geol 385. Computerized management of data organized on regional geographic bases; preparation overlay, coding, and manipulation of data for regional planners and land managers. Cooperative course taught by UI (Geog 475), open to WSU students.

584 Engineering Aspects of Aquatic Biology 4 (3-3) Same as C E 584.

585 Aquatic System Restoration 3 (2-3) Pre-req Chem 345 or C E 583; MBioS 101 or C E 581. Aquatic System Restoration 3 (2-3) Same as C E 585.

586 Introduction to Geographic Information Systems 4 (2-6) Graduate-level counterpart of ES/RP 486; additional requirements. Credit not granted for both ES/RP 486 and 586.

590 Special Topics 2 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught by WSU, open to UI students (Geog 590).

591 Special Topics 2 May be repeated for credit; cumulative maximum 4 hours.

592 Special Topics V 1-4 May be repeated for credit; cumulative maximum 4 hours.

593 Seminar in Environmental Science and Regional Planning 1 May be repeated for credit; cumulative maximum 8 hours.

594 Environmental and Natural Resources Issues and Ethics 2 or 3 Same as NATRS 594.

595 Graduate Internship V 2-5 By interview only. Practical work experience in appropriate agencies; for graduate career students. § F grading.
596 Cooperative Education Internship V 2-5
By interview only. Practical experience in appropriate agencies; for career graduate students in environmental science and regional planning. May be repeated for credit; cumulative maximum 5 hours. S, F grading.

600 Special Projects or Independent Study
Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination
Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination
Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination
Variable credit. S, F grading.

Department of Fine Arts

finearts.wsu.edu
FA Center 5072
509-335-8866

Professor and Department Chair, C. Ivory; Professors, A. Christenson, R. Helm, C. Watts; Assistant Professors, M. Forysth, K. Haas, M. Kinkel, S. Stengel-Goetz.

The Fine Arts Department offers a diversity of experiences in the visual arts. The department offers courses in a variety of fields of study leading to the degrees of Bachelor of Fine Arts, Bachelor of Fine Arts and Master of Fine Arts. The Bachelor of Arts and Bachelor of Fine Arts programs are designed to open doors into the world of visual expression and intellectual development. In particular, we encourage students to sample a variety of art disciplines and make an informed choice about their direction in art. The department includes some seven areas of emphasis within which to develop a program: drawing, painting, sculpture, printmaking, ceramics, photography, and digital media. These are supported by a strong art history component. Many career possibilities involving art exist in the world outside the University. The reality of having a degree in fine arts versus what you can do with it is an issue of great concern to the faculty and is positively addressed within our program.

Students interested in preparing for secondary and primary art teaching may pursue a Bachelor of Arts or Bachelor of Fine Arts degree for their subject-matter preparation. The Department of Teaching and Learning does not offer a certification program in art education.

Certification Process
Prospective applicants for certification are responsible for acquainting themselves with all requirements and procedures. Details including specific course requirements and portfolio submission are available in the departmental office.

Bachelor of Fine Arts certification requirements (students should prepare for BFA certification during fall semester of the junior year):
1) 9 hours from F A 102, 103, 110, 111, 320, 350;
2) 3 hours from F A 201 or 202;
3) 6 additional hours in major emphasis;
4) 2.0 cumulative GPA in F A courses;
5) Slide portfolio and exhibit presentation of original art work.

Bachelor of Arts in Fine Arts certification requirements:
1) 9 hours from F A 102, 103, 110, 111, 320, 350;
2) 3 hours from F A 201 or 202;
3) 2.0 cumulative GPA in F A courses.

Transfer Credits
The Department of Fine Arts will accept up to 18 credit hours in art toward the major and 9 credit hours in art toward the minor.

Exchange Program
The Department of Fine Arts has a tuition-free exchange for four students with the School of Fine Arts at Nihon University, Tokyo, Japan. All art majors at WSU are eligible for this one-year study in Japan. Selection is made in the winter. Other opportunities for undergraduate study abroad in Europe, Australia, and the far east are available from the Office of International Students and Scholars.

Graduate Study
The Fine Arts Department offers an interdisciplinary master’s program for those wishing to pursue a career in studio art. Students may focus in, but are not limited to, ceramics, drawing, digital media, painting, photography, printmaking, and sculpture. Emphasis is placed on personal and conceptual artistic development in light of contemporary art practices.

The M.F.A degree requires 52-60 credit hours and serves as the entry credential to college-level teaching and/or work as a practicing artist in the fine and applied arts. Graduates meet with faculty for one-on-one studio discussions. At the end of the first year students have an exhibition in the departmental gallery and the second year program culminates in a thesis exhibition held in the Museum of Art. A final oral examination is also required.

Schedules of Studies
Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

BACHELOR OF ARTS IN FINE ARTS DEGREE PROGRAM (120 HOURS)

First Year
First Term
Biological Sciences [B] (GER) 4
Engl 101 [W] (GER) 3
F A 102 3
F A 110 3
GenEd 110 [A] (GER) 3

Second Term
Arts & Humanities [H,G] (GER) 3
Communications Proficiency [C,W] (GER) 3
F A 103 3

F A 111 3
GenEd 111 [A] (GER) 3

Second Year
First Term
Hours
F A 201 3
F A 320 3
Intercultural [I,G,K] (GER) 3
Physical Sciences [P] (GER) 4
Elective 3

Second Term
Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
F A 202 3
F A 350 3
Math Proficiency [N] (GER) 3
Elective 3

Third Year
First Term
Hours
F A 303 3
F A 340 or 351 3
Science Elective (GER) 4
Social Sciences [S,K] (GER) 3
Elective 3
Complete Writing Portfolio
Second Term
Hours
300-400-level F A Elective 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
F A 304 3
Elective 3

Fourth Year
First Term
Hours
300-400-level Electives 6
300-400-level F A Elective 3
F A [M] 3
Tier III Course [T] (GER) 3
Second Term
Hours
300-400-level Electives 6
300-400-level F A Elective 3
F A [M] 3

BACHELOR OF FINE ARTS (BFA) DEGREE PROGRAM (121 HOURS)

For the degree Bachelor of Fine Arts a total of at least 70 hours in fine arts are required; 46 of these must be in 300-400-level courses.

First Year
First Term
Hours
Biological Sciences [B] (GER) 4
Engl 101 [W] (GER) 3
F A 102 3
F A 110 3
GenEd 110 [A] (GER) 3
Second Term
Hours
Arts & Humanities [H,G] (GER) 3
Communications Proficiency [C,W] (GER) 3
F A 103 3
F A 111 3
GenEd 111 [A] (GER) 3
Second Year

First Term

- 300-level F A Elective 3
- F A 201 3
- F A 320 3
- Intercultural [I,G,K] (GER) 3
- Physical Sciences [P] (GER) 4

Second Term

- 300-level F A Elective 3
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- F A 202 3
- F A 350 3
- Math Proficiency [N] (GER) 3

Third Year

First Term

- 300-400-level F A Elective 3
- F A 303 3
- F A 312 3
- Science Elective (GER) 4
- Social Sciences [S,K] (GER) 3
- Complete Writing Portfolio

Second Term

- 300-400-level F A Electives 6
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- F A 304 3

Fourth Year

First Term

- 300-400-level F A Electives 6
- F A [M] 3
- F A 498 2
- Tier III Course [T] (GER) 3

Second Term

- 300-400-level F A Electives 6
- F A [M] 3
- F A 493 2
- Elective 3

Minors

Art

A minor in art requires 18 hours including F A 102 or F A 103; F A 110; and one course from F A 201 or 202. The remaining 9 hours of electives must be in 300-400-level courses.

Art History

A minor in art history requires 18 hours including F A 201 and 202. The remaining 12 hours of electives must be in 300-400-level art history courses.

Description of Courses

Fine Arts Courses

F A 101 [H] Introduction to Art 3 For nonmajors. Appreciation of various visual art forms; emphasis on contemporary period.

102 Art I 3 (0-6) Introduction to studio practice and composition of form in two-dimensional space.

103 Art II 3 (0-6) Introduction to studio practice and composition of form in three-dimensional space.

110 Drawing 3 (0-6) Composition in pictorial space, visualization of ideas, drawing from life.

111 Figure Drawing 3 (0-6) Prereq F A 102, 103, 110. Introduction to drawing the human figure.

201 [H] World Art History I 3 Historical survey of art and architecture from prehistory through 1450.

202 [H] World Art History II 3 Historical survey of art and architecture from 1450 to the present.

210 Topics—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

301 [G] Arts of Native North America 3 Prereq GenEd 110, 111. Diversity of visual forms, traditional and contemporary, within changing historical and cultural contexts.

302 [G,M] Arts of Asia 3 Prereq GenEd 110, 111. Art and architecture of India, China and Japan within their historical, religious and cultural contexts.

303 [H] Modern Art—19th Century 3 Prereq F A 201, 202. Modern art in the early modern period from around the globe.


306 Topics—Study Abroad 3

308 [H,M] Women Artists I 3 Middle Ages through the 18th century.


311 Topics—Study Abroad 3

312 Advanced Drawing 3 (0-6) May be repeated for credit. Prereq F A 110 or 111. Advanced projects using drawing media and process.

313 Advanced Figure Drawing 3 (0-6) Prereq F A 111. Continuation of F A 111. Problems and ideas pertaining to drawing the human figure. May be repeated for credit.

314 Topics—Study Abroad 3

315 Topics—Study Abroad 3

318 Topics—Study Abroad 3

319 Topics—Study Abroad 3

320 Beginning Painting 3 (0-6) F A 102, 103, 110. Introduction to problems in painting; development of composition and color.

321 Intermediate Painting 3 (0-6) Prereq F A 320. Problems and ideas in painting. May be repeated for credit; cumulative maximum 9 hours.

331 Art and Its Relationship to New Technologies 3 Prereq F A 201, 202. Introduction to visual communication through technology; historical overview and cultural implications of photography, film, video, and digital media.

332 Introduction to Digital Media 3 (0-6) Prereq F A 102, 103, 110, 331. Introduction to the principles and processes of print and interactive media; emphasis on fundamentals of image and text manipulation.

337 Experimental Animation 3 (2-2) Same as Engl 337.

340 Ceramics 3 (0-6) Prereq F A 102, 103, 110. Handbuilding processes; the potter's wheel; glazing; firing.

341 Intermediate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 340.

350 Sculpture 3 (0-6) Prereq F A 103, 110. Composition of form in the three-dimensional space.

351 Intermediate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 350.

361 Special Topics—Drawing V 1-6 May be repeated for credit.

362 Special Topics—Painting V 1-6 May be repeated for credit.

363 Special Topics—Electronic Imaging V 1-6 May be repeated for credit.

364 Special Topics—Ceramics V 1-6 May be repeated for credit.

365 Special Topics—Sculpture V 1-6 May be repeated for credit.

366 Special Topics—Printmaking V 1-6 May be repeated for credit.

367 Special Topics—Black and White Photography V 1-6 May be repeated for credit.

368 Special Topics—Color Photography V 1-6 May be repeated for credit.

369 Illustration and Rendering Techniques 3 (0-6) Prereq AMT 208; 220. Same as AMT 369.

370 Introduction to Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 102, 110. Introduction to the fundamentals of printmaking, incorporating drawing, painting and collage. Fall semester, lithography and monotype; Spring semester, screenprinting.

380 History of Photography 3 Historical survey of photography from its invention to the present; conceptual, cultural, and technical implications of the medium.

381 Beginning Photography 3 (0-6) Prereq F A 102, 103, 380. Camera and black/white film used in conjunction with studio and darkroom techniques; composition and aesthetic concepts introduced.

382 Intermediate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 381. Expansion of conceptual building in black/white darkroom and camera techniques; research and portfolio.

385 Color Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Introduction to conventional chemical-based color photography techniques.
Department of Fine Arts

390 Elementary School Art Education 2 (1-2) Theory and methods for the study and making of art including practice using art media for creative expression.

400 Special Topics V 1-6 May be repeated for credit; cumulative maximum 18 hours.

401 Special Topics—Art History V 1-6 May be repeated for credit. Prereq F A 201, 202.

403 [M] Modern Theories of Art 3 May be repeated for credit; cumulative maximum 6 hours. Selected topics in 19th and 20th century theories of art.

404 [M] Advanced Non-western Art History 3 May be repeated for credit; cumulative maximum 6 hours. Prereq F A 321, 322. Different topics related to the arts in Africa the Americas, Oceania, and Asia.

405 [M] Contemporary Art: Theory and Practice 3 Contemporary theories of art and how those theories are developed.

423 Advanced Painting 3 (0-6) or 6 (0-12) Prereq F A 321, major in fine arts. Continuation of F A 321. Advanced problems in painting. May be repeated for credit. Six credits only with permission of instructor.

433 Print Based Media 3 (0-6) May be repeated for credit. Prereq F A 331, 332. Principles and processes of visual communication in digital print; may include typography, image/text relationships, layout design and book arts.

434 Time Based Media 3 (0-6) Prereq F A 331, 332. Exportation of narrative, time, non-linear and interactive complexity in digital media; may include web-based art, animation, digital video and sound. May be repeated for credit; cumulative maximum 6 hours.

442 Advanced Ceramics 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 341.

452 Advanced Sculpture 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 351.

471 Digital and Photo Processes for Printmaking 3 (0-6) Prereq F A 110. Survey of digital and photo processes for printmaking. May be repeated for credit.

483 Advanced Photography 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 382, major in F A. Advanced black/white darkroom and studio; research of historic and contemporary trends; discussion of personal direction; portfolio.

490 Gallery Procedures with Museum of Art 3 (0-6) or 6 (0-12) May be repeated credit; cumulative maximum 9 hours. By interview only. Introduction to art museums and galleries, including practicum in exhibition preparation, installation, art handling, collections.

491 Seminar: Advanced Study, Art on Location 3 Travel to art collections in major urban centers; individual student research into how art functions within a major art center.

493 Senior Exhibit 2 Prereq certified BFA major. Independent study involving exhibit, written thesis and oral examination working with area coordinator. S, F grading.

495 Digital Media Internship V 3-12 Prereq F A 433, 434; major in fine arts. Experience in work-related digital media environments for practical application and experience. S, F grading. May be repeated for credit; cumulative maximum 12 hours.


499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 Graduate Art History 2 May be repeated for credit; cumulative maximum 6 hours. Prereq 9 hours undergraduate art history.

510 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

511 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

512 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

520 Graduate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

521 Graduate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

522 Graduate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

530 Graduate Digital Imaging 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

531 Graduate Digital Media 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

532 Graduate Digital Media 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

540 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

541 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

542 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

550 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

551 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

552 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

570 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

571 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

572 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

580 Graduate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

581 Graduate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

582 Graduate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

598 Graduate Seminar 2 Topics in contemporary issues, theory, and criticism. May be repeated for credit; cumulative maximum 6 hours.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

Department of Food Science and Human Nutrition

fshn.wsu.edu
Fshn 106
509-335-4763

Professor and Interim Department Chair, R. Wright; Professors, K. Beerme, S. Bathke, B. Chew, R. Doaghtery, C. Edwards, L. Massey, A. McCand, B. Raso, J. Shultz, T. Shultz, S. Spaw, B. Swanson; Associate Professors, S. Clark, S. McGuire, J. Povery; Assistant Professors, M. Edlefsen, J. Harbertson, D. Kang, C. Ross; Instructors, L. Beha, C. Helmick, D. Swanson, S. Schuenemann.

The Department of Food Science and Human Nutrition (Fshn) offers courses of study in two undergraduate major fields, food science and human nutrition and foods, with different options and areas of interest available in each. Students enrolled in these options or areas of interest complete prescribed courses of study leading to the Bachelor of Science in Food Science and Human Nutrition. Further information may be found at fshn.wsu.edu.

Food Science

Food science students learn how to convert food commodities into high quality food products that are safe and nutritious. As part of the BS degree, students receive training and learn skills relative to the production, processing, preservation, safety, evaluation, and distribution of foods. The food processing industry is continually challenged to evaluate existing foods for quality, as well as the development of new foods to better meet consumer demands and the nutritional needs of the world. The many facets of food science create a wide variety of career opportunities in industry, government, and education. Food science graduates from Washington State University have traditionally received multiple offers of employment, many in the Pacific Northwest, at salaries that are higher than those of other professionals at equivalent levels of training and experience. Students can gain practical processing and leadership skills in the state-of-the-art creamery where world-renowned Cougar Gold Cheese is made.

The undergraduate food science curriculum closely follows the recommendation of the national professional organization, the Institute of
Food Technologists, and provides the student with a working knowledge of food science and food technology. In the first two years of college, students enroll in science courses and complete most General Education Requirements. The majority of this part of the curriculum can be completed at most community colleges prior to transferring into the food science program. In the junior and senior years, the curriculum emphasizes courses in food processing, food chemistry, food microbiology, and other specialized areas such as the processing and manufacture of cereal, dairy, fruit, vegetable, meat, and poultry products. Students with specific interest and career goals can gain additional education and training in those areas by taking elective courses in their areas of interest, participating in internships with food companies, and/or conducting a special problems project with a faculty member.

Our graduating seniors will (in addition to a strong undergraduate general education): 1) have well-developed food science skills within the context of a strong science background; 2) be able to apply the scientific method to food science issues or problems; 3) to be able to organize and articulate (oral and written) information related to food science; 4) have practical skills specific to the food science field; and 5) have well-developed leadership and teamwork skills.

**Human Nutrition and Foods**

The General Dietetics Program (GDP) is the core curriculum for students seeking to become a registered dietitian (RD) and is the first step toward obtaining dietetic training to prepare for work related to food and nutrition. The GDP is a four-year program offered on the Pullman campus that provides the didactic preparation required by the American Dietetic Association (ADA). Completion of this degree results in a Bachelor of Science degree in Food Science and Human Nutrition. After graduation, students are eligible to apply to supervised practice programs in the United States. Post-baccalaureate supervised practice experience through a dietetic internship or coordinated program is a necessary step to take the Registration Examination for Dietitians to become a registered dietitian and for ADA membership.

To be admitted to the GDP, students must be admitted to Washington State University, and declare their major in human nutrition and foods (HNF). To complete the GDP, students must satisfy the minimum graduation requirements for WSU and the departmental requirements. After graduating from the GDP, students may apply to dietetic internships, enter graduate school, or take a position in a variety of areas in food and nutrition. Those completing the GDP, an internship, and passing the National Registration Examination for Dietetics are qualified for a variety of positions, including as members of a management team and/or healthcare team in hospitals, schools, colleges, and University food service; and in community settings, government, and private agencies.

The Coordinated Program in Dietetics (CPD) is a dynamic program committed to educating qualified entry-level dietitians. The CPD provides academic instruction and 960 hours of supervised practice experience to meet the 900 hours required by the American Dietetics Association.

The two-semester CPD program provides “real world” experiences in various aspects of dietetics including community nutrition programs, clinical dietetics, and food service management. The supervised practical experiences are located in the Tacoma/Olympia area.

In the CPD program, students complete the academic requirements for a bachelor of science degree, receive a Verification Statement, and are eligible to take the National Registration Examination to become a Registered Dietitian without the requirement of an additional internship. Students may also apply if they have completed a bachelor's degree from an accredited/approved didactic program in dietetics and have received a Verification Statement from their DPD director. Upon completion of the CPD they will also receive a Verification Statement and be eligible to take the National Registration Examination.

The Coordinated Program in Dietetics is accredited by the Commission on Accreditation of Dietetics Education (CADE) of the American Dietetic Association, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312-899-0040 ext. 5400.

Students graduating from either the Dietetics Program or the Coordinated Program in Dietetics will have the requisite knowledge, skills, and experience to successfully obtain a position in a supervised practice program or internship, complete the program, and pass the National Registration Examination to become a registered dietitian. We expect our graduating students will: 1) demonstrate the ability to communicate effectively in public and interpersonal situations using a variety of methods (written, oral, etc.); 2) have a strong foundation knowledge of physical and biological sciences; 3) demonstrate the ability to interpret research results and basic statistics; 4) have knowledge of diverse food-related issues and demonstrate skill in food preparation and production for individual and group dietary needs; 5) display knowledge and skills in assessing and treating nutrition-related health risks and problems; 6) demonstrate effective management techniques and skills; 7) display personal and professional attitudes and values, ethical practice, and leadership skills; and 8) demonstrate skills in collaborations, teamwork, problem-solving, and critical thinking.

The Nutritional Sciences option is designed for students wishing to prepare for careers in medicine, dentistry, and veterinary practice or to gain admittance to graduate school in a field related to nutrition. The curriculum of the Nutritional Sciences student draws upon a variety of nutrition-related disciplines, including human nutrition, biology, physiology, and chemistry. With the exception of the General Education Requirements and a set of core courses, the course requirements for the Nutritional Sciences option are largely unspecified, allowing students to pursue topic areas of interest to them.

Students in this program of study are encouraged to complete a diverse set of advanced courses relating to the nutritional sciences affording a broad perspective on current knowledge of nutrient requirements and function and how this knowledge can be put to use. Faculty advisors work with individual students to develop a curriculum that fits the students’ particular interests. Students choosing the Nutritional Sciences option as a path towards professional school are highly encouraged to work closely with the Washington State University Pre-Health Advising Program.

Students graduating from the Nutritional Science option will (in addition to a strong undergraduate general education): 1) demonstrate the ability to communicate effectively in public and interpersonal situations using a variety of methods (written, oral, etc.); 2) have a strong foundation knowledge of physical and biological sciences; 3) demonstrate the ability to interpret research results and basic statistics; 4) have knowledge of diverse food-related issues and demonstrate skills practical to the nutritional science field; 5) display personal and professional attitudes and values, ethical practice, and leadership skills; and 6) demonstrate skills in collaborations, teamwork, problem-solving, and critical thinking.

**Other Opportunities**

The FSHN department offers minors in food science, nutrition and foods, and food service management. FSHN also offers courses of study leading to the degrees of Master of Science in Food Science, Master of Science in Human Nutrition (thesis and non-thesis option), Doctor of Philosophy (Food Science) and Doctor of Philosophy (Nutrition).

**Transfer Students**

Students planning to transfer to the department should coordinate their programs of study with departmental advisers to select courses, in the proper sequence, which are applicable to the degree requirements.

**Preparation for Graduate Study**

Students who plan to work toward an advanced degree should seek advice from their advisors in the selection of courses. This will ensure the courses selected will strengthen their education in areas needed for successfully completing an advanced degree program.

Students from related fields who wish to obtain an advanced degree in food science or nutrition are encouraged to apply as they may be well prepared for graduate studies. They would be required to take certain key courses required of undergraduates in addition to those needed for their graduate program.

Students who identify an interest in graduate work early in their studies are encouraged to contact the advisor no later than the end of the junior year so a course of study can be planned which schedules appropriate prerequisites to graduate courses and an introduction to research projects.

**Schedules of Studies**

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

**FOOD SCIENCE AND HUMAN NUTRITION—FOOD SCIENCE OPTION**

(120 HOURS)

This degree program has been developed for the student who is interested in the science of food processing. Emphasis is placed on the scientific aspects...
of processing and it offers more laboratory analysis experience.

**First Year**

**First Term**
- Chem 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 140 [N] or 171 [N] (GER) 4

**Second Term**
- Biol 106 [B] (GER) 4
- Chem 106 [P] (GER) 3
- ComSt 102 [C] (GER) 3
- FSHN 170 or Elective 2
- GenEd 111 [A] (GER) 3

**Second Year**

**First Term**
- A S 314 or FSHN 233 3
- Ag Ec 201 [S] (GER) 3
- Chem 345 4
- Food Production Course 3
- Phys 101 [P] (GER) 4

**Second Term**
- Arts & Humanities [H,G] (GER) 3
- FSHN 200 or 220 3
- MBioS 302 3
- MBioS 303 4

**Third Year**

**First Term**
- Ag Ec 350 or 360 3
- FSHN 303 3
- FSHN 416 3
- FSHN 417 4
- FSHN Commodity Course or Elective 3
- Stat 212 [N] (GER) 4

**Second Term**
- Complete Writing Portfolio 3
- Arts & Humanities [H,G] or Social Sciences [S,K] GER 3
- FSHN 422, 450, or 470 3
- FSHN 433 1
- FSHN 434 1
- FSHN Commodity Course or Elective 2
- Intercultural Studies [L,G,K] GER 3

**Fourth Year**

**First Term**
- Engl 402 [W] (GER) or Elective 3
- FSHN 402 1
- FSHN 460 3
- FSHN 461 [M] 1
- FSHN Commodity Course 3
- Tier III Course [T] (GER) 3

**Second Term**
- FSHN 422, 450, or 489 3
- FSHN 462 4
- FSHN Elective 3
- Elective 4

1. Math 171 and 172 are required of those students who will be competing for scholarships offered by the Institute of Food Technologists.
2. Food Production courses include (but are not limited to): A S 101, CropS 101, 201, Hort 201, 311, 320, 321.

**FOOD SCIENCE AND HUMAN NUTRITION—GENERAL & COORDINATED DIETETICS OPTION**

(121 HOURS)

- The General Dietetic Program and Coordinated Program in Dietetics share the same core curriculum. This core curriculum includes four years of coursework to be completed on the Pullman campus. Students must demonstrate that they have completed, or have a plan to complete, all department-required courses in the core curriculum before entering the two-semester (fifth-year) CPD supervised practice experience.

**First Year**

**First Term**
- Chem 101 [P] or 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- FSHN 120 3
- FSHN 121 1
- GenEd 110 [A] or 111 [A] (GER) 3
- Math Proficiency [N] (GER) (if necessary) 4

**Second Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Chem 102 [P] or 106 [P] (GER) 4
- FSHN 201 1
- GenEd 110 [A] or 111 [A] (GER) 3
- Psych 105 [S] (GER) 3
- Elective 2

**Second Year**

**First Term**
- Acctg 230 3
- Biol 251 4
- Chem 345 4
- Communication Proficiency [C,W] (GER) 3
- FSHN 233 3

**Second Term**
- Biol 315 4
- FSHN 331 3
- Intercultural Studies [L,G,K] 3
- MBioS 101 [B] (GER) 4

**Third Year**

**First Term**
- Arts & Humanities [H,G] (GER) 3
- FSHN 330 [M] 3
- FSHN 380 3
- Stat 205 [N] or Stat 212 [N] (GER) 3

**Second Term**
- Complete Writing Portfolio 3
- FSHN 438 2

**Fourth Year**

**First Term**
- FSHN 350 3
- FSHN 410 2
- FSHN 420 2
- FSHN 436 4
- Elective 3

**Second Term**
- FSHN 426 [M] 3
- FSHN 430 3
- FSHN 435 3
- FSHN 437 1
- FSHN 480 3
- Hist 492 [T] (GER) 3

**Fifth Year**

**First Term**
- FSHN 475 2
- FSHN 476 3
- FSHN 477 (supervised practice) 10

**Second Term**
- FSHN 439 2
- FSHN 480 3
- FSHN 478 (supervised practice) 10

1. To prepare for Stat 212 in junior year.
2. H D 205 is recommended.
3. For suggested electives, see FSHN Student Handbook and/or advisor.

**FOOD SCIENCE AND HUMAN NUTRITION—NUTRITIONAL SCIENCE**

(120 HOURS)

The Nutritional Science program has been developed for students interested in a career in medicine, dentistry, and veterinary practice or to gain admittance to the graduate school in a field related to nutrition.

**First Year**

**First Term**
- Biol 106 [B] (GER) 4
- Chem 101 [P] (GER) 4
- Communication Proficiency [C,W] (GER) 3
- GenEd 110 [A] (GER) 3

**Second Term**
- Biol 107 [B] (GER) 4
- Chem 102 [P] (GER) 4
- FSHN 233 3
- GenEd 111 [A] (GER) 3
- Elective 3

**Second Year**

**First Term**
- Biol 315 4
- Chem 345 4
- Communication Proficiency [C,W] 3
- Social Sciences [S,K] 3

**Second Term**
- Biol 251 4
- Intercultural Studies [L,G,K] 3
- MBioS 302 4
- Elective 3
- Food Prep/Food Science Requirement 3-4
Third Year

First Term  Hours  
Arts & Humanities [H,G] (GER)  3  
FSHN 330 [M]  3  
Upper Level FSHN Nutrition Course  2-4  
Math [N] (GER)  3-4  
Elective  3  

Second Term  Hours  
FSHN 331  3  
MBio 303  4  
Upper Level FSHN Nutrition Course  2-4  
Elective  3  
Tier III [T] (GER)  3  

Fourth Year

First Term  Hours  
Upper Level FSHN Nutrition Course  2-4  
Upper Level Physiologic Science Courses  6-8  
Elective  6  

Second Term  Hours  
FSHN 430  3  
Upper Level Physiologic Science Course  3-4  
Elective  3  
Arts and Humanities [H,G] or Social Sciences [S,K] (GER)  3  

Additional Notes:

Students must make sure that they have taken courses to fulfill the [D] GER requirement. Students must take an additional [M] course to fulfill this GER requirement, such as Anth 405, FSHN 426, or Neuro 405. A minimum of 120 hours must be taken to fulfill University requirements to graduate. A minimum of 40 hours of upper-division (300-400) level classes must be taken. A writing portfolio must be completed prior to graduation.

Minors

Food Science
19 semester hours, half of which must be in 300-400-level courses. FSHN 303, 416, 417, 460, and 461 are required; other courses must be taken from the food science area. A “C” or higher is required in all courses taken for the minor and no courses may be taken as pass/fail.

Food Service Management
20 semester hours, half of which must be in 300-400-level courses. FSHN 120, 130, 380, 420, 480, and HBM 358. The overall gpa of the minor must be at least 2.0 and no courses may be taken pass/fail.

Nutrition and Foods
18 or 19 semester hours, half of which must be in 300-400-level course and must include FSHN 120/121*, 130 or 233, 330, 331; and 6 additional credits from any of the following courses: FSHN 305, 350, 420, 426, 430, or 436. Students should check prerequisites before registering for courses.

*FSHN 121 is only open to majors certified in the Family and Consumer Sciences option in Human Development or certified majors in the College of Education.

Description of Courses

Food Science and Human Nutrition Courses

FSHN

120 Food Preparation 3 3 Principles of food preparation, including physical and chemical changes, quality, composition and use of foods.

121 Food Preparation Lab 1 (0-3) Hands-on lab preparation/experiments to understand the principles and methods of food preparation.

130 [B] Nutrition for Living 3 Information related to the interaction of nutrients in the body and factors that govern nutrient requirements.

170 Food for People 2 Interrelationships between people and their food supply; broad coverage of contemporary food-related topics.

200 Food Quality Assurance 3 (2-2) Methodology and design of quality assurance programs for analyzing microbial and chemical hazards and physical factors associated with food quality.

201 Professional Dietetics 1 Structure, function and history of the American Dietetic Association, and educational requirements and roles of registered dietitian.

220 Food Safety and Quality 3 Regulation, safety and quality of food products, including microbiological, chemical, and sensory properties of food. Cooperative course taught by UI (FST 220), open to WSU students.

233 Human Nutrition 3 Rec biology or chemistry course; or Biol 251 or 315. Applying principles of chemistry, biology, and physiology to the study of nutrition emphasizing nutrient functions, nutrient requirements and impact of diet on health and disease.

303 [M] Food Processing 3 (2-3) Prereq MBioS 101 or 301; organic chemistry. Specialized techniques and concepts of food processing and marketing. Field trip required. Cooperative course taught by UI (FST 303), open to UI students.

304 Cereal Products 2 Prereq organic chemistry. Technical principles relating to the production and commercial processing of legume and cereal foods. Field trip required. Cooperative course taught by UI (FST 304), open to WSU students.

305 Nutrition Related to Fitness and Sport 3 Prereq FSHN 130 or 233. Same as Ath T 305.

330 [M] Physiological Nutrition 3 Prereq Biol 251, 315; Chem 345; FSHN 130 or 233. Functional chemistry of nutrients in physiological systems and nutrient interactions.

331 Nutrition in the Human Life Cycle 3 Rec FSHN 130 or 233. How growth and development impacts nutrient requirements throughout the life cycle. Cooperative course taught jointly by WSU and UI (FCS 486).

350 Nutritional Counseling and Assessment 3 (2-3) Rec FSHN 331. Fundamental knowledge and skills in nutritional counseling, including theory and strategies of behavior change and principles of nutritional and dietary assessment.

370 Food Laws and Quality 3 Food laws, industry standards and qualities of foods necessary for consumer acceptance; sanitation.

380 Management in Food Service Systems I 4 (3-3) Prereq FSHN 120, 121, 331; HBM 358. Food service purchasing, safety and sanitation, kitchen layout and design, equipment selection, food production, delivery systems, and inventory.

401 Topics in Food Science and Human Nutrition V 1-3 May be repeated for credit; cumulative maximum 6 hours. Selected topics in food science and human nutrition. Credit not granted for both FSHN 401 and 501.

405 Eating Disorders 2 Examination of anorexia nervosa, bulimia nervosa, compulsive eating, obesity, and weight preoccupation; discussion of cultural and nutritional factors, family issues, and psychological consequences, as well as preventive and therapeutic interventions. Cooperative course taught by UI (FCS 405), open to WSU students.

406 Evaluation of Dairy Products I 1 Identifying defects in dairy products and relating these defects to their probable cause; remedies. Cooperative course taught by WSU, open to UI students (FST 406). Credit not granted for both FSHN 406 and 506.


408 Seminar in Food Science 1 Prereq Junior/ senior standing in Food Science or permission of instructor. Critical analysis of contemporary topics in food science. Organization and communication of scientific information. Cooperative course taught jointly by WSU and UI (FST 408). S, F grading.

410 Advanced Practice Skills in Dietetics 1 Prereq junior standing in food science and human nutrition. Analysis of dietetics supervised practice experience; development of application process; participation in community affairs; public policy and research in dietetics.

411 Global Nutrition 2 History of food and hunger and the global nature of our food systems. Cooperative course taught by UI (FCS 411), open to WSU students.

416 Food Microbiology 2 Prereq introductory microbiology. Purpose for enumeration, detection and identification of microorganisms in food products; physical, chemical and environmental factors influencing growth and survival of foodborne microorganisms; pathogens and spoilage microorganisms in food and their control. Cooperative course taught by UI (FST and MMB 416), open to WSU students.
417 Food Microbiology Laboratory 2 (0-6) Prereq c// in FSHN 416. Lab for FSHN 416. Cooperative course taught by UI (FST and MMBB 417), open to WSU students.

420 Food Laws, Policies, and Product Development 4 (3-3) Prereq FSHN 120, Rec Chem 345. Food laws, policies, industry standards, and quality of food for consumer acceptance; use of chemical and physical principles in food preparation to develop and explore new food products.

422 Sensory Evaluation of Food and Wine 4 (3-3) Prereq Stat 212 and age 21 or older. Theory, principles and application of sensory evaluation techniques in appearance, aroma, flavor and texture of foods and wine. Credit not granted for both FSHN 422 and 522. Cooperative course taught by WSU, open to UI students (FST 422/522).

426 [M] Community Nutrition 3 Prereq FSHN 330, 331; Rec FSHN 436. Needs assessment, planning, and evaluation in community nutrition programs. Cooperative course taught jointly by WSU and UI (FCS 473).

427 Nutritional Assessment 1 (0-3) Rec FSHN 233, senior standing. Basic skills and concepts for determining nutritional status of ambulatory adults using dietary intakes, dietary standards, anthropometric and biochemical measures.

429 Dairy Products 4 (3-3) Prereq MBioS 101 or 301; organic chemistry; biochemistry. Dairy chemistry, microbiology, sanitation, product development and processing from cow to consumer. Credit not granted for both FSHN 429 and 529. Cooperative course taught by WSU, open to UI students (FST 429).

430 Human Nutrition, Intermediary Metabolism 3 Prereq Biol 251, FSHN 330, MBioS 303. Biochemical roles of nutrients and processes of intermediary metabolism affecting people’s need for food; integration of biochemical pathways of major and minor nutrients; important nutritional diseases and controversies.

433 [M] Agricultural Processing 3 Rec Math 140 or 202; Phys 101. Same as AgTM 433.

434 Agricultural Processing Lab 1 (0-3) Rec AgTM 433 or c//. Same as AgTM 434.

435 Medical Nutrition Therapy 3 Prereq FSHN 350, 430 or c//. Nutrition principles applied to pathological conditions in people.

436 Nutrition Education 4 (3-2) Prereq FSHN 130 or 233. Guidelines and skills necessary for developing, planning, implementing, and evaluating nutrition education programs and materials.

437 Medical Nutrition Therapy Laboratory 1 (0-3) Prereq c// in FSHN 435. Nutritional care planning; modified diets; nutritional assessment and dietary analysis in clinical care settings.

438 Readings in Foods and Nutrition 2 Reports, discussions and reviews of recent scientific literature and developments in foods and food systems management. Credit not granted for both FSHN 438 and 538.

439 Current Topics in Nutrition 2 Prereq FSHN 430. Analysis of scientific, popular and legislative articles pertaining to topics of current interest in nutrition. Credit not granted for both FSHN 439 and 539.

440 Advanced Medical Nutrition Therapy 3 By interview only. Advanced nutrition principles applied to pathological conditions in humans and principles of participation in delivery of nutritional care.

444 [T] Applied Nutrition in Health Science 3 Prereq biology, chemistry, sociology/psychology; completion of one Tier I and three Tier II courses. Application of current nutrition topics to community and clinical settings, integrating social science principles for individuals and groups.

460 Food Chemistry 3 Prereq organic chemistry; Rec MBioS 303. Fundamentals of food chemistry; composition of foods and the changes that occur during processing. Cooperative course taught by WSU, open to UI students (FST 460).

461 [M] Food Chemistry Laboratory 1 (0-3) Rec FSHN 460 or c//. Experiments related to the properties, reactions, and interactions of chemical components of foods. Cooperative course taught by WSU, open to UI students (FST 461).

462 Food Analysis 4 (2-6) Prereq microbiology, organic chemistry. Introductory food analysis; methods common to many food commodities. Cooperative course taught by WSU, open to UI students (FST 462).

464 Food Toxicology 3 Prereq permission of instructor. General principles of toxicologic evaluation of chemicals which enter the food chain; toxicology of food additives, colors, preservatives, drugs, pesticides and natural toxins in foods and risk characterization. Credit not granted for both FSHN 464 and 564. Cooperative course taught by UI (FST 464), open to WSU students.

465 Wine Microbiology and Processing 3 Prereq MBioS 302, 303. Technical principles related to the processing and fermentation of wines with an emphasis on microbiology. Credit not granted for both FSHN 465 and 565. Cooperative course taught by WSU, open to UI students (FST 465).

470 Advanced Food Technology 3 Prereq FSHN 416, 433 or c//. Physical principles of food preservation and recent advances in food technology. Credit not granted for both FSHN 470 and 570. Cooperative course taught by WSU, open to UI students (FST 470).

475 Current Topics in Foods Systems Management 2 Prereq by interview only. Analysis of scientific and popular, legislative and regulatory articles pertaining to topics of current interest in food systems.

476 Advanced Food Systems Management 3 (2-3) Prereq by interview only. Advanced principles of food systems related to food service management, community nutrition resources and public health nutrition; includes clinical conferencing related to FSHN 477.

477 Supervised Practice in Dietetics I 10 (0-30) Prereq FSHN 475, 476 or c//; by interview only. Supervised practical experience for seniors in CPD program.

478 Supervised Practice in Dietetics II 10 (0-30) Prereq by interview only. Supervised practical experience for seniors in CPD program.

480 Management in Food Service Systems II 3 Prereq Accct 230, FSHN 120, 380, HBM 358. Management theories, human resources, financial planning, marketing, and quality control in food service systems.

485 Clinical Experience in Food Service Systems 2 (1-3) By interview only. Experience in food systems management in clinical settings.

489 Food Product Development 3 Prereq FSHN 303, 416, 460; senior standing. Application of food chemistry, food processing/engineering and microbiology; knowledge to formulate a new food product. Cooperative course taught by UI (FST 489), open to WSU students.

495 Internship in Food Science and Human Nutrition 2 May be repeated for credit; cumulative maximum 4 hours. Prereq sophomore standing. Students work full time in industrial assignments with prior approval of advisor and industrial supervisor. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 Topics in Food Science 1 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught jointly by WSU and UI (FST 504).

501 Topics in Food Science and Human Nutrition V 1-3 May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of FSHN 401; additional requirements. Credit not granted for both FSHN 401 and 501.

502 Topics in Food Science 1 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught jointly by WSU and UI (FST 504).

503 Topics in Food Science 1 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught jointly by WSU and UI (FST 504).

504 Advanced Human Nutrition 4 Prereq graduate standing. Scientific basis of human nutrient requirements, dietary allowances and assessment techniques. Cooperative course taught by WSU, open to UI students (FCS 514).

505 Eating Disorders 2 Prereq by permission only. Web-based class that examines anorexia nervosa, bulimia nervosa, compulsive eating, obesity, and weight preoccupation; cultural and nutritional factors, family issues, and psychological consequences; preventative and therapeutic interventions. Cooperative course taught by UI (FCS 504), open to WSU students.
506 Evaluation of Dairy Products I 1 Graduate-level counterpart of FSHN 406; additional requirements. Cooperative course taught by WSU, open to UI students (FST 506). Credit not granted for both FSHN 406 and 506.

507 Evaluation of Dairy Products II 1 (0-3) Graduate-level counterpart of FSHN 407; additional requirements. Credit not granted for both FSHN 407 and 507. Cooperative course taught by WSU, open to UI students (FST 507).

508 Seminar Written 2 May be repeated for credit. Planning, writing, reporting, reviewing and evaluating current food-related research.

509 Seminar Oral 1 May be repeated for credit. Development of skills and communication tools and techniques for oral presentations of current food science and human nutrition research.

510 Advanced Food Chemistry 3 Rec biochemistry, food chemistry. Chemical, physical, and technological properties of water, vitamins, pigments, synthetic colors, minerals, miscellaneous food additives, and natural toxicants. Cooperative course taught by WSU, open to UI students (FST 510).

511 Food Carbohydrates, and Lipids 3 Rec biochemistry, food chemistry. Occurrence, structure, chemical and physical properties; functions of carbohydrates and lipids in foods. Cooperative course taught by WSU, open to UI students (FST 512).

512 Food Proteins and Enzymes 2 Prereq biochemistry, food chemistry. Chemistry/ biochemistry of proteins/enzymes applied to food research and industry; protein functionality/enzyme technology application to food industry. Cooperative course taught by WSU, open to UI students (FST 513).

513 Mineral and Vitamin Metabolism 4 Prereq A S 406 or 408; MBioS 303. Same as A S 513.

520 Research Methods in Human Nutrition 3 Research Methods in Human Nutrition 3 Prereq FSHN 130 or 233; Rec FSHN 426 or 436; statistics course. The application of human theories and quantitative methods of data collection to human nutrition research. Cooperative course taught by WSU, open to UI students (FCS 520).

521 Research Techniques in Nutrition 3 (1-6) Rec 6 hours 300-400-level nutrition. Methods of conducting field, applied and metabolic studies in human nutrition.

522 Sensory Evaluation of Food and Wine 4 (3-3) Prereq Stat 212 Graduate-level counterpart of FSHN 422; additional requirements. Credit not granted for both FSHN 422 and 522. Cooperative course taught by WSU, open to UI students (FST 522).

526 Advanced Community Nutrition 3 Prereq 300-400-level nutrition course. Components of community nutrition programs-needs assessment, planning, intervention, evaluation; application of concepts to case studies. Cooperative course taught by WSU, open to UI students (FCS 526).

529 Dairy Products 4 (3-3) Graduate-level counterpart of FSHN 429; additional requirements. Credit not granted for both FSHN 429 and 529. Cooperative course taught by WSU, open to UI students (FST 529).

530 Prenatal, Infant and Child Nutrition 2 Prereq graduate standing. Nutrition of the mother and fetus during pregnancy and of the child from infancy through childhood.

531 Nutrition and Aging 2 Rec 300-400-level nutrition course; by interview only. Assessment, evaluation, and treatment of nutritional problems of the aged.

533 Pathophysiology of Human Nutrition 3 Prereq FSHN 435. Protein, fat, carbohydrate and other nutrient pathophysiology in the development and treatment of major human diseases.

538 Readings in Foods and Nutrition 2 Graduate-level counterpart of FSHN 438; additional requirements. Credit not granted for both FSHN 438 and 538.

540 Advanced Clinical Practice 3 (0-9) Prereq FSHN 435, 437; permission of instructor. Application of diet therapy principles to development of nutrition interventions and care plans in a clinical practice setting.

561 Sports Nutrition 3 Prereq by interview only. Macronutrient and selected micronutrient utilization during exercise and restoration after feeding, dietary surveys of athletes, dietary ergogenic aids and discussion of the origins of dietary recommendations for athletes. Cooperative course taught by UI (FCS 561), open to WSU students.

564 Food Toxicology 3 Graduate-level counterpart of FSHN 464; additional requirements. Credit not granted for both FSHN 464 and 564. Cooperative course taught by UI (FST 564), open to WSU students.

565 Wine Microbiology and Processing 3 Graduate-level counterpart of FSHN 465; additional requirements. Credit not granted for both FSHN 465 and 565. Cooperative course taught by WSU, open to UI students (FST 565).

570 Advanced Food Technology 3 Graduate-level counterpart of FSHN 470; additional requirements. Credit not granted for both FSHN 470 and 570. Cooperative course taught by WSU, open to UI students (FST 570).

575 Supervised Practice V 2-18 May be repeated for credit; cumulative maximum 18 hours. By interview only. Professional supervised experience in administrative, clinical, and community dietetics; meets American Dietetic Association requirements for registration eligibility. S, F grading.

582 Food Process Engineering Design 3 Same as BSysE 582.

583 Advances in Cereal Science and Technology 2 Prereq FSHN 460. Chemistry and functionality of cereal grains as related to their processing and product quality. Cooperative course taught by WSU, open to UI students (FST 583).

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Nutrition Courses

500 Seminar in Nutrition 1 May be repeated for credit; cumulative maximum 5 hours. Seminar on current research issues in nutrition.

507 Advanced Nutrition Metabolism 3 Prereq A S 406 or 408; 504, MBioS 303. Same as A S 507.

508 Seminar-Written 2 Same as FSHN 508.

513 Mineral and Vitamin Metabolism 4 Prereq A S 406 or 408; MBioS 303. Same as A S 513.

520 Research Methods in Human Nutrition 3 Prereq FSHN 130 or 233; Rec FSHN 426 or 436; statistics course. Same as FSHN 520.

521 Research Techniques in Nutrition 3 (1-6) Same as FSHN 521.

526 Advanced Community Nutrition 3 Same as FSHN 526.

531 Nutrition and Aging 2 Same as FSHN 531.

533 Pathophysiology of Human Nutrition 3 Same as FSHN 533.

600 Special Projects or Independent Study Variable credit. S, F grading.

800 Doctoral Research, Dissertation and/or Examination Variable credit. S, F grading.

Department of Foreign Languages and Cultures

www.forlang.wsu.edu/
Thompson 110
509-335-4135

Professor and Department Chair, E. Gonzalez; Professor, E. Hartman; Associate Professors, Z. Dong, J. Grenier-Winthor, R. Halverson, B. Ingemanson, F. Manzo-Robledo, A. M. Rodriguez-Vivaldi; Assistant Professors, B. Hyner, C. Lupke, V. Navarro-Danielis, D. Pulido; Director, Language and Learning Resource Center, D. Winther

Students graduating in any of the languages or area studies in the Department of Foreign Languages and Cultures would be expected: 1) to have a fairly advanced degree of competency in their foreign language of choice, depending on the intensity of the student's chosen level of concentration and their possible experience with study abroad; 2) to be better equipped, with expanded capabilities, for pursuing their careers in today's increasingly global society; 3) to have an intellectual development that prepares students to comprehend and function in the world.
of the present, but also prepares them for whatever the future may hold; 4) to have stimulated intellectual curiosity and critical thinking skills; 5) to have an appreciation of humanitarian endeavors within the overall context of understanding international cultural diversity; and 6) to have a better understanding of some of the ethnic minorities in the U.S.

Students who wish to pursue an international career should (1) select a major or minor in a foreign language, (2) select a second major in another professional field, (3) choose courses in the second professional field that focus on international issues, (4) choose GER courses that focus on international studies, and (5) spend a semester or more in a study abroad program, ideally a program that offers an internship in the student's professional field.

Recognizing the need for students to reinforce, in a practical way, knowledge gained in the classroom, the department sponsors a wide variety of supplementary activities. The Maison Française is a living group where only French is spoken and where conversational activities are supervised by a resident native speaker. McCroskey International House promotes cultural awareness and understanding built on personal contact and the exchange of ideas and opinions between people of diverse nations, races, and religions. A new Chinese House on campus promotes the study of Chinese languages and culture. Visiting lecturers, language tables, foreign film showings, and other cultural events supplement the classroom experience.

The department offers courses of study leading to the degrees of Bachelor of Arts in Foreign Languages and Cultures (French, German, Russian Area Studies, and Spanish) and Master of Arts in Foreign Languages and Cultures (Spanish). Language minors are available in Chinese, French, German, Russian, Spanish, and film studies. Language/cultural minors are also possible in French area studies, German area studies, Latin American area studies, and Russian area studies.

Teacher Training Program
Students preparing to teach should consult the catalog listing of the Department of Teaching and Learning for certification requirements and for teaching majors and minors. Those who intend to major in foreign languages and education should begin the study of the major language in the first year and of the minor language, if any, not later than the beginning of the second year. Students are also required to take For L 440 and 441.

Preparation for Graduate Study
Students who contemplate graduate work in the Department of Foreign Languages and Cultures should present an undergraduate degree similar to those described in the schedule of studies. Complete details on graduate programs are available from the graduate studies advisor and on the departmental Web site.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

FRENCH, GERMAN, SPANISH REQUIREMENTS (120 HOURS)

A minimum of 34 hours beyond the 203 level (or the equivalent level in competence) in the major language is required for a Bachelor of Arts degree in Foreign Languages and Cultures. 101, 102, and 203 do not count toward the major. Students who place into 102 and receive a B or better qualify for an additional 4 departmental advanced placement credits; students placing into 203 or above and receiving a B or better qualify for 8 departmental advanced placement credits. A maximum of 8 departmental AP credits is possible. See department for details.

Majors must complete either a minor in a second foreign language, a concentration of at least 16 credits in a related field, or a second major.

No course in which a C- or lower grade is earned will be counted toward the major or minor. 300-400-level courses taken pass/fail may not be included for credit toward the major. No course may be repeated for credit toward the major. No course may count for both the major and the minor.

Majors and prospective majors are strongly encouraged to spend at least one semester abroad, living in the target culture and enhancing their fluency. Many accredited study abroad programs are available; students should work with their advisers in the selection of a program.

Of the 34 hours required for the major, a minimum of 15 must be taken in residence with 6 of these hours at the 300-400 level. A maximum of 12 credits per semester or 18 credits per year earned in a study abroad program may be applied toward the major. Credits for 105, 205, 305 may not be applied toward the major or minor.

First Year

First Term

Engl 101 [W] (GER) (if necessary) 3
For L 101, 110, 120, or 130 3
Fren, Ger, Span 101 (if necessary), or higher (102, 203, or 204) 4
GenEd 110 [A] (GER) 3
Elective 3
Second Term

Biological Science (Lab course) [B] (GER) 4
Fren, Ger, Span 102 (if necessary), or higher (203 or 204) 4
Fren, Ger, Span 105 1
Fren, Ger, Span 110, 111, 120, 121, 130, or 131 3
GenEd 111 [A] (GER) 3

Second Year

First Term

Fren, Ger, Span 203 (if necessary), or higher (204) 4
Fren, Ger, Span 205 1
Math 103 (if necessary) 3
Physical Science [P] (GER) 4
Social Sciences [S, K] (GER) 3
Second Term

Arts & Humanities [H, G] (GER) 3
Communication Proficiency [C, W] (GER) 3
Fren, Ger, Span 204 3
Fren, Ger, Span 205 3
Math Proficiency (210 rec) [N] (GER) 3

Third Year

First Term

Fren, Ger, Span 306 3
Fren, Ger, Span 307 3
Fren, Ger, Span 310, 311, 320, 321, 350, 351, or 361 3
Intercultural Studies [G, I, K] (GER) 3
Elective (For L 440 if teaching major) 3
Complete Writing Portfolio

Second Term

Arts & Humanities [H, G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER) 3
Fren, Ger, Span 305 1
Fren, Ger, Span 308 3
Fren, Ger, Span 310, 311, 320, 321, 350, 351, or 361 3
Science Elective [B], [P], or [Q] (GER) 4

Fourth Year

First Term

Arts & Humanities [H, G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER) 3
Fren, Ger, Span 407 3
Fren, Ger, Span 450, 451 or 452 [M] 3
Electives (For L 441 if teaching major) 6

Second Term

Arts & Humanities [H, G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER) 3
Fren, Ger, Span 305 1
Fren, Ger, Span 408 [M] 3
Fren, Ger, Span 450, 451, or 452 [M] 3
Tier III Course [T] (GER) 3
Elective 1

1 Electives must be represented by a competence in a second foreign language up to and including 204; an approved University minor or a teaching minor; or a second major in another field.

RUSSIAN AREA STUDIES REQUIREMENTS (120 HOURS)

First Year

First Term

Engl 101 [W] (GER) 3
For L 101, 110, 120 or 130 3
GenEd 110 [A] (GER) 3
Rus 101 or higher (102,203,204) 4
Elective 3
Second Term

Biological [B] Sciences (GER) 4
GenEd 111 [A] (GER) 3
Rus 102 or higher (203,204) 4
Rus 120, 121, 130 or 131 3

Second Year

First Term

Math 103 (if necessary) 3
Physical [P] Sciences (GER) 4
Rus 203 or higher (204) 4
Social Sciences [S,K] (GER) 3
Second Term

Arts & Humanities [H, G] (GER) 3
Communication Proficiency [C, W] (GER) 3
Math Proficiency [N] (GER) 3
Rus 120, 121, 130 or 131 3
Rus 204 or 307 3

176
### Third Year

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<th>Term</th>
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<td>Electives (For L 440 if teaching major)</td>
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<td>Complete Writing Portfolio</td>
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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Rus 305</td>
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### Fourth Year

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<td>Rus 305</td>
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<td>Electives (For L 441 if teaching major)¹</td>
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<td>Rus 361</td>
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<td>Elective²</td>
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¹The language summer course at Far Eastern State University Vladivostock (6 credits) is another possibility.
²Electives must be represented by a competence in a second foreign language up to and including 204; an approved University minor or a teaching minor; or a second major in another field.

### Minors

**Chinese, French, German, Russian, or Spanish**

To fulfill requirements for a minor in Chinese, French, German, Russian, or Spanish, a student must complete a minimum of 16 hours of course work in one language area. A minimum of 9 of these 16 credits must be completed in residence at WSU. In addition, 9 hours must be in courses other than 101-204, of which 6 must be at the 300-400-level in the target language, and at least 3 of the target language hours must be taken at WSU. No course in which a C- or below has been earned will be counted. 300-400-level courses taken pass, fail may not be included for credit toward the minor. No course may be repeated for credit toward the minor. No course may count for both the major and the minor. 105, 205, and 305 may not count toward the minor.

### Film Studies

A minimum of 18 credits is required. 9 credits must be chosen from Engl 150, For L 110, Phil 201, Soc 372, or Theat 150. An additional 9 credits are chosen from the following:

- People and Cultural Perspective: CES 338, 379, Chin 111, For L 410, Fren 110, 310, Ger 110, 310, Rus 410, Span 110, 111, 310, 311, W St 340.

### Description of Courses

#### Chinese Courses

**Chin**

101 **First Semester** 4 (3-2) Fundamentals of speaking, listening, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 101).

102 **Second Semester** 4 (3-2) Prereq Chin 101 with a grade of C or better. Continuation of Chin 101. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 102).

105 **Elementary Conversation 1** Elementary-level conversation practice in small groups with a native/near-native speaker; not open to native speakers except with permission. May be repeated for credit; cumulative maximum 4 hours.

111 **G** Asian Film 3 Taught in English. Asian film from a cultural perspective. Cooperative course jointly taught by WSU and UI (Chin 111).

121 **G** Modern Chinese Culture 3 An introduction to the culture of modern China, including Hong Kong and Taiwan. All readings in English. Cooperative course taught by WSU, open to UI students.

131 **G** Masterpieces of Asian Literature in Translation 3 Taught in English. Introduction to Asian literature. Cooperative course taught by WSU open to UI students (Chin 320).

160 **Chinese Calligraphy** 1-6 May be repeated for credit; cumulative maximum 6 hours.

203 **Third Semester** 4 (3-2) Prereq Chin 102 with a grade of C or better. Further development of speaking, listening, reading, and writing skills. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 201).

204 **Fourth Semester** 4 (3-2) Prereq Chin 203 with a grade of C or better. Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 201).

205 **Intermediate Conversation 1** 1 Prereq Chin 102 or equiv. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission. May be repeated for credit; cumulative maximum 4 hours.

280 **Special Topics: Study Abroad** V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.
305 Intermediate Conversation V 1-2 Prereq Chin 204. Conversation practice in small groups. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 305). May be repeated for credit; cumulative maximum 2 hours. S, F grading.

306 Intermediate Reading and Translation 3 Prereq Chin 204. English-Chinese expressions, development of skills to increase reading speed and fluency. Cooperative course taught by WSU; open to UI students (Chin 306).

307 Intermediate Chinese 3 Prereq Chin 204. Early advanced training in speaking, reading and writing on abstract topics in Chinese; continued development of listening comprehension skills. Taught in Chinese.

308 Intermediate Grammar and Writing 3 Prereq Chin 204. Writing practice in the language and active review of grammar. Not open to native speakers except with permission. Cooperative course taught by WSU; open to UI students (Chin 308).

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

480 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

Classics Courses

Clas

101 Introduction to Latin for Beginners 3 From early Latin to the Middle Ages. Cooperative course taught by UI (Latn 366), open to WSU students.

366 Survey of Latin Literature II 3 From early Latin to the Middle Ages. Cooperative course taught by UI (Latn 366), open to WSU students.

369 Latin Language Lab 1 Prereq permission. Advanced-level expressive skills. Cooperative course taught by UI (Latn 369), open to WSU students. May be repeated for credit; cumulative maximum 2 hours. S, F grading.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

404 Special Topics 1 Cooperative course taught by UI (Latn 404), open to WSU students. May be repeated for credit; cumulative maximum 3 hours.

441 Intermediate Greek I 4 Readings in classical Greek prose and poetry. Cooperative course taught by UI (Latn 441), open to WSU students.

442 Intermediate Greek II 4 Readings in classical Greek prose and poetry. Cooperative course taught by UI (Latn 442), open to WSU students.

461 Latin Literature of the Augustan Age 3 Cooperative course taught by UI (Latn 461), open to WSU students.

462 Latin Literature of the Augustan Age 3 Cooperative course taught by UI (Latn 462), open to WSU students.

463 Latin Literature of the Republic 3 Cooperative course taught by UI (Latn 463), open to WSU students.

464 Latin Literature of the Republic 3 Cooperative course taught by UI (Latn 464), open to WSU students.

465 Latin Literature of the Silver Age 3 Cooperative course taught by UI (FL/Latn 465), open to WSU students.

466 Latin Literature of the Silver Age 3 Cooperative course taught by UI (FL/Latn 466), open to WSU students.

480 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

Foreign Languages and Cultures Courses

For L

100 Studies in Foreign Languages I V 1-4 Languages, topics, or foreign language skills not covered by other 100-level courses. May be repeated for credit; cumulative maximum 8 credits.

101 [G] Introduction to the World of Languages 3 Taught in English. Explore the nature, history, evolution, acquisition, and use of language with examples from major foreign language groups.

102 [H] Humanities in the Ancient World 3 Same as Hum 101.

110 [H] Introduction to Foreign Film 3 Taught in English. An introduction to the study of international film; stories, cultures, and cinematic features.

120 [G] Introduction to Foreign Cultures 3 Taught in English. An introduction to both verbal and non-verbal intercultural communication.

130 [H] Introduction to Foreign Literature 3 Taught in English. An introduction to the study of international literature; stories, cultures, and literary devices.

280 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

200 Studies in Foreign Languages II V 1-4 Prereq For L 100. Languages, topics, or foreign language skills not covered by other 200-level courses. Cooperative course taught jointly by WSU and UI (FL 204). May be repeated for credit; cumulative maximum 8 credits.

210 Foreign Film and Lecture Series 1 (0-2) An introduction to foreign films through universal themes and their varied cinematic portrayal.


221 Pre-Study/Internship Abroad Orientation 1 Taught in English. Orientation and practical information for students preparing to study or intern abroad. S, F grading.

280 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

300 Studies in Foreign Languages V 1-4 May be repeated for credit. Languages not currently a part of the curriculum may be offered on demand. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (FL 300).

302 [H,M] Humanities in the Middle Ages and Renaissance 3 Same as Hum 302.

303 [H,M] Reason, Romanticism, and Revolution 3 Same as Hum 303.

304 [H] Humanities in the Modern World 3 Same as Hum 304.

350 [S] Speech, Thought, and Culture 3 Same as Anth 350.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

400 Special Topics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq GenEd 110 or 111. Interdisciplinary study of foreign languages, literature, or culture.

410 [T] Issues in Foreign Film and Literature 3 Prereq completion of one Tier I and three Tier II courses. Taught in English. Comparison of film adaptations to give students an understanding of how cultures respond to contemporary conditions.

440 Methods of Teaching Foreign Languages 3 Prereq two years foreign language. Survey of current methodology with emphasis on practical application in the classroom. Credit not granted for both For L 440 and 540.
441 Research and Methods of Technology Enhanced Foreign Language Learning
3 Prereq For L 440. Taught in English. The use of technology in the foreign language classroom; hands-on experience with equipment and multi-media materials. Credit not granted for both For L 441 and 541.

450 Descriptive Linguistics I
3 Same as Anth 450.

474 Secondary School Foreign Language
102 Second Semester
[Fren]
499 Special Problems
Special Topics: Study Abroad

480 Special Topics: Study Abroad
V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

495 Cooperative Education Internship
V 2-6 May be repeated for credit; cumulative maximum 6 hours. Off-campus cooperative education internship with business, industry, or government unit. S, F grading.

499 Special Problems
V 1-4 May be repeated for credit. S, F grading.

540 Research and Methods of Teaching Foreign Languages
3 Graduate level counterpart of For L 440; additional requirements. Credit not granted for both For L 440 and 540.

541 Professional Assessment
3 Prereq graduate standing; admission to PCP. Focus on knowledge and skills in educational research.

542 Research and Methods in Teaching Foreign Culture Courses
3 Prereq graduate standing. Survey of current theory on teaching foreign culture courses with emphasis on practical application and design of activities.

560 Seminar in Scholarly Methodology
2 Bibliography and formal aspects of scholarly writing; general introduction to literary criticism.

600 Special Projects or Independent Study
Variable credit. S, F grading.

French Courses

Fren

101 First Semester
4 (3-2) Fundamentals of speaking, listening, reading, and writing. Not open to native speakers except with permission. Credit not granted for Fren 101/102, and 104.

102 Second Semester
4 (3-2) Prereq Fren 101 with a grade of C or better. Continued development of basic skills in speaking, listening, reading, and writing. Not open to native speakers except with permission. Credit not granted for Fren 101/102, and 104.

104 Intensive French: Foundations of Language and Culture

105 Elementary Conversation
1 May be repeated for credit; cumulative maximum 2 hours. Elementary-level conversation practice in small groups with a native/near-native speaker; not open to native speakers except with permission. S, F grading.

110 [H] French/ Francophone Film
3 Taught in English. Introduction to French and Francophone films.

111 [G] Francophone Film in English
3 Taught in English. Introduction to films from the French-speaking world.

120 [H] French Culture
3 Taught in English. Cultural history of France from beginnings to present; comparison of French and American cultures. May be repeated for credit; cumulative maximum 6 hours.

121 [I] Francophone Culture
3 Taught in English. Study of relationship between France and its former colonies from a global perspective; complements Fren 120.

130 [H] Masterpieces of French/ Francophone Literature in Translation
3 Taught in English. Survey of masterpieces of French and Francophone literature from all periods and genres.

180 Special Topics: Study Abroad
V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

203 Third Semester
4 (3-2) Prereq Fren 102 with a grade of C or better. Grammar review and further development of speaking, listening, reading, and writing skills. Not open to native speakers except with permission.

204 Fourth Semester
4 (3-2) Prereq Fren 203 with a grade of C or better. Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission.

205 Intermediate Conversation I
1 Prereq Fren 102. May be repeated for credit; cumulative maximum 2 hours. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission. S, F grading.

280 Special Topics: Study Abroad
V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

305 Intermediate Conversation II
1-2 May be repeated for credit; cumulative maximum 2 hours. Prereq Fren 204. Conversation practice in small groups with native/near-native speakers. Not open to native speakers except with permission. S, F grading.

306 Intermediate Reading and Translation
3 Prereq Fren 204. Vocabulary building, contrastive English-French expressions, development of skills to increase reading speed and fluency.

307 Intermediate Speaking and Listening
3 Prereq Fren 204. Systematic development of speaking and listening proficiency; emphasis on pronunciation and phonetics. Not open to native speakers except with permission.

308 Intermediate Grammar and Writing
3 Prereq Fren 204. Writing practice in the language and active review of grammar. Not open to native speakers except with permission.

310 [H] French Film
3 Prereq Fren 204. Study of important French films. Taught in French.

311 [G] Francophone Film

320 French/ Francophone Culture
3 Prereq Fren 204. Introduction to French and Francophone culture. Taught in French.

350 [H] Introduction to French Literature

351 [G] Introduction to Francophone Literature
3 Prereq Fren 306. Selected readings and analyses of contemporary French-speaking authors (African, Canadian, Caribbean). Taught in French.

361 French for the Professions
3 Prereq Fren 204. Communication in French for professional purposes; telephone and meeting role-plays, letter- and resume-writing, discussions of current events in the Francophone world.

380 Special Topics: Study Abroad
V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

407 Advanced Speaking and Listening
3 Prereq Fren 307. Systematic development of speaking and listening proficiency at the advanced level.

408 [M] Advanced Grammar and Writing
3 Prereq Fren 308. Development of advanced proficiency in writing.

430 [T] Topics in French/ Francophone Literature in Translation
3 Prereq completion of one Tier I course and three Tier II literature or humanities courses. Taught in English. In-depth reading and discussion of a select group of French literary works of a particular theme, genre, or author.

450 [M] Seminar in French Studies—Themes
3 Prereq Fren 306 or higher. Seminar on important themes in French studies. Taught in French.

451 [M] Seminar in French Studies—Authors
3 Prereq Fren 306 or higher. Seminar on important authors in French studies. Taught in French.

452 [M] Seminar in French Studies—Genres
3 Prereq Fren 306. Seminar on important genres in French studies. Taught in French.
Department of Foreign Languages and Cultures

480 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

German Courses

Ger

101 First Semester 4 (3-2) Fundamentals of speaking, listening, reading, and writing. Not open to native speakers except with permission.

102 Second Semester 4 (3-2) Prereq Ger 101 with a grade of C or better. Continued development of basic skills in speaking, listening, reading, and writing. Not open to native speakers except with permission.

104 Third Semester 4 (3-2) Prereq Ger 203. Communication in German for professional purposes; telephone and meeting role-plays, letter-writing, television, discussions of current events in the German-speaking world.

105 Elementary Conversation 1 May be repeated for credit; cumulative maximum 2 hours. Elementary-level conversation practice in small groups with a native/near-native speaker; not open to native speakers except with permission.

106 Intermediate Conversation I 1 Prereq Ger 204. Vocabulary building, contrastive English-German expressions, development of skills to increase reading speed and fluency.

107 Intermediate Speaking and Listening 3 Prereq Ger 204. Systematic development of speaking and listening proficiency; emphasis on pronunciation and phonetics. Not open to native speakers except with permission.

108 Intermediate Grammar and Writing 3 Prereq Ger 204. Writing practice in the language and active review of grammar. Not open to native speakers except with permission.

109 German Film 3 Prereq Ger 204. Study of important German films. Taught in German.

110 German Culture 3 Prereq Ger 204. Introduction to German culture. Taught in German. Cooperative course taught jointly by WSU and UI (Germ 305).

130 [H] Masterpieces in German Literature In Translation 3 Taught in English. Introduction to German literature.

180 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

201 First Semester 4 (3-2) Continuation of Ger 101; grammar review, further development of speaking, reading and writing skills. Not open to native speakers except with permission.

202 Second Semester 4 (3-2) Prereq Ger 101 with a grade C or better. Continued development of basic skills in speaking, listening, reading and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Ital 105). May be repeated for credit; cumulative maximum 2 hours.

203 Third Semester 4 (3-2) Prereq Ital 102. Continuation of Ital 102; grammar review, further development of speaking, reading, and writing skills. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Ital 201).

204 Fourth Semester 4 (3-2) Prereq Ital 203. Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Ital 202).

205 Intermediate Conversation 1 Prereq Ital 102. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission. S, F grading. Cooperative course taught by WSU, open to UI students (Ital 205). May be repeated for credit; cumulative maximum 2 hours.

280 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

Italian Courses

Ital

101 First Semester 4 (3-2) Fundamentals of speaking, listening, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Ital 101).

102 Second Semester 4 (3-2) Prereq Ital 101 with a grade C or better. Continued development of basic skills in speaking, listening, reading and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Ital 102).

105 Elementary Conversation 1 Elementary-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission. S, F grading.

201 First Semester 4 (3-2) Prereq Ital 102. Continuation of Ital 102; grammar review, further development of speaking, reading and writing skills. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Ital 101).

202 Second Semester 4 (3-2) Prereq Ital 201. Continuation in Ital 102; grammar review, further development of speaking, reading, and writing skills. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Ital 202).

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

Japanese Courses

Japn

101 First Semester 4 (3-2) Fundamentals of speaking, listening, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Japn 101).
102 Second Semester 4 (3-2) Prereq Japn 101 with a grade of C or better. Continued development of basic skills in speaking, listening, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Japn 102).

105 Elementary Conversation 1 Elementary-level conversation practice in small groups with a native/near-native speaker; not open to native speakers except with permission. May be repeated for credit; cumulative maximum 2 hours. S, F grading.

180 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

203 Third Semester 4 (3-2) Prereq Japn 102 with a grade of C or better. Further development of speaking, listening, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Japn 201).

204 Fourth Semester 4 (3-2) Prereq Japn 203 with a grade of C or better. Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Japn 202).

205 Intermediate Conversation I 1 May be repeated for credit; cumulative maximum 2 hours. Intermediate-level conversation practice in small groups with a native/near-native speaker; not open to native speakers except with permission. S, F grading.

280 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

306 Intermediate Speaking and Listening 3 Prereq Rus 204. Systematic development of speaking and listening proficiency. Cooperative course taught by WSU, open to UI students (Rus 307).

380 Special Topics: Study Abroad 280 Special Topics: Study Abroad

307 Intermediate Speaking and Listening 3 Prereq Rus 204. Systematic development of speaking and listening proficiency. Cooperative course taught by WSU, open to UI students (Rus 203).

380 [M] Intermediate Grammar and Writing 3 Prereq Rus 204. Writing practice in the language and active review of grammar. Not open to native speakers except with permission.

361 Russian for the Professions 3 Prereq Rus 204. Applied language skills useful in a professional or business environment.

401 [T] Russian Film 3 Prereq completion of one Tier I and three Tier II courses. Russian daily life, historical events, and values in representative samples of Russian film. Taught in English. Cooperative course taught by WSU, open to UI students (Rus 410).

412 Government and Politics of the Former Soviet Union 3 Same as Pol S 412.

430 [T] St. Petersburg 3 Prereq completion of one Tier I and three Tier II courses. Taught in English. The image and role of St. Petersburg in Russian classics in literature, art, music, and film. Cooperative course taught by WSU, open to UI students (Rus 430).

450 [M] Seminar in Russian Studies—Themes 3 Prereq Rus 306 or higher. Seminar focusing on a particular theme. Taught in Russian.

461 Medieval Russia 1147-1700 3 Same as Hist 461.

462 History of Imperial Russia 3 Same as Hist 462.

463 [M] History of the Soviet Union 3 Same as Hist 463.

465 East-Central Europe 3 Same as Hist 465.

466 [T] History of the Cold War, 1944-present 3 Same as Hist 466.

480 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

Spanish Courses

Span

101 First Semester 4 (3-2) Fundamentals of speaking, listening, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Span 101).

102 Second Semester 4 (3-2) Prereq Span 101 with a grade of C or better. Continued development of basic skills in speaking, listening, reading, and writing. Not open to native speakers except with permission.
105 Elementary Conversation 1 May be repeated for credit; cumulative maximum 2 hours. Elementary-level conversation practice in small groups with a native/near-native speaker; not open to native speakers except with permission. S, F grading.

110 [H] Peninsular Spanish Film 3 Taught in English. Introduction to Spanish film.

111 [G] Latin American Film 3 Taught in English. History of Latin American cinema from a cultural perspective.

120 [H] Peninsular Spanish Culture 3 Taught in English. Introduction to Spanish culture.

121 [G] Latin American Culture 3 Taught in English. Contemporary social, political, and cultural issues in Latin America.

130 [H] Masterpieces of Peninsular Spanish and Latin American Literature in Translation 3 Taught in English. Introduction to Spanish and Latin American literature.

180 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

203 Third Semester 4 (3-2) Prereq Span 102 with a grade of C or better. Further development of speaking, listening, reading, and writing skills. Not open to native speakers except with permission.

204 Fourth Semester 4 (3-2) Prereq Span 203 with a grade of C or better. Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission.

205 Intermediate Conversation I 1 Prereq Span 102 or equiv. May be repeated for credit; cumulative maximum 2 hours. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission. S, F grading.

206 Intermediate Conversation II 1 May be repeated for credit; cumulative maximum 2 hours. Prereq Span 204. Conversation practice in small groups with native/near native speakers. Not open to native speakers except with permission. S, F grading.

280 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

304 Advanced Speaking and Listening 3 Prereq Span 204 or 309. Systematic development of speaking and listening proficiency at the advanced level. S, F grading.

305 Intermediate Reading and Translation 3 Prereq Span 204. Vocabulary building, contrastive English-Spanish expressions, development of skills to increase reading speed and fluency.

307 Intermediate Speaking and Listening 3 Prereq Span 204. Systematic development of speaking and listening proficiency; emphasis on pronunciation and phonetics. Not open to native speakers except with permission.

308 Intermediate Grammar and Writing 3 Prereq Span 204. Writing practice in the language and active review of grammar. Not open to native speakers except with permission.

309 Spanish for Native Speakers 4 (3-2) Prereq Span 203 or intermediate level proficiency. Readings on Spanish-speaking communities; information and corrective feedback for native speakers of Spanish, grammatical emphasis in writing and speaking.

310 Peninsular Spanish Film 3 Prereq Span 204 or 309. Study of important Spanish films. Taught in Spanish. Cooperative course taught by UI (Span 391), open to WSU students.

311 Latin American Film 3 Prereq Span 204 or 309. Variable content seminar that focuses on the study of culture through films; taught in Spanish.

320 Peninsular Spanish Culture 3 Prereq Span 204 or 309. Study of the culture of Spain. Taught in Spanish.

321 Latin American Culture 3 Prereq Span 204 or 309. Study of Latin American culture. Taught in Spanish.

346 Topics in Latin/o Literature 3 Prereq CES 101. Same as CES 354.

350 Introduction to Peninsular Spanish Literature 3 Prereq Span 306. Introduction of literary analysis and the history of literature in Spain.

351 Introduction to Latin American Literature 3 Prereq Span 306. Introduction to literary analysis and the history of literature in Latin America. Taught in Spanish.

361 Spanish for the Professions 3 Prereq Span 204 or 309. Communication in Spanish for professional purposes; telephone and meeting role-plays, letter-writing, television, discussions of current events in the Spanish-speaking world.

362 Topics in Professional Language 3 Prereq Span 204 or permission of instructor. Specialized language training; may include Spanish for health professionals, law enforcement personnel, veterinarians and other areas.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

407 Advanced Speaking and Listening 3 Prereq Span 204 or 309. Systematic development of speaking and listening proficiency at the advanced level.

408 [M] Advanced Grammar and Writing 3 Prereq Span 204 or 309. Development of advanced proficiency in writing.

420 [T] Cultural Topics 3 Prereq completion of one Tier I and three Tier II courses. Variable content on Peninsular and/or Latin American cultural topics.

430 [T] Masterpieces in Spanish Literature 3 Prereq completion of one Tier I and three Tier II courses. Taught in English. Variable topic seminar on Spanish literature.


451 [M] Seminar in Spanish Studies—Authors 3 Prereq Span 306 or higher. Seminar on important authors in Spanish studies. Taught in Spanish.


480 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

544 Research and Methods of Teaching Foreign Languages 3 Prereq graduate standing. Current research and theory-based methods in foreign language pedagogy.

550 Medieval Literature 3 Prereq graduate standing or permission of instructor. Selected works. Taught in Spanish.

551 Seminar in Golden Age Literature 3 Prereq graduate standing or permission of instructor. Reading and discussion of representative works of the Spanish Golden Age. Taught in Spanish.

552 Topics in Nineteenth-Century Spanish Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing or permission of instructor. Selected works and topics. Taught in Spanish.

553 Topics in Twentieth-Century Spanish Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing or permission of instructor. Selected works and topics. Taught in Spanish.

554 Seminar in Spanish Literature and/or Culture V 1-3 May be repeated for credit.

555 Seminar in Colonial Spanish American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Seminar on conquest and colonial literature in Hispanic America.

556 Seminar in Nineteenth-Century Spanish American Literature 3 may be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Study of nineteenth-century Spanish American literature.

557 Seminar in Twentieth-Century Spanish American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Study of twentieth-century Spanish American literature and culture.

558 Seminar in Spanish American Literature and/or Culture V 1-3 May be repeated for credit.

559 Special Topics in Spanish American Literature and/or Linguistics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Special interdisciplinary topics in Hispanic studies and/or linguistics.
560 Beginning Instructional Practicum 2
Prereq graduate standing. An introduction to foreign language instruction for beginning teaching assistants.

561 Advanced Instructional Practicum 1
May be repeated for credit; cumulative maximum 4 hours. Supervised practical experience in foreign language teaching, S, F grading.

597 Graduate Internship V 1-6 Prereq graduate standing; Span 560; for L 540; minimum gpa of 3.50; one semester of language teaching experience. Supervised internship experience relating to career objectives; portfolio assignment required.

600 Special Projects or Independent Study
Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination
Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination
Variable credit. S, F grading.

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### General Education Courses

**Description of Courses**

#### General Education Courses

**GenEd**

104 Freshman Seminar 2 Introduction to college disciplinary and interdisciplinary discourse and to academic culture, including its values, procedures, and techniques. Credit not granted for more than one of GenEd 104, 105, U H 105.

105 Residential Freshman Seminar 2 Prereq residency in participating University-approved housing. Introduction to college disciplinary and interdisciplinary discourse and to academic culture, including its values, procedures, and techniques. Credit not granted for more than one of GenEd 104, 105, U H 105.

110 [A] World Civilizations I 3 Integrated study of social, political, and philosophical/religious systems in early civilizations, with an introduction to distinctive art forms.

111 [A] World Civilizations II 3 Integrated study of social, political, and philosophical/religious systems in modern civilizations, with an introduction to distinctive art forms of the major world civilizations.

200 [G] Studying World Civilizations Abroad 3 Prereq GenEd 110 or 111 or c/. Study-abroad experience for general education students to introduce them to the cultures they have studied in GenEd 110 and/or 111.

300 Accessing Information for Research 1 Effective research strategies in the disciplines, including emerging information resources, such as Internet.

302 Advanced Writing Tutorial V 1(0-3) to 2 (0-6) Prereq concurrent enrollment in a Writing in the Major course or a course that assigns writing. Assigned tutorials in the WSU Writing Lab. May be repeated for credit; cumulative maximum 5 hours. S, F grading.

### Program in General Studies

#### General Studies is for students who have varied interests that may cut across the usual departmental boundaries and who wish to play a major role in deciding on a suitable curriculum of study. The student earns a Bachelor of Arts in Humanities, Bachelor of Arts in Social Sciences, Bachelor of Science, or Bachelor of Liberal Arts degree depending upon the program selected. The degree is not identified with a special subject-matter field on the diploma.

Students who wish to enroll in General Studies should contact the appropriate coordinator listed below under the various divisions.

### Programs in the College of Sciences Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

www.sci.wsu.edu/cos/generalstudies.html

**V. Fisher, Coordinator**

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### GENERAL STUDIES—BASIC MEDICAL SCIENCES PLAN A (120 HOURS)

#### FYDA

**First Year**

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<tr>
<td>Biol 106 [B] (GER)</td>
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<tr>
<td>Chem 105 [P] (GER)¹</td>
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<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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**Second Term**

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<tr>
<td>Biol 107 [B] (GER)</td>
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<td>Chem 106 [P] (GER)</td>
<td>4</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Math 140 [N] or 171 [N] (GER)²</td>
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**Second Year**

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<td>Communication Proficiency [C,W] (GER)</td>
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<td>Chem 345</td>
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<td>MBioS 301</td>
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<td>Chem 346</td>
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1 Chem 101 may be taken prior to Chem 105
2 Math 107 may be taken the first semester as a prerequisite to other math courses and as a co-requisite to Chem 105. In addition to either Math 140 or 171 a statistics course such as Math 212, Introduction to Statistical Methods, is highly recommended, and, for some programs, required.

3 Students are encouraged to pursue a minor in other areas of more in-depth science minor.

4 An elective may be substituted for Phys 101 and 102 if it is not required for entrance to a graduate or professional program.

### GENERAL STUDIES—BASIC MEDICAL SCIENCES PLAN B (120 HOURS)

#### FYDA

**First Year**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)¹</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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**Second Term**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biol 107 [B] (GER)</td>
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</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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</tr>
<tr>
<td>Math 140 [N] or 171 [N] (GER)²</td>
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**Second Year**

<table>
<thead>
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<th>Hours</th>
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<tbody>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td>Chem 345</td>
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<tr>
<td>MBioS 301</td>
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<tr>
<td>Phys 101 [P] (GER)³</td>
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</tr>
</tbody>
</table>

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³ An elective may be substituted for Phys 101 and 102 if it is not required for entrance to a graduate or professional program.

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183
Third Year

First Term  Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Intercultural [I,G,K] (GER) 3
MBioS 303 4
Degree Program Elective 3-4
Elective\(^1\) 3

Second Term  Hours
Phil 365 [H] (GER) 3
Degree Program Elective 6-8
Elective\(^1\) 6

Fourth Year

First Term  Hours
Arts & Humanities [H,G] or Physical Sciences [P] (GER) 3
Degree Program Elective 3-4
Degree Program Elective [M] 2-4
Elective\(^1\) 6

Second Term  Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Degree Program Elective 3-4
Degree Program Elective [M] 2-4
Elective\(^1\) 3
Tier III Course [T] (GER) 3

1 Chem 101 may be taken prior to Chem 105
2 Math 107 may be taken the first semester as a prerequisite to other math courses and as a co-requisite to Chem 105. In addition to either Math 140 or 171 a statistics course such as Math 212, Introduction to Statistical Methods, is highly recommended, and, for some programs, required.
3 An elective may be substituted for Phys 101 and 102 if it is not required for entrance to a graduate or professional program.
4 Students are encouraged to pursue a minor in other areas of more in-depth science minor.

GENERAL STUDIES—BIOLOGICAL/ MATHEMATICAL/PHYSICAL SCIENCES

PLAN A AND PLAN B (120 HOURS)

Plan A—Primary/Secondary Concentration

Primary concentration: a minimum of 24 semester credits, including at least 15 300-400-level credits, must be completed in biological sciences, in mathematics, or in a single physical science with a minimum 2.00 primary concentration GPA. Students who complete one of the above primary concentrations will receive a bachelor of science degree with a primary concentration in general biological sciences (Gen B), general mathematics (Gen M) or general physical sciences (Gen P).
Secondary concentration: a minimum of 15 semester credits, including at least 6 300-400-level credits, must be completed in another academic department, program, or area published in the catalog with a minimum 2.0 minor concentration GPA.

Plan B—Three Related Areas in Biological Sciences

Plan B—Three Related Areas in Biological Sciences or Physical Sciences:

A combination of biological sciences or physical sciences courses of at least 39 credits in three or more departments or programs, 9 credits in each department or program area are required, and 21 300-400-level hours must be completed with at least a 2.0 GPA in these courses. The related areas in general biological sciences (Gen B) include biology, biochemistry, botany, genetics and cell biology, microbiology, zoology, and approved biology-based courses in agriculture. The related areas in general physical sciences (Gen P) include astronomy, chemistry, geology, physics, and approved courses in computer science and engineering. Students who complete a Plan B curriculum receive a bachelor of science degree.

Prerequisite Courses

General Biological Sciences (Gen B): One year biology, one semester introductory calculus, one year general chemistry, and one semester organic chemistry.
General Physical Sciences (Gen P): One year calculus, one year calculus-based physics, and one year general chemistry. Students who plan a major concentration in chemistry should also include quantitative and organic chemistry. Physical geology is a prerequisite for 300-400-level geology courses.

General Mathematics (Gen M): three semesters of calculus and linear algebra.

Programs in the College of Liberal Arts

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

www.libarts.wsu.edu/genstudies
Location: Murrow East 106
Phone: 509-335-8731

E. Lear, Director

The learning goals/outcomes for the General Studies programs offered by the College of Liberal Arts are primarily based on those of the General Education program. Student learning goals/outcomes can be identified as 1) reason critically; 2) conduct self-directed or independent learning projects; 3) understand the roles of normative views and values, including ethics and aesthetics; 4) communicate conclusions, interpretations, and implications clearly, concisely, and effectively, both orally and in writing; 5) acquire and assimilate knowledge in a variety of modes and contexts and recognize diverse disciplinary viewpoints and methods; 6) understand the historical development of human knowledge and cultures, including both Western and non-Western civilizations; 7) graduation of life-long learners; 8) adaptability to new situations through understanding of how information is gathered and organized and how knowledge is constructed in more than one specialty area; 9) knowledge in the main scholarly disciplines in which knowledge is organized; 10) ability to integrate knowledge from various knowledge domains; 11) preparation for advanced study and research outside the major; and 12) broad-based education in the humanities, social sciences, and sciences.

The student’s University experience in terms of assignments, course selection, classroom participation, internships, performances, community services, and service learning activities will be considered. Outcomes will be measured in terms of society and self: critical thinking and creativity; writing, listening, and speaking skills; information literacy; quantitative and symbolic reasoning skills; and depth, breadth, and application of knowledge.

For each of the tracks within Liberal Arts General Studies, a limited number of particular learning goals relate to each respective track. These learning goals specify knowledge and skill appropriate to the title of the degree. For example, the Bachelor of Liberal Arts, the BA in Social Science, and the various BA in Humanities options including classical studies, international area studies, linguistics, and religious studies.

GENERAL STUDIES—CLASSICAL STUDIES (120 HOURS)

R. S. Williams, Coordinator

The classical studies option is designed for students who wish to obtain a broad understanding of the ancient Greek and Roman foundation of modern western civilization. Greek and Latin language study is an important part of the program in order to aid comprehension of classical thought, literature, and history. This major should be of great value for students contemplating careers in medicine, law, and business or graduate work in history, archaeology, or literature. It is not suitable for those who wish to teach Latin or Greek or enter graduate school in classics unless additional language study is undertaken. The approach is interdisciplinary and flexible to allow students to pursue varied interests within a broad field. Students who major in classical studies will earn a Bachelor of Arts in Humanities degree.

First Year

First Term  Hours
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Science Elective (GER) 4

Second Term  Hours
Biological Sciences [B] (GER) 4
Clas 101 or 341 4
Communication Proficiency [C,W] (GER) 3
FA 201 [H] (GER) 3
GenEd 111 [A] (GER) 3

Second Year

First Term  Hours
Clas Language Elective\(^1\) 4
Hum 101 [H] (GER) 3
Physical Sciences [P] (GER) 4
Social Sciences [S,K] (GER) 3

Second Term  Hours
Clas Language Elective\(^1\) 4
Hist 341 [H] (GER) 3
Hum 103 [H] (GER) 3
Phil 290 [H] (GER) 3
Approved 300-400-level Elective 3

**Third Year**

**First Term**

Clas Language Elective 4
Hist 340 [H] (GER) 3
Approved 300-400-level Elective 3
300-400-level Electives 6
Complete Writing Portfolio

**Second Term**

Intercultural [L,G,K] (GER) 3
Approved 300-400-level Electives 6
300-400-level Electives 6

**Fourth Year**

**First Term**

Approved 300-400-level Electives 6
300-400-level Electives 6
Electives 3

**Second Term**

Tier III Course (GER) 3
Electives 11

---

1 Students must complete a second year (or its equivalent) of Greek or Latin language, which may be completed at the University of Idaho.

**GENERAL STUDIES—LIBERAL ARTS (120 HOURS)**  

**E. Lear, Coordinator**

This option is available to students who have interests and motivations which go beyond defined departmental boundaries. A student who chooses this option designs a major in consultation with the coordinator and two other faculty members. Students who major in liberal arts will earn the Bachelor of Liberal Arts degree.

The course of study will be outlined by the student, with the advice and assistance of the coordinator. Course work totaling 30 credit hours will be selected to provide a coherent body of knowledge culminating in a relevant thesis or senior project. The thesis/project hours are beyond the required 30. As part of the requirement for completion of the degree, the student's committee will meet to discuss and evaluate the project. All General Education Requirements of the University and the Colleges of Sciences and Liberal Arts must be met, as described in the academic regulations.

A student may certify the major with this option upon completion of 30 or more semester hours, with the approval of the coordinator. Approval will be granted to those students who demonstrate a sincere motivation to accomplish their unique course of study. Requests for the option are made in an informal interview with the coordinator. Normally, upon acceptance to the option, students should anticipate at least two semesters of course work before graduation.

**GENERAL STUDIES—LINGUISTICS (120 HOURS)**  

**L. Gordon, Coordinator**

A student majoring in linguistics may expect a broad liberal education in literature, anthropology, mathematics, and philosophy around a core of language. The student will gain a substantial familiarity with several languages and types of linguistic structure and will become conversant with the formal theories of linguistic analysis and the historical study of language. Students who major in linguistics will earn a Bachelor of Arts in Humanities degree.

The major in linguistics requires 40 credit hours, variously distributed in the following sequence, depending upon the particular emphasis which the student and advisor together select.

**First Year**

**First Term**

Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Science Elective (GER) 4

**Second Term**

Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Linguistics Elective 3

**Second Year**

**First Term**

Linguistics Elective 3
Math, Cpt 5, or Stat Elective 3

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1 Students must take 21 hours or more, including at least one historical course: Anth 350, 450, 499; Engl 256, 354, 458, 499.
2 Students must take 21-36 hours depending upon special emphasis: Cpt S 150, 405; Math 107, 171, 172, 205, 212; Stat 360.
3 Students must take 21 hours or more, including at least one historical course: Anth 350, 450, 499; Engl 256, 354, 458, 499.
4 Students must take 21-36 hours depending upon special emphasis: Cpt S 150, 405; Math 107, 171, 172, 205, 212; Stat 360.
5 Students must take 21-36 hours depending upon special emphasis: Cpt S 150, 405; Math 107, 171, 172, 205, 212; Stat 360.
6 Students must take 21-36 hours depending upon special emphasis: Cpt S 150, 405; Math 107, 171, 172, 205, 212; Stat 360.
7 Students must take 21-36 hours depending upon special emphasis: Cpt S 150, 405; Math 107, 171, 172, 205, 212; Stat 360.

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**GENERAL STUDIES—RELIGIOUS STUDIES (120 HOURS)**  

**M. W. Myers, Coordinator**

Religious Studies is a cross-disciplinary program designed for students who wish to develop an understanding of the nature of religion and its role in individual and social life. The program enables students to analyze critically and evaluate western and non-western religions without a predisposition to defend or reject the claims of any particular faith. The program offers both a major and a minor; it is preparatory for careers and future study in international affairs, arts, humanities, social sciences, and intercultural studies. Students who major in religious studies will earn a Bachelor of Arts in Humanities degree.

A student may earn a major in religious studies by completing 39 semester hours of work from among
the designated courses in the several departments involved. Of these 39 hours, 12 must consist of the core courses specified below for all majors. Further courses are specified as required or elective depending on the student's focus: western religions, non-western religions, or comparative religions. There is also a language requirement.

A student must also satisfy the General Education and College of Sciences or College of Liberal Arts graduation requirements and take at least 40 of the total 120 semester hours in 300-400-level courses. For a minor in religious studies, a student must take at least 18 semester hours of work, including the core (minus the seminar in religious studies) and three courses from the required list of comparative religion. Religious studies also makes an ideal second major.

**First Year**

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>For L Elective</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
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</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>For L Elective</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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</table>

**Second Year**

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anth 303</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>For L Elective</td>
<td>4</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
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**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>For L Elective</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Phil 207</td>
<td>3</td>
</tr>
<tr>
<td>Soc 341 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
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</tbody>
</table>

**JUNIOR & SENIOR YEAR—CHOOSE ONE OF THE OPTIONS LISTED BELOW**


Non-Western Religions: Hist 273, Phil 314, 315; six courses from: Anth 303, 330; F A 201, 202, 302; Hist 270, 275, 308, 370, 373, 374, 408, 470, 472, 473; Hum 350; Soc 341.


**GENERAL STUDIES—SOCIAL SCIENCES/HUMANITIES PLAN A (120 HOURS)**

*E. Lear, Coordinator*

This division of general studies is for students whose primary interest in the humanities or social sciences requires programs and course selections which are not possible within single academic units or established curricula. Students who wish to earn a Bachelor of Arts in Humanities or a Bachelor of Arts in Social Sciences will devise an approved, coherent program of study which fulfills an academic or career goal and includes prerequisites consistent with the 300-400-level course work. In addition, each student will satisfy the General Education Requirements and any additional requirements of the College of Liberal Arts.

**Plan A—Primary/Secondary Concentration**

Primary concentration: a minimum of 24 semester credits, including at least 15 300-400-level credits, must be completed in a single humanities or social sciences department or published program with a minimum 2.00 primary concentration GPA. The degree (Gen H or Gen S) will depend on the primary concentration.

Secondary concentration: a minimum of 15 semester credits, including at least 6 300-400-level credits, must be completed in another academic department, program, or area published in the catalog with a minimum 2.00 GPA.

For a list of approved Plan A areas, please contact the Liberal Arts General Studies office.

**First Year**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Elective</td>
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<td>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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</tr>
<tr>
<td>Tier III Course (GER)</td>
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**Second Year**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Soc 341 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
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</tbody>
</table>

**SOCIAL SCIENCES/HUMANITIES PLAN B (120 HOURS)**

*Erich Lear, Coordinator*

This division of general studies is for students whose primary interest in the humanities or social sciences requires programs and course selections which are not possible within single academic units or established curricula. Students who wish to earn a Bachelor of Arts in Humanities or a Bachelor of Arts in Social Sciences will devise an approved, coherent program of study which fulfills an academic or career goal and includes prerequisites consistent with the 300-400-level course work. In addition, each student will satisfy the General Education Requirements and any additional requirements of the College of Liberal Arts.

**Plan B—Three Related Areas in Humanities or Social Sciences**

Humanities: A combination of humanities courses totaling at least 39 hours involving three academic areas with a minimum of 9 hours in each of the three areas. At least 21 of the 39 hours must be at the 300-400 level and the GPA for the 39 hours must be a 2.00 minimum. Students declare the General Humanities major (Gen H) and receive a Bachelor of Arts in Humanities.

Social Sciences: A combination of social sciences courses totaling at least 39 hours involving three academic areas with a minimum of 9 hours in each of the three areas. At least 21 of the 39 hours must be at the 300-400 level and the GPA for the 39 hours must be a 2.00 minimum. Students declare the General Social Sciences major (Gen S) and receive a Bachelor of Arts in Social Sciences.

For a list of approved Plan B areas, please contact the Liberal Arts General Studies office.

1 Students must take a total of 40 hours of upper-division (300-400 level). The areas require 21 upper-division hours. The GER requires 3 upper-division hours. The remaining 16 hours may be taken in the electives, the GERs or by electing to take more than the minimum required in the areas.

2 Among the 300-400 level course work in the areas, two courses, each at 3 hours, must have a [M] designation.
First Year

First Term
Arts & Humanities [H,G] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Elective 3

Second Term
Biological Sciences [B] (GER) 4
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Social Sciences [S,K] (GER) 3
Elective 3

Second Year

First Term
Area 1 3
Area 2 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Physical Sciences [P] (GER) 4

Second Term
Area 1 3
Area 2 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Intercultural [I,G,K] (GER) 3
Science Elective 4

Third Year

First Term
300-400-level Area 1 3
Area 2 3
Area 3 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Elective 3
Complete Writing Portfolio 3

Second Term
300-400-level Area 2 3
300-400-level Area 3 3
Tier III Course [T] (GER) 3
Electives 6

Fourth Year

First Term
300-400 Any Area 3
Electives 6

Second Term
300-400 Any Area 3
Electives 12

Minors

American Indian Studies

O. Svingen, Coordinator

The minor in American Indian Studies requires 18 semester hours which shall include a required 9 hour core (Anth 320, CES 171, and Hist 308) and 9 hours of electives (Anth 327, 331, 333, 435, CES 372, 373, 379, 470, 475, FA 301, Mus 265). At least 9 of the credits must be taken at WSU and at least 9 hours must be at the 300-400 level. A minimum of 12 credits must be taken for a letter grade and a minimum gpa of 2.00 is required in the minor coursework.

Global Studies

E. Lear, Coordinator

The Global Studies minor is designed to provide an interdisciplinary global perspective on the arts, humanities, social sciences, and sciences. The minor is flexible and designed to complement majors from across the University, affording students the opportunity to reach beyond their majors, or to take courses related to their majors outside of the context of the United States. The minor requires 18 credit hours, of which half must be 300-400-level. Students select one of three tracks and one module from those listed within each track. Course substitutions are permitted in consultation with the director of the Global Studies minor. Additional courses may be included within the minor as developed in the University curriculum. Contact Erich Lear, coordinator, for more information.

Religious Studies

M. Myers, Coordinator

For a minor in religious studies, a student must take at least 18 semester hours of work, of which at least half must be 300-400 level. The minor includes the core (minus the seminar in religious studies) and three courses from the required list of comparative religion.

Certificates

Certificate in American Indian Studies

O. Svingen, Coordinator

The certificate in American Indian Studies requires 18 semester hours which shall include a required core (9 hours) and 9 hours of electives. 15 of the credits must be taken at WSU, and 9 hours must be at the 300-400 level. A minimum of 12 credits must be taken for a letter grade and a grade of C or better must be earned in each of the required and recommended courses in order to qualify for the certificate. Any currently enrolled degree-seeking student is eligible to enroll in the certificate program. Other students must meet the existing admissions standards for non-degree seeking students. The University undergraduate certificate fee will apply. Students must complete Anth 320, CES 171, and Hist 308. The remaining 9 hours are chosen from the following elective courses: Anth 327, 331, 333, 435, CES 372, 373, 379, 470, 475, FA 301, Mus 265. Other courses in American Indian studies may be added to the elective pool as they become available.

Contact O. Svingen, coordinator, for more information.

Description of Courses

General Studies Courses

GenSt
400 General Studies Portfolio 1 Prereq senior standing. Evaluating one’s educational experience and presenting that evaluation in written form. S, F grading.

Department of Geology

www.wsu.edu/~geology/
Webster 1228
509-335-3009

Professor and Department Chair, P. B. Larson; Professors, F. F. Foit, Jr., D. R. Gaylord, C. K. Keller, A. J. Watkinson, J. A. Wolff; Associate Professors, D. Schulze-Makuch, M. C. Pope; Assistant Professor, J. D. Vervoort; Adjunct Faculty, R. Allen-King, A. J. Busacca, R. M. Conrey, L. E. Davis, R. L. Patton, S. P. Reidel; Emeriti Professor, G. D. Webster, P. E. Rosenberg.

Geology is the study of the Earth, its composition, structure, origin, and evolution. Virtually every aspect of modern life is in some way dependent on the science of geology. For example, it is the geologist’s job to discover new reserves of energy and raw materials, evaluate groundwater quality and quantity for drinking water supply, assess geologic hazards in land-use planning, and unravel the mechanisms of continental drift and biological evolution.

Both general and advanced training is offered in most specializations in geology. The lower-division courses are designed to provide a strong foundation for those who major in geology as well as a stimulating introduction to earth science for the non-major. The 300-400-level courses provide training for professional geological work as well as preparation for postgraduate study.

The department has modern teaching facilities and special equipment, including an electron microscope, X-ray diffraction and fluorescence instrumentation, inductively coupled plasma mass spectrometer, isotope extraction lines and isotope mass spectrometer, gas chromatographs and carbon analyzer, drilling rig, groundwater field demon-
station site, and transmitted and reflected light microscopes. There are active research programs in igneous petrology, geochemistry and mineralogy, structural geology and tectonics, groundwater and contaminant hydrology, sedimentology, and stratigraphy.

The department offers courses of study leading to the degrees of Bachelor of Science in Geology, Master of Science in Geology, and Doctor of Philosophy (Geology).

Geology majors are expected to graduate with a complete understanding of earth, including its constituent materials, the environments and processes through which these materials form and interact, and its physical, chemical, and biological evolution. The students are expected to be capable of examining and interpreting relations among geologic materials in the field. Problem solving and critical thinking will be applied in the classroom, laboratory, and field, and effective communication skills will be expected. The students will demonstrate quantitative understanding of earth materials and processes.

Honors Students

A senior thesis or enrollment in Geol 499 is required.

Preparation for Graduate Study

As preparation for work toward an advanced degree in geology, a student should have completed, or plan to take without graduate credit, the following or their equivalents: Geol 102, 210, 308, 320, 340, 350, 355, 356, 362; one year of general physics; one or their equivalents: Math 140 [N] or 171 [N] (GER)

GEOLOGY DEGREE PROGRAM (120 HOURS)

A 2.0 minimum GPA in the major is required.

First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Engl 101 [W] (GER)^1</td>
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<tr>
<td></td>
<td>GenEd 110 [A] (GER)</td>
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<td></td>
<td>Geol 101 [P] or 102 [P] (GER)</td>
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<tr>
<td></td>
<td>Math 107, if necessary</td>
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<tr>
<td>Second Term</td>
<td>Chem 106 [P] (GER)</td>
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<tr>
<td></td>
<td>ComSt 102 [C] (GER)</td>
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<td></td>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td></td>
<td>Math 140 [N] or 171 [N] (GER)^2</td>
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</table>

Second Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>Geol 210 [P] (GER)</td>
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</tr>
<tr>
<td></td>
<td>Geol 350 [M]</td>
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<tr>
<td></td>
<td>Geol 351</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Math 172, Cpt S 121, or Stat 412</td>
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</tr>
<tr>
<td></td>
<td>Phys 101 [P] or 201 [P] (GER)</td>
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</tr>
<tr>
<td>Second Term</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Geol 356</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Phys 102 [P] or 202 [P] (GER)</td>
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</tr>
<tr>
<td></td>
<td>Year 2, Summer Session: Geol 307 [M]</td>
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</table>

Third Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td></td>
<td>Geol 351</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Geol 320</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Intercultural [L,G,K] (GER)</td>
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</tr>
<tr>
<td></td>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td></td>
<td>Complete Writing Portfolio</td>
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<tr>
<td>Second Term</td>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td></td>
<td>Econ 102 [S] (GER)</td>
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<td></td>
<td>Geol 340 [M]</td>
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<td></td>
<td>Geol 362</td>
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<tr>
<td></td>
<td>Elective</td>
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<td>Year 3, Summer Session: Geol 308 [M]</td>
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Fourth Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>Foreign Language, if necessary</td>
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<tr>
<td></td>
<td>Geology Electives</td>
<td>6</td>
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<tr>
<td></td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Second Term</td>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Foreign Language, if necessary</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Geology Elective</td>
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<tr>
<td></td>
<td>Tier II Course (GER)</td>
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</tbody>
</table>

Minors

Geology

A student with 90 semester hours may certify a minor. A minor requires a minimum of 16 semester hours of letter-graded geology coursework, half of which must be in 300-400-level course work. A minimum 2.0 gpa in geology minor course work is required.

Description of Courses

Geology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geol 101</td>
<td>Introduction to Geology</td>
<td>3-3</td>
</tr>
<tr>
<td>Geol 102</td>
<td>Physical Geology</td>
<td>3-3</td>
</tr>
<tr>
<td>Geol 150</td>
<td>Earth's History and Evolution</td>
<td>3-3</td>
</tr>
<tr>
<td>Geol 210</td>
<td>Geology of the National Parks</td>
<td>3-3</td>
</tr>
<tr>
<td>Geol 260</td>
<td>Field Petrology</td>
<td>2-3</td>
</tr>
<tr>
<td>Geol 270</td>
<td>Introductory Oceanography</td>
<td>3-3</td>
</tr>
<tr>
<td>Geol 275</td>
<td>Quantitative Concepts in Geology</td>
<td>3-3</td>
</tr>
<tr>
<td>Geol 276</td>
<td>Special Topics: Study Abroad</td>
<td>1-15</td>
</tr>
<tr>
<td>Geol 277</td>
<td>Special Topics: Study Abroad</td>
<td>1-15</td>
</tr>
<tr>
<td>Geol 278</td>
<td>Special Topics: Study Abroad</td>
<td>1-15</td>
</tr>
</tbody>
</table>
307 Geology Field Camp 3 (0-9) Prereq Geol 101, 210. Introduction to geologic field methods; basic geologic mapping. Cooperative course taught jointly by WSU and UI (Geol 290).

308 [M] Field Geology 3 (0-9) Prereq Geol 307, 340, 350. Advanced field problems and methods; interpretation of field data, preparation of reports based on field observations and interpretations. Cooperative course taught jointly by WSU and UI (Geol 490).

310 Invertebrate Paleontology 3 (2-3) Prereq Geol 210. Morphology, classification, evolution, and paleoecology of fossil invertebrate organisms.

315 Water and the Earth 3 (2-3) Prereq Chem 106, Geol 101 or 260; Math 140, 171, or c/; Phys 102 or 202. Global hydrologic cycle, including rivers and weathering, groundwater, rainwater and the atmosphere, oceans, human impacts. Field research required.


322 [P] Geology of the Pacific Northwest 3 Prereq Geol 101 or 102. Physical geology of the Pacific Northwest focusing on geological processes important in its evolution. Field trips required. Credit not granted for both Geol 322 and 323.

323 [P] Geology of the Pacific Northwest 4 (3-3) Prereq Geol 101 or 102. Physical geology of the Pacific Northwest focusing on geological processes important to its evolution. Field trips required. Credit not granted for both Geol 322 and 323.


350 Mineralogy and Crystallography 4 (2-6) Prereq Chem 101 or 105; Geol 101 or 102. Composition, physical properties, structure, crystallography, identification, and origin of minerals. Field trip required.

351 Optical Mineralogy 1 Prereq c/ in Geol 350 or by permission. Elements of optical crystallography as applied to identification of minerals.

356 Igneous Petrology 3 (2-3) Prereq Geol 351. Origin, evolution, and eruption of magmas; emphasizes mineralogy, textures, chemical composition, and physical form of igneous rock. Field trip required.

362 Metamorphic Petrology 2 (1-3) Prereq Geol 351. Mineralogy and petrology of metamorphic rocks using the polarizing microscope. Field trip required.

390 [P] Living on the Edge: Global Climate Change and Earth History 3 Prereq junior standing. Global earth system: ocean, earth, atmosphere, biosphere, and cryosphere; human impact on the climate system; climate change data predictions; debates.

391 [P] Living on the Edge: Global Climate and Environmental Change Laboratory 1 (0-3) Prereq junior standing. Laboratory for Geol 390.

403 Environmental Geology 3 Prereq Geol 101 or 102. Geological hazards and geologic problems associated with human activities. Optional field trip.

405 Geophysics 4 (3-3) Prereq Geol 340. Theory and application of geophysical methods for hydrology, environmental, engineering, exploration, and structural geology; review of techniques. Credit not granted for both Geol 405 and 505.

413 Soil Physics 3 (2-3) Prereq Math 107; Geol 101, 102 or Soils 201. Same as Soils 413. Credit not granted for both Geol 413 and 513.


428 Geostatistics 3 Same as Stat 428.

444 Earthquakes and Seismic Hazards 3 Prereq Geol 101, Phys 101. Geology of earthquakes from the mechanics of failure to seismic waves to seismicity associated with all fault types in a variety of tectonic settings; methods of identifying paleo-earthquakes in the geological record and assessing seismic risk in active fault environments. Cooperative course taught by UI (Geol 444), open to WSU students.

451 Pedology 3 (2-3) Same as Soils 451.

459 Geodynamics 3 Prereq permission of instructor. Dynamics, movement, and deformation of the earth's lithosphere, aethenosphere, and mantle; emphasis on deformation processes and constraints derived from investigation of active tectonics using geophysics, seismology, geodesy, and structural geology. Credit not granted for both Geol 459 and 559. Cooperative course taught jointly by WSU and UI (Geol 459/559).

470 Introduction to Economic Geology 3 (2-3) Prereq Geol 340, 350. Genesis, evolution and tectonic setting of ore deposits comprising theory, description, and detailed hand specimen analysis. Field trip to major mining districts. Cooperative course taught by WSU, open to UI students (Geol 470).

475 Groundwater 3 (2-3) Prereq BSysE 351, C E 317 or Geol 315; and Math 140 or 172 or c/. Introduction to groundwater occurrence, movement, quality, and resource management; emphasizing physical and biogeochemical principles. Field trip required.

476 Exploration Methods 3 Prereq Geol 470. Design of mineral exploration programs and integration and evaluation of geologic, geochemical, and geophysical exploration techniques. One 10-day field trip. Cooperative course taught by UI (Geol 476), open to WSU students.

480 Introductory Geochemistry 3 Prereq Chem 106, Geol 350. The chemistry of Earth materials and processes.

483 Radiogenic Isotopes and Geochronology 3 Chem 105 and 106; Geol 480 or by permission. Radiogenic isotopes and their uses as chronometers (radiometric dating) and as tracers of earth evolution and differentiation. Cooperative course taught jointly, open to UI students (Geol 483).

485 Special Topics: Study Abroad V 1-15. May be repeated for credit. S, F grading.

487 Special Topics: Study Abroad V 1-15. May be repeated for credit. S, F grading.

488 Special Topics: Study Abroad V 1-15. May be repeated for credit. S, F grading.

498 Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Prereq major in geology or related field. Research papers presented by students, faculty, and visiting scientists on geological research. Credit not granted for both Geol 498 and 598. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

505 Geophysics 4 (3-3) Graduate-level counterpart of Geol 405; additional requirements. Credit not granted for both Geol 405 and 505.

515 Paleocology 3 Ecological dynamics as applied to the paleontological record; preservation constraints; animal-sediment interactions; organisms’ role in the relative time scale. Field trip required. Cooperative course taught by UI (Geol 515), open to WSU students.

520 Advanced Topics in Sedimentary Rocks 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq Geol 320. Modern aspects of sedimentary rocks. Cooperative course taught by WSU, open to UI students (Geol 520). Field trip required.

521 Clastic Depositional Systems 3 (2-3) Prereq Geol 320. Clastic sedimentary environments; architectural elements and facies analysis. Cooperative course taught by WSU, open to UI students (Geol 528). Field trip required.

523 Advanced Topics in Stratigraphy 3 May be repeated for credit. Prereq Geol 421. Cooperative course taught by WSU, open to UI students (Geol 523).

525 Carbonate Depositional Systems 3 (2-3) Prereq Geol 320. Modern carbonate environments and processes; ancient carbonate rock sequences; carbonate platform-to-basin transition; diagenesis of carbonate rocks. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 529).

527 Sedimentary Petrography 3 (1-4) Description and classification of sedimentary rocks in thin sections and hand specimens. Field trip required. Cooperative course taught by UI (Geol 527), open to WSU students.

529 Geologic Development of North America 3 Prereq Geol 310, 421. Tectonic, magnetic, and sedimentary sequence studies of North American continent through time; concepts of metal and petroleum enrichment related to time and geological processes. Field trip required. Cooperative course taught by UI (Geol 532), open to WSU students.
533 Advanced Vadose Zone Hydrology 2 Pre-
req SoilS 413. Same as SoilS 533.

538 Orogenic Systems I 3 Prereq Geol 340. Field-
base course examines tectonic processes active in the northern Cordillera. Field trip required and final research paper. Cooperative course taught jointly by WSU and UI (Geol J538).

539 Orogenic Systems II 3 Prereq Geol 340. The tectonic evolution of western North America is examined in the field. Field trip required and a research paper. Cooperative course taught jointly by WSU and UI (Geol J539).

540 Tectonics 3 Prereq Geol 340. Nature and origin of the Earth's major tectonic features. Cooperative course taught by WSU, open to UI students (Geol 548).

541 Structural Analysis 3 (2-3) Prereq Geol 340. Structural analysis of complexly deformed rocks in orogenic belts. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 541).

542 Geomechanics 3 Prereq Phys 102, Math 171. Concepts of linear elastic fracture mechanics as applied to the classification, origin and evolution of all types of rock fractures; continuum theory in rock mechanics; rock strength and failure criteria; stress tensors; elastic theory. Field trip required. Cooperative course taught by UI (Geol 542), open to WSU students.

546 Fault Mechanics 3 Prereq Geol 340. Examina-
tion of fault mechanics; internal fault archi-
tectures; fault slip distributions; relationship to rock properties; ecellon fault systems, as well as earthquake behavior and seismic hazard recognition. Field trip required. Cooperative course taught by UI (Geol 546), open to WSU students.

550 Advanced Mineralogy 3 Prereq Chem 106, Geol 355. Elements of crystal chemistry and crystal physics. Cooperative course taught by WSU, open to UI students (Geol 550).

551 Ore Microscopy and Fluid Inclusion Anal-
ysis 3 (0-9) Prereq Geol 355, 470. Ore and alteration mineralogy of major ore deposits; mineral identification, textural interpretation, sample preparation, photomicrography, fluid inclusion analysis. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 551).

552 X-ray Analysis in Geology 3 (2-3) Genera-
tion and use of X-rays for geological research; electron microscope/SEM, X-ray fluorescence and X-ray powder diffraction. Cooperative course taught by WSU, open to UI students (Geol 552).

554 Physical Petrology 3 Prereq Geol 356. The applications of continuum mechanics and fluid dynamics to the generation, rise, storage, and eruption of magmas. Cooperative course taught by UI (Geol 554), open to WSU students.

557 High-Temperature Aqueous Geochem-
istry I 3 (2-3) Prereq Chem 331, Geol 582; or 
by interview only. Application of solution chemistry to hydrothermal solutions; Eh-pH, 
log f(O2) -pH, activity—activity diagrams; es-
timation techniques; water structure; metal 
complexation; solubility, transport and deposi-
tion; equilibrium speciation; geothermal fields; 
experimental methods; activity coefficients. Field trip required. Cooperative course taught by UI (Geol 557), open to WSU students.

558 High-Temperature Aqueous Geochemis-
try II 3 Prereq Chem 331, Geol 557, 582; or 
by interview only. Expands on topics covered in Geology 557 through seminar format; selected readings from primary literature followed by presentations and discussions in class. Coop-
erative course taught by UI (Geol 558), open 
to WSU students.

559 Geodynamics 3 Graduate-level counterpart 
of Geol 439; additional requirements. Credit 
not granted for both Geol 459 and 559. Coop-
erative course taught jointly by WSU and UI 
(Geol 559).

560 Advanced Igneous Petrology 3 (2-3) Ori-
gin, evolution, and tectonic significance of igne-
ous rocks. Field trip required. Cooperative course taught by WSU, open to UI students 
(Geo 560).

561 Advanced Topics in the Geochemistry of 
Hydrothermal Ore Deposits 3 Advanced study of geochemical aspects of the formation 
of and environmental impact of metallic ores 
of hydrothermal origin; selected readings and 
presentations. Field trip required. Cooperative course taught by UI (Geol 577), open to WSU students.

563 Igneous Petrogenesis 3 (2-3) Prereq Geol 
356. Chemical and petrologic techniques used to interpret the origin and evolution of igne-
ous rocks. Cooperative course taught by WSU, open to UI students (Geol 563).

565 Biogeochemistry and Global Change 4 
3 (3-3)

567 Volcanology 3 (2-3) Prereq Geol 356. Eruption mechanisms, volcanic processes and 
landforms, and volcanic deposits. Field trips 
required. Cooperative course taught by UI 
(Geol 567), open to WSU students.

569 Field Methods in Hydrogeology 2 (1-3) 
Prereq Geol 475; Geol 577 or 579. Theory and 
practice of acquisition of hydrogeologic data, 
emphasizing design and execution of field ex-
periments.

570 Advanced Topics in Hydrogeology V 1-4 
May be repeated for credit; cumulative maxi-
mum 9 hours. Prereq Geol 475. Topics may 
include organic/inorganic contaminants fate, re-
charge, carbon cycling, solute applications. 
Cooperative course taught by WSU, open to UI students (Geol 571).

571 Geochronology of Hydrothermal Ore De-
oposits 3 (2-3) Prereq Geol 470. Ore formation 
in hydrothermal environments; sulfide miner-
ality, water/rock interactions, and stable iso-
tope relationships to altered rocks. Field trip 
required. Cooperative course taught by WSU, 
open to UI students (Geol 571).

573 Advanced Topics in Economic Geology 2 
May be repeated for credit. Prereq Geol 470. 
Ore-forming process or deposit type combin-
ing literature synthesis, theoretical evaluation 
and field trip inspection. Field trip required. 
Cooperative course taught by WSU, open to UI 
students (Geol 573).

574 Remote Sensing and Geospatial Analysis 3 
1-4) Same as SoilS 574.

575 Seminar in Remote Sensing 1 Same as SoilS 
575.

576 Fundamentals of Modeling Hydrogeo-
logic Systems 3 Prereq Math 275; permission of 
instructor. Development and application of 
models representing physical systems, with 
emphasis on groundwater flow; basic equa-
tions of potential flow; properties assignment; parameter sensitivity; dimensional analysis. Cooperative course taught by UI (Hydr 576), open to WSU students.

577 Advanced Groundwater Hydraulics 3 
Same as C E 577.

578 Groundwater Geochemistry 3 (2-3) Prereq 
graduate standing. Interaction of groundwater 
geochemistry and the environment including micro-
bial populations with emphasis on microbial 
transport in the sub-surface and bioremediation 
treatment approaches.

579 Groundwater Geochemistry V 2-4 May 
be repeated for credit; cumulative maximum 
4 hours. Prereq Chem 331, Geol 475. Organic 
and inorganic aqueous geochemistry; controls 
on groundwater contaminant fate. Cooperative 
course taught by WSU, open to UI students 
(Hydro 566).

582 Petrologic Phase Equilibria 3 Prereq grad-
uate standing. Thermodynamic and graphical 
analysis of phase equilibria in igneous and metamorphic rock systems.

583 Radiogenic Isotopes and Geochronology 3 
Graduate-level counterpart of Geol 483; ad-
ditional requirements. Credit not granted for 
both Geol 483 and 583. Cooperative course 
taught jointly, open to UI students (Geol 483).

584 Stable Isotope Geochemistry 3 Principles and 
applications of isotope geochemistry in the 
geochemical sciences. Cooperative course taught 
by WSU, open to UI students (Geol 584).

592 Advanced Topics in Structural Geology 1-4 
May be repeated for credit; cumulative max-
imum 6 hours. Advanced topics across 

normal subject boundaries. Cooperative course 
taught by WSU, open to UI students (Geol 592).

593 Tectonics and Structural Geology 3 
Prereq Geol 340. Emphasizes design and e-

593 Advanced Topics in Geomechanics
V 1-4 Advanced treatment of current topics in geomechanics and related disciplines such as structural geology, hydrogeology, engineering geology. Cooperative course taught by UI (Geol 593), open to WSU students.

595 Advanced Topics in Geology
V 1-4 Topics of current interest in geology. May be repeated for credit; cumulative maximum 6 hours.

596 Advanced Topics in Geology
V 1-4 Topics of current interest in geology. May be repeated for credit; cumulative maximum 6 hours.

597 Advanced Topics in Geology
V 1-4 May be repeated for credit; cumulative maximum 6 hours. Topics of current interest in geology.

598 Graduate Seminar
1 May be repeated for credit; cumulative maximum 4 hours. Grading-level counterpart of Geol 498; additional requirements. Credit not granted for both Geol 498 and 598. S, F grading.

600 Special Projects or Independent Study
Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination
Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination
Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination
Variable credit. S, F grading.

Health Policy and Administration, WSU Spokane

www.hpa.spokane.wsu.edu
Health Sci Bld 212A
509-358-7980

Professor and Chair, W. C. Schmidt; Professors, J. S. Coyne, D. A. Sciar, T. L. Skaer; Associate Professors, M. M. Ahern, F. Akinci, J. Kennedy

The Department of Health Policy and Administration offers the Master of Health Policy and Administration degree at WSU Spokane. The HPA program’s mission is: (1) to prepare excellent working students in metropolitan Spokane, eastern Washington, and the inland northwest region, and excellent students nationally interested in healthy communities, for a variety of professional health services management positions; and (2) to contribute to community health services enhancement and community health policy development through education, applied research, and service. A core value of the HPA Program and its faculty is to prepare health services managers with the knowledge, skills, and values to exercise professional leadership and promote healthy communities.

The 50 credit hour curriculum includes: introductory courses (Introduction to the Health Care System; Health Care Policy and Politics; Law and Ethics of Health Management; Government Regulation of Health Services; Health Care Cost Accounting; Biostatistics and Epidemiology for the Health Sciences); core courses (Health Care Economics; Health Care Finance; Health Management Decision Science; Health Care Management; Research and Evaluation Methods; Health Care Information Systems); electives; 3 credit internship; capstone course, Strategic Management and Marketing; and 3 credit graduate project.

Basic knowledge of microeconomics, financial accounting, and computer skills (word processing, spreadsheet) are prerequisites for the required courses. Computer assisted self-study programs and a listing of area classes satisfying the prerequisites are available from the program.

The graduate program in Health Policy and Administration is accredited by the CAHME (Commission on Accreditation of Healthcare Management Education) formerly ACEHSA (Accrediting Commission on Education for Health Services Administration). According to the Association of University Programs in Health Administration Directory of Programs, “CAHME is recognized by the Council for Higher Education Accreditation (CHEA) which oversees accreditation of the nation’s colleges and universities, and by the Department of Education, as the only accrediting agency in the field of health services administration. Accreditation by [CAHME] is the most important assurance that a graduate program meets the quality standards developed by the profession and the health services industry.”

The HPA Program is also admitted to the Western Interstate Commission for Higher Education (WICHE) Western Regional Graduation Program (WRGP). According to WICHE, WRGP “consists of very high quality masters and doctoral degree programs which tend not to be widely available throughout the West.” Admission of the HPA Program means that residents of Alaska, Arizona, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming are eligible to enroll at Washington resident rates of tuition. The WSU Health Policy and Administration Program is the only health administration program admitted to WRGP of the four CAHME-accredited programs in the WRGP region.

Students should apply for admission to WRGP through the regular HPA admissions process and identify themselves as “WICHE WRGP” applicants. Students should be a resident of one of the 14 participating states for one year before applying as a WRGP student. Part-time students are eligible to participate in WRGP if they have been admitted to a WRGP program.

Admission standards conform to the requirements of the WSU Graduate School. An undergraduate gpa of 3.0 or better is expected. In addition, GRE or GMAT scores are required for admission to the HPA Program, except for applicants holding a professional doctoral degree (e.g., MD, JD, DDS) or PhD from a US accredited school. Significant weight is given to GRE aptitude (verbal and quantitative combined) total scores of at least 1000, or a GMAT aptitude score of at least 500. However, indications of academic ability as expressed by undergraduate grade point average and professional experience are of greater importance than specific undergraduate background and GRE or GMAT scores.

For additional information, please call 509-358-7980 or visit www.hpa.spokane.wsu.edu.

Requirements for Admission:

500 Introduction to the Health Care System
3 Orientation to history and organization of the health care system.

501 Health Care Policy and Politics
3 History, methods, results and evaluation of health-care-related policy and politics.

502 Law and Ethics of Health Management
3 Private health law and ethics, including professional liability, relationship of physician and patient, malpractice reform, health institutions, and health access.

503 Government Regulation of Health Services
3 Prereq graduate standing. Public law regulation; health care quality, personhood and individual autonomy, life/death decisions, antitrust, health care financing and cost control.

509 Health Care Economics
3 Prereq microeconomics. The economics of allocating, financing and delivering health care services.

510 Health Care Cost Accounting
3 Prereq basic financial accounting; graduate standing. Basic cost-accounting concepts, principles, and applications in the health care setting.

511 Health Care Finance
3 Prereq HPA 512. Aspects of health care financial management fundamentals and managerial accounting for strategic financial management.

512 Health Management Decision Science
3 Prereq HPA 511. Application of decision science technology to risk-analysis problems in healthcare for both investor-owned and non-profit entities.

515 Health Care Management
3 Introduction to the knowledge, skills, and values associated with the practice of health management.

516 Health Quality Management
3 Overview of the total field of health quality, including strategic quality management programs, quality assurance, quality control, and design.

519 Biostatistics and Epidemiology for the Health Sciences
3 Prereq graduate standing. Application of quantitative methods to problems in the health sciences; statistical analysis software.

520 Research and Evaluation Methods
3 Prereq statistics or HPA 519. Basic research and evaluation methods for health care professionals.

530 Health Care Information Systems
3 Key attributes of health care information systems and their evolution in health care environment.

570 Marketing for Health Care Organizations
3 Prereq graduate standing. Basic marketing concepts, principles, and issues related to marketing public and private health care.
Program in Health Science, WSU Spokane

Associate Professor and Director of the Program in Health Sciences, S. E. Blank; Professors, L. Massey; Associate Professors, E.C. Johnson, M. Houghton (University of Idaho); Clinical Assistant Professors, J. Beary, S. Gules, R.B. Lutz (adjunct); Instructors, J. Knuth (adjunct), J. Troppmann (adjunct)

The Bachelor of Science in Exercise Physiology and Metabolism is a unique, interdisciplinary undergraduate degree program in the health sciences that focuses on the biological and social/psychological interrelationships between exercise and nutrition and the effect of this interaction on the health of individuals. The curriculum draws content from the biological and physical sciences, including courses in human anatomy, physiology, nutrition, organic and biochemistry, and microbiology; however, the primary focus of the upper division major is on the important interface between exercise physiology and metabolism.

The curriculum offers an integrative curricular approach with interdisciplinary examination of the multiple influences on individuals’ health based on benchmarks garnered from biological, nutritional, social/psychological, environmental, and clinical input. The program offers a unique perspective on how and why the human body responds to various exercise and nutritional stimuli. Students gain experiential learning through laboratories, practicum, and a semester-long worksite internship. At the completion of their program, students will be expected to demonstrate effective written, oral, and visual communication skills in a variety of settings and environments for “target audiences”; apply knowledge of physical, chemical, and biological sciences to exercise and nutrition sciences; apply knowledge of behavioral and social sciences to exercise and nutrition habits of diverse populations; demonstrate the ability to use, interpret, evaluate, and apply research principles to exercise and nutrition interventions; apply knowledge, skills, and abilities of exercise and nutrition assessment to individuals representing various health and disease states; demonstrate their understanding of the role of healthcare systems and public policy in the maintenance and achievement of health; develop critical thinking skills throughout the Exercise Physiology and Metabolism curriculum by utilizing problem solving activities and assignments; perform the exercise programming and nutrition care process and work effectively as a team member in a variety of settings such as acute care, rehabilitation facilities, and community health facilities; be well informed regarding the characteristics of various health and fitness settings and factors that impact their operation such as policies, regulatory agencies, reimbursement/funding, and legislative issues; and model professional skills and behaviors, including social responsibility, ethical practice, and a commitment to lifelong learning.

Students who complete this degree will be prepared for successful and rewarding careers and job opportunities including: clinical programs in rehabilitation institutes, hospitals, and clinics; cardiac, pulmonary, and renal rehabilitation; community health centers; sports nutrition; University and worksite wellness programs; exercise and health promotion; commercial fitness centers; and personal and sports specific training. In addition, graduates will be qualified to seek admission to the MS Exercise Science degree at Washington State University Spokane or graduate study in nutrition.

To prepare for the upper division Exercise Physiology and Metabolism coursework, students should be grounded in subject matter from biology, chemistry, anatomy, physiology, and nutrition. The following program of study is recommended for students who complete years one and two at WSU Pullman and years three and four at WSU Spokane plus an internship.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

BACHELOR OF SCIENCE IN EXERCISE PHYSIOLOGY AND METABOLISM WSU SPOKANE

(130 HOURS)

Students complete the first and second years at WSU Pullman and the third and fourth at WSU Spokane.

First Year

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>Chem 101 or 105 [P] (GER)</td>
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<tr>
<td>English 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 <a href="GER">A</a></td>
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<tr>
<td>Math Proficiency <a href="GER">N</a></td>
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<tr>
<td>PEAC 112</td>
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<tr>
<td>Phil 101 <a href="GER">H,G</a></td>
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Second Term

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<tr>
<td>FSNH 120</td>
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<tr>
<td>GenEd 111 <a href="GER">A</a></td>
<td>3</td>
</tr>
<tr>
<td>MvSt 262 or Biol 315</td>
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<tr>
<td>Chem 102 or 106 <a href="GER">P</a></td>
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Second Year

First Term

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<tr>
<td>Biol 102 <a href="GER">B</a></td>
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<td>Chem 345</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>MvSt 199</td>
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<td>MvSt 264</td>
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Second Term

<table>
<thead>
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<td>FSNH 233</td>
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<tr>
<td>MBioS 102</td>
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<tr>
<td>Biol 251</td>
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<td>AthF 311</td>
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Third Year

First Term

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<th>Course</th>
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<tr>
<td>ExMet 400</td>
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<td>ExSci 463</td>
<td>4</td>
</tr>
<tr>
<td>FSNH 427</td>
<td>2</td>
</tr>
</tbody>
</table>
Description of Courses

Exercise Physiology and Metabolism—Spokane Courses

ExMet

320 Strength Training and Conditioning: Theory and Application 4 Prereq Biol 251; Biol 315 or MvSt 262. Application of scientific principles of strength and conditioning as it relates to exercise training and sports.

340 Foods with Application of Physical Activity 3 (2-3) Prereq one semester of organic chemistry. Experimental approach to physical, chemical and sensory properties of foods; overview of culinary techniques, technology and application to physical activity.


400 Macronutrient Metabolism 3 Prereq FSHN 233, MBios 303 or c/ in anatomy and physiology. Digestion, absorption and metabolism of carbohydrates, protein and fats, and their utilization for energy.

402 Vitamin and Mineral Metabolism 2 Prereq ExMet 400. Absorption and metabolism of vitamins and minerals and their role in macronutrient metabolism and nutritionall require-ments for maintenance of health.

427 Nutritional Assessment and Lifestyle Counseling 2 (1-3) Prereq FSHN 233. Basic skills and concepts of nutrition assessment and lifestyle counseling of ambulatory adults using dietary intakes, menu planning and communi-cation skills.

435 Exercise, Diet and Disease 4 Prereq ExMet 400; ExSci 463. Pathophysiology of disease and integration of dietary and exercise therapies for treatment.


470 Sports Nutrition 3 Prereq ExSci 463, FSHN 233, MBios 303. Identification of energy, macro/micronutrients and fluid requirements during exercise; evaluation of dietary practices and ergogenic aids for pre- and post-competition, weight maintenance.

479 Nutrition and Exercise Practicum 3 (1-6) Prereq ExMet 400, 402; ExSci 463, 476; FSHN 427; FSHN 435 (for second semester repeat). Supervised experience in applying exercise and nutrition assessment techniques and developing exercise and nutrition prescription for normal and diseased subjects. May be repeated for credit; cumulative maximum 6 hours.

490 Nutrition and Exercise Internship 10 Prereq completion of all coursework for BS in Exercise Physiology and Metabolism. Supervised offsite exercise and nutrition field experience to assess normal and diseased clients and develop/apply nutrition and exercise prescriptions. S, F grading.

The Department of History's undergraduate major consists of 42 hours: 13 credits of major courses, 3 writing credits, 2 ethics credits and 6 seminar credits. Undergraduates who are pursuing writing requirements for the major should work with their advisors to select appropriate courses to complete the requirements in a timely manner.

A major in history can be used in government service, the new specialty of public history, several areas of business and industry, and many other fields. It can also be used in preparation for study of the law, the ministry, archival work, and librarianship. Double majors or complementary minors combining history with other fields are easily arranged.

The department offers courses of study leading to the degrees of Bachelor of Arts in History, Bachelor of Arts in Social Studies, Master of Arts in History, and Doctor of Philosophy. In cooperation with others, the department participates in the interdisciplinary Program in American Studies leading to the degree of Doctor of Philosophy.

Preparation for Graduate Study

Students who have had basic undergraduate training in history (approximately 12 hours) and who have had undergraduate majors in such subjects as American literature, economics, anthropology, and political science may be well prepared for graduate study in several fields of specialization in history. Adequate opportunities are provided for removing deficiencies by taking appropriate courses or special examinations.

Undergraduates who are pursuing their studies at other institutions or through other curricula at this institution and who contemplate graduate work in this department should select courses similar to those required in the schedule of studies.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

HISTORY—EDUCATION OPTION (139 HOURS)

Students who wish to earn a teaching credential must apply to Teacher Education Student Services in the College of Education. They should consult with an advisor in history.

The history education major consists of 42 hours: 36 hours of history, including Hist 101, 102, 110, 111; one from Hist 230, 231, 270, 272, 273, 275, and two more non-western/global courses (for a total of three in this category); one from CES 101, 111, 131, 151, 171, Hist 150, W St 200; 21 hours of 300-400-level history, which must include 300, 422, and 469. Econ 101 or 102, Pol S 101, and Psych 105 are also required to meet state certification guidelines. History courses and courses cross-listed with history do not count as GERs.

Students must have one year of a foreign language at the college level or two years at the high school level.

First Year

First Term

Hours

Arts & Humanities [H,G] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Department of History

Math Proficiency [N] (GER) 3 or 4

Science Elective (GER) 4

Second Term

Biological [B] or Physical [P] Sciences (GER) 4

CES 101 [I], 111 [S,D], 131 [S,D], 151 [G],
171 [G], Hist 150 [S,D] or
W St 200 [S] (GER) 3

ComSt 102 [C] (GER) 3

Econ 101 [S], Econ 102 [S], Pol S 101 [S], or
Psych 105 [S] (GER) 3

GenEd 111 [A] (GER) 3

Second Year

First Term

Biological [B] or Physical [P] Sciences (GER) 4

Econ 101 [S], Econ 102 [S], Pol S 101 [S], or
Psych 105 [S] (GER) 3

Engl 201 [W], 301 [W], or 302 [W] (GER) 3

Hist 101 [H] (GER) 3

Hist 110 [S] (GER) 3

Second Term

Arts & Humanities [H,G], Intercultural [I,G,K],
or Social Sciences [S,K] (GER) 3

Hist 102 [H] (GER) 3

Hist 111 [S] (GER) 3

Hist 230 [K], 231 [K], 270 [K], 272 [I],
273 [G], or 275 [K] (GER) 3

T & L 300 1

Third Year

First Term

300-400-level Hist Electives 6

Hist 300 [M] 3

T & L 301 2

T & L 317 2

Elective 3

Complete Writing Portfolio

Second Term

300-400-level Hist Elective 3

EdPsy 402 2

Hist 422 2

T & L 302 2

T & L 303 2

Elective 3

Fourth Year

First Term

300-400-level Hist Elective 3

Hist 469 [M] 3

T & L 400 2

T & L 404 2

T & L 445 2

Tier III Course [T] (GER) 3

Second Term

300-400-level Electives 6

Hist 480 3

T & L 328 2

T & L 478 2

Fifth Year

First Term

T & L 415 16

1. Courses [I or G] fulfill both this major and the Intercultural GER requirement; [S] courses count as both major and GER credit, but not as Intercultural [I,G,K] credit.

2. Pol S 101, Psych 105, Econ 101, or 102 [S] are required for state certification in History and are recommended to fulfill GER requirements.

HISTORY—GENERAL OPTION

(120 HOURS)

36 semester hours of history is required including 6 hours of US history, 6 hours of European history, and 9 hours of Non-Western/Global history; 21 hours at the 300-400-level, which must include Hist 300 and 469; and a 12 hour concentration (at least 6 hours 300-400-level) in the same or in related disciplines with the advisor's approval.

It is assumed that prior to the junior year the student will have completed courses meeting General Education and College of Liberal Arts requirements for graduation.

First Year

First Term

Arts & Humanities [H,G] (GER) 3

Engl 101 [W] (GER) 3

GenEd 110 [A] (GER) 3

Hist 300 or Hist Elective (any level) 3

Second Term

Biological [B] or Physical [P] Sciences (GER) 4

Communication Proficiency [C,W] (GER) 3

Intercultural [I,G,K] (GER) 3

Social Sciences [S,K] (GER) 3

Second Year

First Term

100-200-level Hist Electives 6

Arts & Humanities [H,G], Intercultural [I,G,K],
or Social Sciences [S,K] (GER) 6

Biological [B] or Physical [P] Sciences (GER) 4

Second Term

100-200-level Degree Program Course 3

100-200-level Hist Electives 3

Arts & Humanities [H,G] or
Social Sciences [S,K] (GER) 3

Foreign Language, if necessary, or Elective 3 or 4

Third Year

First Term

100-200-level Degree Program Course 3

300-400-level Hist Electives 6

Foreign Language, if necessary, or Elective 3 or 4

Third Year

Hist 300 or Hist Elective (any level) 3

Complete Writing Portfolio

Second Term

300-400-level Degree Program Course 3

300-400-level Electives 6

300-400-level Hist Elective 3

Hist 300 3

Fourth Year

First Term

300-400-level Degree Program Course 3

300-400-level Electives 6

Second Term

300-400-level Hist Electives 3

Hist 469 3

Tier III Course [T] (GER) 3

HISTORY—PRELAW OPTION

(120 HOURS)

36 semester hours in history is required including 6 hours of US history, 6 hours of European history, and 9 hours of Non-Western/Global history; 12 hours of 100-200 level history; 3 hours of additional history; 21 hours of 300-400-level, which must include Hist 300 and 469. Included in the program of study below are 30 hours of courses in communication, social sciences and humanities, and economics and business that are valuable preparation for study of the law. In addition to these requirements, students are urged to elect, in consultation with their advisor, courses that complement the curriculum's broad based liberal arts education.

A grade of C or better is required in all history courses used to fulfill the requirements for this major.

It is assumed that prior to the junior year that students will have completed courses meeting General Education and College of Liberal Arts requirements for graduation.

First Year

First Term

Arts & Humanities [H,G] (GER) 3

Engl 101 [W] (GER) 3

GenEd 110 [A] (GER) 3

Science Elective (GER) 4

Second Term

Biol [B] or Physical [P] Sciences (GER) 4

ComSt 102 [W] (GER) 3

GenEd 111 [A] (GER) 3

Intercultural [I,G,K] (GER) 3

Pol S 101 3

Second Year

First Term

100-200-level Hist Electives 6

Anth 101 or Psych 105 [S] (GER) 3

Biological [B] or Physical [P] Sciences (GER) 4

Phil 201 [H] (GER) 3

Soc 101 [S] (GER) 3

Second Term

100-200-level Hist Electives 6

Econ 101 3

Foreign Language, if necessary, or Elective 3 or 4

Pol S 102 [S] (GER) or Pol S 206 3

Third Year

First Term

300-400-level Hist Elective 3

Econ 102 3

Engl 301 [W] or 401 [W] (GER) 3

Foreign Language, if necessary, or Elective 3 or 4

Hist 300 or Hist Elective (any level) 3

Complete Writing Portfolio
### SOCIAL STUDIES—EDUCATION OPTION (142 HOURS)

Social studies is a major for students who plan to earn both a B.A. and a primary teaching endorsement in the multidisciplinary fields of history and the social sciences: anthropology, economics, geography, political science, psychology, and sociology. Social studies majors who wish to earn a teaching credential must apply to Teacher Education Student Services in the College of Education. They should consult with an advisor in history.

The social studies education major consists of 63 hours: lower-division (30 hours) to include Hist 101, 102, 110, 111; one from Hist 230, 231, 270, 272, 273, 275; one from CES 101, 111, 131, 151, 171, Hist 150, or W St 200; one from Anth 101, 198, 203, 260; Econ 101 or 102; Pol S 101; and Soc 101. Upper-division (30 hours): 15 hours of history, to include 422, one European, and one Non-Western/Global course; 15 hours of Social Sciences, to include one from Econ 320, 340, 350, 416, 470; one from geography (Anth 309, Hist 319, 495); one from Pol S 300, 316, 427, 450, 455; and 6 additional hours from Anth 307, 316, 320, 330, 331, 350; Psych 310, 324, 361, 470; and Soc 320, 351, 384, 430; Hist 480 is also required. An approved seminar is also required but may double-count with the upper-division courses above.

As social studies is an interdisciplinary major, 21 credits may double count to fulfill GER and major requirements. Students must have one year of a foreign language at the college level or two years at the high school level.

### First Year

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<th>Course</th>
<th>Hours</th>
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<td>Anth 101 [S] or Hist 101 [H] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>Science Elective (GER)</td>
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### Second Year

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<th>Hours</th>
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<tr>
<td>CES 101 [I], 111 [S,D], 131 [S,D], 151 [G], 171 [G], Hist 130 [S,D], or W St 200 [S] (GER)</td>
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<tr>
<td>Hist 300 or Hist Elective (any level)</td>
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### Third Year

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</thead>
<tbody>
<tr>
<td>Hist 422</td>
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<tr>
<td>T &amp; L 301</td>
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<tr>
<td>T &amp; L 317</td>
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<tr>
<td>Elective</td>
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### Fourth Year

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<td>Hist 480</td>
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<tr>
<td>T &amp; L 328</td>
<td>2</td>
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<td>T &amp; L 445</td>
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<td>T &amp; L 478</td>
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### Fifth Year

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1 Courses [I or G] fulfill both this major and the Intercultural GER requirement; [S] courses count as both major and GER credit, but not as Intercultural [L,G,K] credit.

### Minors

**History**

A minor in history requires 18 hours, 9 of which must be in 300-400-level courses. A grade of C or better is required in all course work for the minor.

### Description of Courses

#### History Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Hist 101 [H] Classical and Christian Europe</td>
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</tr>
<tr>
<td>Hist 102 [H] Modern Europe</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Hist 110 [S] American History to 1877</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Hist 111 [S] American History Since 1877</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Hist 198 [S] History Honors</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

#### Description of Courses

- **Hist 101 [H] Classical and Christian Europe**
  - Greece and Rome, birth of Christianity and Islam, Middle Ages, Renaissance, Reformation, religious wars, Louis XIV.

- **Hist 102 [H] Modern Europe**
  - War, revolution, industrialization, culture 18th to 20th centuries; imperialism, democracy, and totalitarianism; Europe's leaders Napoleon to Hitler; Post-WW II developments.

- **Hist 110 [S] American History to 1877**
  - Social, economic, cultural history of British mainland colonies/United States to 1877.

- **Hist 111 [S] American History Since 1877**
  - Social, economic, cultural history of United States, 1877 to present.

- **Hist 150 [S,D] Peoples of the United States**
  - Examination of the peoples of the United States from the beginnings of the colonial era to the present.

- **Hist 198 [S] History Honors**
  - Open only to students in the Honors College.

- **Hist 201 [K] Asian/Pacific American History**
  - Same as CES 211.

- **Hist 205 [H,D] African American History**
  - Same as CES 235.

- **Hist 216 [S,D] American Cultures**
  - Same as Am St 216.

- **Hist 230 [K] Latin America, The Colonial Period**
  - Overview of the most significant events, social and ethnic groups, practices, and institutions of colonial Latin America.

- **Hist 231 [K] Latin America, The National Period**
  - Investigation of broad themes, individual national histories, and United States policy in Latin America over the past two centuries.

- **Hist 255 [S,D] Chicana/o History**
  - Same as CES 255.
270 [K] India: History and Culture 3 Development of civilization; and contemporary societies of India and South Asia.

272 [I] Introduction to Middle Eastern History 3 History of the Middle East from Muhammad to the present; political and religious development and the impact of empires.

273 [G] Foundations of Islamic Civilization 3 Main ideas and institutions that have characterized Islamic civilization since its founding, presented thematically.

275 [K] Introduction to East Asian Culture 3 Civilizations of China and Japan.

280 [S,D] Race and Law in American History 3 Same as CES 280.

298 [S,D] History of Women in American Society 3 The roles of women—social, economic, political—in American history from colonial times to the present.

299 Model United Nations 1 May be repeated for credit; cumulative maximum 8 hours. Provides students with background of United Nations and prepares them to participate in the Model UN conference during spring semester in New York. Cooperative course taught by UI (IS 200/400), open to WSU students.

300 [M] Writing about History 3 Prereq certified major in history or social studies. Historical topics, use of sources, analytical thought, and precision in language.

306 [K] Cultures and Peoples of the Middle East 3 Same as Anth 306.

308 [K] North American Indian History, Precontact to Present 3 History of North American Indian peoples from circa 1350 to present.

313 [S] Black Freedom Struggle 3 Same as CES 335.

314 [H,D] American Roots: Immigration, Migration, and Ethnic Identity 3 An analysis of immigration to migration within the US including political and social consequences and the experiences of ethnic groups since the early 19th century.

319 Geographical History of the US 3 Perspectives on the geographical history of the U.S. from early times to the present.

320 [S,M] American Agriculture and Rural Life 3 Same as Ag Ec 320.


322 [H,D] US Popular Culture Since 1930 3 Movies, radio, television, sports, music, and other popular arts in historical context.

324 Lewis and Clark Among the Indians of the Pacific Northwest 3 Lewis and Clark expedition among the Indians of the Pacific Northwest; classroom and field course on the Lewis and Clark Trail.

325 [S,D] Food in the United Studies 3 Acceptance, preparation, and acquisition of particular foods reveals the ethnic, cultural, and gender differences of peoples in the US.

331 [K] Cultural History in Latin America 3 Social development of Blacks, Whites, and Indians in Latin America from the conquest to the modern era.

335 [K] Women in Latin American History 3 Survey of women's changing roles throughout Latin America from precolonial to present.

337 [H] Women in the Ancient World 3 Role of women in ancient Egypt, Mesopotamia, Israel, Greece, and Rome; focus on the formation of western attitudes toward women.

340 [H] Ancient Greece 3 History and culture of the preChristian Greek civilization.

341 [H] Rome: Republic and Empire 3 History and culture of the Roman world from the independence of the city to the onset of the medieval order.

342 [H] History of England to 1485 3 English history; intellectual and cultural development.

343 [H] History of England Since 1485 3 Continuation of Hist 342. English history from the reign of the first Tudor monarch, Henry VII, to the present welfare-state era.

345 Topics in History—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

348 History of Scandinavia 3 A history of Scandinavia from earliest historical times to the present.

349 The Vikings in History 3 The political, social, and cultural history of Scandinavia and Viking expansion to Northern Europe, Russia, and the North Atlantic, circa 750-1100 CE.

350 [S] European Women’s History, 1400-1800 3 Women's experiences in Europe from the Renaissance to the Enlightenment and the ideas and roles that shaped their opportunities.

351 Modern European Women’s History, Since 1800 3 Explores the experience of European women and cultural ideals about gender from a historical perspective.

355 [H] History of European Popular Culture 3 The transformation of Europe’s popular culture (music, games, stories, beliefs) through social, religious, print, and industrial revolutions.

370 [G] Civilization of Classical India 3 Aspects of arts, literature, music, mythology, philosophy, and religion of India to CE 1000, treated in historical and cultural context.

373 [G] Chinese Civilization 3 Growth of Chinese civilization from the dawn of history to the present.


380 [S] History of Medicine 3 Medicine in English-speaking societies, Middle Ages to present; development of medical care as a social institution.

381 [S] Science in Western Civilization Through Newton 3 Development of Western science and its influence on European culture and society.

382 [S] Science in Western Civilization from Newton to Einstein 3 Development of modern science and its influence on Western culture and society.

386 World War II in Europe 3 Causes for war; military operations; economic mobilization; social and cultural change; occupation and resistance; the Holocaust; the legacy of war.

387 World War II in Asia and the Pacific 3 Imperial rivalries in Asia; Japanese militarism; military, ideological and social aspects of the war; the atomic bomb; memory of the war.


390 U.S. Military History 3 American military history from 1630 to the present. Themes will include civil military relations, the conduct of war, and political-military relations.

394 Topics in History 3 Prereq junior status: 6 hours of Hist. May be repeated for credit; cumulative maximum 6 hours. Analytical study of selected historical movements and events.

395 Topics in History 3 May be repeated for credit; cumulative maximum 6 hours. Analytical study of selected historical movements and events.

398 [H,D] History of Women in the American West 3 The multicultural history of women in the west through women’s literature, archives, and oral history.

400 History in Media 3 Representation of historical people and events through different media e.g., text, film, video, and computers.

408 [T,D] Indians of the Northwest 3 Same as CES 475.

409 [T] American Environmental History 3 Prereq completion of one Tier I and three Tier II courses. A history of environmental change, ideas of nature, natural resource development, conservation politics, science and environmental policy.


411 American Diplomatic History, 1776-1914 3 Policies and principles characteristic of American diplomacy from 1776 to 1914. Credit not granted for both Hist 411 and 511.

412 American Diplomatic History in the 20th Century 3 Credit not granted for both Hist 412 and 512.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>413 [M]</td>
<td>Early American History to 1750 3 The cultures and interactions of Native Americans, Europeans, and Africans; development of colonial American societies and institutions.</td>
</tr>
<tr>
<td>415</td>
<td>Jeffersonian-Jacksonian America 3 Social and political history of the United States from 1789 to 1845; Jeffersonian and Jacksonian eras. Credit not granted for both Hist 415 and 515.</td>
</tr>
<tr>
<td>416</td>
<td>Civil War and Reconstruction 3 The Civil War as a problem in historical causation and social, political, and economic impact of the war. Credit not granted for both Hist 416 and 516.</td>
</tr>
<tr>
<td>417</td>
<td>Rise of Modern America 3 Response to industrialism in the Gilded Age and the reform movements of Populism and Progressivism. Credit not granted for both Hist 417 and 517.</td>
</tr>
<tr>
<td>418 United States, 1914-1945</td>
<td>America through World War I, cultural tensions of the Twenties, and the crises of Depression and WWII. Credit not granted for both Hist 418 and 518.</td>
</tr>
<tr>
<td>419 United States, 1945-Present 3</td>
<td>International and domestic impact of the Cold War, era of McCarthyism, American aspirations, tensions and conflicts in the post-industrial era. Credit not granted for both Hist 419 and 519.</td>
</tr>
<tr>
<td>420</td>
<td>American Constitutional History 3 Prereq Hist 110 or Pol S 101. Credit not granted for both Hist 420 and 520.</td>
</tr>
<tr>
<td>421</td>
<td>The American West 3 Multicultural exploration of the frontier experience and western America; environment, economic development, gender, class and race emphasized. Credit not granted for both Hist 421 and 521.</td>
</tr>
<tr>
<td>422</td>
<td>History of the Pacific Northwest 3 Political, social economic and environmental history of the Pacific Northwest. Fulfills the teaching requirement for Washington state history. Credit not granted for both Hist 422 and 522.</td>
</tr>
<tr>
<td>423</td>
<td>Radicals, Reformers, and Romantics: The Impact 3 Changing thought and its impact in the United States from colonial times to the present. Credit not granted for both Hist 423 and 523.</td>
</tr>
<tr>
<td>424 [T]</td>
<td>The City in History 3 Prereq completion of one Tier I and three Tier II courses. Description and comparison of the city through history in European and one or more non-Western cultures.</td>
</tr>
<tr>
<td>425 [T]</td>
<td>Workers Across North America 3 Prereq completion of one Tier I and three Tier II courses. Same as CES 426.</td>
</tr>
<tr>
<td>427</td>
<td>Public History: Theory and Methodology 3 An introduction to the broad range of non-traditional careers in history. Credit not granted for both Hist 427 and 527.</td>
</tr>
<tr>
<td>430 [M]</td>
<td>History of Mexico 3 War of independence, 19th century Mexico and the liberal-conservative struggle; modern Mexico since the Revolution of 1910. Credit not granted for both Hist 430 and 530.</td>
</tr>
<tr>
<td>431</td>
<td>20th Century Latin America 3 Contempo-ray developments, policies and trends in the Latin American states. Credit not granted for both Hist 431 and 531.</td>
</tr>
<tr>
<td>432</td>
<td>History of Cuba and the Caribbean 3 Historical development of the Caribbean, with emphasis on Cuba, from the Spanish arrival to Castro's revolution. Credit not granted for both Hist 432 and 532.</td>
</tr>
<tr>
<td>433</td>
<td>Revolution in Latin America 3 Social and political development in Central America; reasons for dictatorships and revolutionary movements; comparison with other Latin American regions. Credit not granted for both Hist 433 and 533.</td>
</tr>
<tr>
<td>434</td>
<td>European Expansion Overseas, 1400-1800 3 Prereq completion of one Tier I and three Tier II courses. The factors underlying European overseas expansion before 1800 and its impact on indigenous societies and world trading patterns.</td>
</tr>
<tr>
<td>435 [T]</td>
<td>Imperialism in the Modern World 3 Prereq completion of one Tier I and three Tier II courses. History of imperialism (colonial, economic, territorial, cultural) since 1800 as a global phenomenon.</td>
</tr>
<tr>
<td>436</td>
<td>Topics in History—Study Abroad 3</td>
</tr>
<tr>
<td>437</td>
<td>Topics in History—Study Abroad 3</td>
</tr>
<tr>
<td>438</td>
<td>Slavery, Abolition and Emancipation in World History 3 Prereq junior standing. History of slavery and abolition as a world-wide phenomena; trends and debates in historiographical literature.</td>
</tr>
<tr>
<td>440</td>
<td>The Early Middle Ages, 330-1050 3 Western Europe, the Byzantine Empire, and Islam from the dissolution of classical Roman civilization to the 11th century revival.</td>
</tr>
<tr>
<td>441</td>
<td>The Later Middle Ages, 1050-1500 3 Western European and Byzantine civilizations from the 11th century revival to the advent of the Renaissance in the West.</td>
</tr>
<tr>
<td>442</td>
<td>Topics in History Study Abroad 3</td>
</tr>
<tr>
<td>444 [T]</td>
<td>The Renaissance 3 Prereq completion of one Tier I and three Tier II courses. Political, cultural, and religious history of Europe, 1300-1500.</td>
</tr>
<tr>
<td>445</td>
<td>The Reformation 3 Political, cultural, and religious history of Europe, 1500-1650.</td>
</tr>
<tr>
<td>446</td>
<td>Age of Louis XIV: Europe 1600-1789 3 Early modern Europe emphasizing artistic, intellectual, and political trends.</td>
</tr>
<tr>
<td>447</td>
<td>Europe in the French Revolutionary and Napoleonic Era, 1789 to 1815 3 Credit not granted for both Hist 447 and 547.</td>
</tr>
<tr>
<td>448</td>
<td>Modern Europe as Reflected In Art 3 Early Modern Europe as reflected in architecture and the visual arts.</td>
</tr>
<tr>
<td>449 Europe and Two World Wars, 1914-1945 3 Political, intellectual, economic, and international aspects of European life during and between two world wars. Credit not granted for both Hist 449 and 549.</td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>Europe Since 1945 3 Europe from the end of World War II to the present; the Cold War, European integration, social and intellectual life. Credit not granted for both Hist 450 and 550.</td>
</tr>
<tr>
<td>453</td>
<td>Conservatism, Liberalism, and Socialism: Europe, 1815-1870 3 The consolidation of industrial society and the nation-state in 19th-century Europe. Credit not granted for both Hist 453 and 553.</td>
</tr>
<tr>
<td>454</td>
<td>Nationalism and National Conflict: Europe, 1870-1914 3 The rise of Europe to world predominance and the crisis of the European order. Credit not granted for both Hist 454 and 554.</td>
</tr>
<tr>
<td>459</td>
<td>Modern Britain 3 Britain and the Empire from the Napoleonic wars to the present. Credit not granted for both Hist 459 and 559.</td>
</tr>
<tr>
<td>461</td>
<td>Medieval Russia 1147-1700 3 Political, economic, social, and cultural developments in Russia from the foundation of Moscow (1147) through the accession of Peter I (1700).</td>
</tr>
<tr>
<td>462</td>
<td>History of Imperial Russia 3 History and culture of Imperial Russia from Peter the Great to the 1905 revolution. Credit not granted for both Hist 462 and 562.</td>
</tr>
<tr>
<td>464</td>
<td>Comparative Genocide 3 Prereq junior status, 6 hours in Hist. Study of the concepts, history, and consequences of genocide in the global perspective through theoretical and case study analysis. Credit not granted for both Hist 464 and 564.</td>
</tr>
<tr>
<td>465</td>
<td>East-Central Europe 3 History, government, and culture of the countries between Germany and the Soviet Union; emphasis on the 20th century. Credit not granted for both Hist 465 and 565.</td>
</tr>
<tr>
<td>466</td>
<td>History of the Cold War, 1944-present 3 Prereq completion of one Tier I and three Tier II courses. Exploration of the 50 year “cold” conflict between the US and USSR and its political, social, economic, and cultural consequences for the world.</td>
</tr>
<tr>
<td>467</td>
<td>Modern France 3 The history of France from the revolution of 1789 to the present.</td>
</tr>
</tbody>
</table>
468 Hitler and Nazi Germany 3 Origins and rise of Nazism; state, society and culture in the Third Reich; Nazi racial ideology; world war; the Holocaust. Credit not granted for both Hist 468 and 568.

469 [M] Seminar in History 3 May be repeated for credit. Prereq Hist 300.


472 [M] The Middle East Since World War I 3 Developments in the Middle East since World War I including nationalism, fundamentalism, and revolution. Credit not granted for both Hist 472 and 572.

473 [T] The Middle East and the West 3 Prereq completion of one Tier I and three Tier II courses. East-west tensions in the context of historical relations between the Middle East and West Europe since the rise of Islam.

475 Mao to Deng: The People’s Republic of China, 1949—1999 3 The major political, social, economic and cultural developments during the People's Republic of China.

476 [M] Revolutionary China, 1800 to Present 3 Continuity and change in the political, social, cultural and economic experience of China since 1800. Credit not granted for both Hist 476 and 576.

480 Methods of Teaching Social Studies 3 Prereq certification; by interview only. Methods, resources, selection of content, past and present issues in social studies education.

483 [T] Technology and Social Change to 1950 3 Prereq completion of one Tier I and three Tier II courses. The emergence of modern technological society with emphasis on the period 1750-1950.

486 [M] United States Foreign Relations 3 Same as Pol S 427.

489 [M] Recent Political Thought 3 Same as Pol S 438.

491 [T] History of World Trade 3 Prereq completion of one Tier I and three Tier II courses. The evolution of the institutions, conditions, and consequences of world trade after 1000.

492 [T] Cultural Appetites: Food in World History 3 Prereq completion of one Tier I and three Tier II courses. What food selection and preparation reveals about cultural integration around the world from the medieval era to the present.

495 [T] Space, Place, and Power in History: Historical Geography in Global Perspective 3 Prereq completion of one Tier I and three Tier II courses. Introduction to the discipline of historical geography; geographical and spatial approaches to European, North American, and Asian history.

496 Topics in American Studies 3 Same as Engl 496. Credit not granted for both Hist 496 and 596.

497 Seminar 3 May be repeated for credit; cumulative maximum 6 hours.

498 History Internship V 1-12 May be repeated for credit; cumulative maximum 12 hours. Prereq major or minor in history. Participation as intern in public or private sectors. Credit not granted for both Hist 498 and 598.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

510 Field Course in American History 3 May be repeated for credit. Readings and interpretive problems of American history.

511 American Diplomatic History 1776-1914 3 Graduate-level counterpart of Hist 411; additional requirements. Credit not granted for both Hist 411 and 511.

512 American Diplomatic History in the 20th Century 3 Graduate-level counterpart of Hist 412; additional requirements. Credit not granted for both Hist 412 and 512.

513 Theory and Method in American Studies 3 Same as Am St 513.

515 Jeffersonian-Jacksonian America 3 Graduate-level counterpart of Hist 415; additional requirements. Credit not granted for both Hist 415 and 515.

516 Civil War and Reconstruction 3 Graduate-level counterpart of Hist 416; additional requirements. Credit not granted for both Hist 416 and 516.

517 Rise of Modern America 3 Graduate-level counterpart of Hist 417; additional requirements. Credit not granted for both Hist 417 and 517.

518 United States, 1914-1945 3 Graduate-level counterpart of Hist 418; additional requirements. Credit not granted for both Hist 418 and 518.

519 United States, 1945-Present 3 Graduate-level counterpart of Hist 419; additional requirements. Credit not granted for both Hist 419 and 519.

520 American Constitutional History 3 Graduate-level counterpart of Hist 420; additional requirements. Credit not granted for both Hist 420 and 520.

521 The American West 3 Graduate-level counterpart of Hist 421; additional requirements. Credit not granted for both Hist 421 and 521.

522 History of the Pacific Northwest 3 Graduate-level counterpart of Hist 422; additional requirements. Credit not granted for both Hist 422 and 522.

523 Radicals, Reformers, and Romantics: The Impact 3 Graduate-level counterpart of Hist 423; additional requirements. Credit not granted for both Hist 423 and 523.

525 Seminar in American History 3 May be repeated for credit.

527 Public History: Theory and Methodology 3 Graduate-level counterpart of Hist 427; additional requirements. Credit not granted for both Hist 427 and 527.

528 Seminar in Public History 3 May be repeated for credit; cumulative maximum 6 hours. The development of skills at the graduate level to be used in nontraditional careers for historians.

529 Interpreting History through Material Culture 3 Historical interpretation to work on major historic preservation and museum projects.

530 History of Mexico 3 Prereq graduate standing. Graduate-level counterpart of Hist 430; additional requirements. Credit not granted for both Hist 430 and 530.

532 20th Century Latin America 3 Prereq graduate standing. Graduate-level counterpart of Hist 432; additional requirements. Credit not granted for both Hist 432 and 532.

533 History of Cuba and the Caribbean 3 Prereq graduate standing. Graduate-level counterpart of Hist 433; additional requirements. Credit not granted for both Hist 433 and 533.

534 Revolution in Latin America 3 Prereq graduate standing. Graduate-level counterpart of Hist 434; additional requirements. Credit not granted for both Hist 434 and 534.

535 Field Course in Latin American History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in Latin American history.

540 Seminar in European History 3 May be repeated for credit.

547 Europe in the French Revolutionary and Napoleonic Era, 1789 to 1815 3 Graduate-level counterpart of Hist 447; additional requirements. Credit not granted for both Hist 447 and 547.

549 Europe and Two World Wars, 1914-1945 3 Graduate-level counterpart of Hist 449; additional requirements. Credit not granted for both Hist 449 and 549.

550 Europe Since 1945 3 Graduate-level counterpart of Hist 450; additional requirements. Credit not granted for both Hist 450 and 550.

553 Conservatism, Liberalism, and Socialism: Europe, 1815-1870 3 Graduate-level counterpart of Hist 453; additional requirements. Credit not granted for both Hist 453 and 553.

554 Nationalism and National Conflict: Europe, 1870-1914 3 Graduate-level counterpart of Hist 454; additional requirements. Credit not granted for both Hist 454 and 554.

559 Modern Britain 3 Graduate-level counterpart of Hist 459; additional requirements. Credit not granted for both Hist 459 and 559.
560 Field Course in Early European History
3 May be repeated for credit; cumulative maximum 9 hours. Readings and issues in early European history.

562 History of Imperial Russia
3 Graduate-level counterpart of Hist 462; additional requirements. Credit not granted for both Hist 462 and 562.

563 History of the Soviet Union
3 Graduate-level counterpart of Hist 463; additional requirements. Credit not granted for both Hist 463 and 563.

564 Comparative Genocide
3 Graduate-level counterpart of Hist 464; additional requirements. Credit not granted for both Hist 464 and 564.

565 East-Central Europe
3 Graduate-level counterpart of Hist 465; additional requirements. Credit not granted for both Hist 465 and 565.

567 Modern France
3 Graduate-level counterpart of Hist 467; additional requirements. Credit not granted for both Hist 467 and 567.

568 Hitler and Nazi Germany
3 Graduate-level counterpart of Hist 468; additional requirements. Credit not granted for both 468 and 568.

569 Field Course in Modern European History
3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in modern European history.

570 World History Theory and Methods
3 Historiographic overview of the field of world history. May be repeated for credit; cumulative maximum 9 hours.

571 Topics in World History
3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Readings in themes and literature of a global approach to history.

572 Middle East Since World War I
3 Graduate-level counterpart of Hist 472; additional requirements. Credit not granted for both Hist 472 and 572.

575 Field Course in Women's History
3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Readings and interpretive problems in women's history.

576 Revolutionary China, 1800 to Present
3 Graduate-level counterpart of Hist 476; additional requirements. Credit not granted for both Hist 476 and 576.

577 Modern Japanese History
3 Graduate-level counterpart of Hist 477; additional requirements. Credit not granted for both Hist 477 and 577.

578 Field Course in Asian History
3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in Asian history.

580 Historiography
3

581 American Historiography
3

595 The Teaching of History in College
1 or 2 May be repeated for credit; cumulative maximum 5 hours. Theory, problems, and methods of teaching history at the college level.

596 Topics in American Studies
3 Graduate-level counterpart of Hist 496; additional requirements. Credit not granted for both Hist 496 and 596.

597 Seminar in History
2 or 3 May be repeated for credit.

598 History Internship
V 1-12 May be repeated for credit; cumulative maximum 12 hours. Graduate-level counterpart of Hist 498; additional requirements. Credit not granted for both Hist 498 and 598.

599 History Colloquium
1 Weekly discussions and presentations on historical topics or current faculty and graduate student research. S, F grading.

600 Special Projects or Independent Study
Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination
Variable credit. S, F grading.

702 Master's Special Problems,
Directed Study, and/or Examination
Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination
Variable credit. S, F grading.

Honors College

www.wsu.edu/honors/
Honors Hall 130
509-335-4805

M. F. Wack, Dean.

The mission of the Honors College is to offer students of high ability and initiative an enriched, four-year core curriculum that satisfies University graduation requirements. The Honors College helps students develop genuine intellectual curiosity and a life-long love of learning through an enriched series of courses, seminars, and independent work. Honors students acquire the broad foundations of liberal learning in the natural and social sciences, the arts and humanities, and cultures of the world. In addition, the Honors College emphasizes study of foreign languages and education abroad as premier vehicles for acquiring key competencies for an increasingly globalized society and economy.

Specifically, as a general education program, the Honors College expects that its graduates will be able to: (1) use knowledge and context to reason and reach conclusions as well as to innovate in imaginative ways; (2) analyze and communicate appropriately with mathematical and symbolic concepts; (3) use a disciplined and systematic approach to accessing, evaluating, and using information; (4) write, speak, and listen to achieve intended and meaningful understanding; and (5) employ self-understanding and interact effectively with others of similar and diverse cultures, values, perspectives, and realities.

Courses offered through the University Honors College are only open to students enrolled in the program. For admission, see the UHC section of the catalog.

Honors College Requirements

A bachelor's degree earned through the University Honors College requires approximately the same number of total semester hours as required by the General Education Program. Students in the UHC are not required to complete the General Education Requirements for graduation.

University Honors College students are required to complete the courses specified in the schedule of studies. The mathematics requirement for students in the University Honors College can be met in a number of ways (see below). In addition, students complete a three-credit Honors Thesis in the junior or senior year. A few selected majors will fulfill this requirement through coursework. Each student must choose an academic advisor, complete a significant piece of writing, and make a public presentation. Research, internship, community service, and education abroad can be used to satisfy this requirement. Selected students will receive a “Pass with Distinction” on their final transcript.

In order to increase the level of foreign language proficiency among its students, the Honors College adjusts its requirements to encourage students to complete the 204 level in a foreign language. The students who complete the 204 level need only complete two social science courses instead of three, if their particular major permits. This opportunity is available to all majors except foreign language majors who must complete another major or another foreign language at the 204 level to qualify for this option.

For continued enrollment in the University Honors College, students must maintain a 3.2 cumulative GPA. Any graded courses used to fulfill Honors College graduation requirements must receive a grade of C or better. Students who satisfactorily complete all UHC requirements and a cumulative GPA of 3.2 will receive a University Honors Certificate of Completion, provided they have completed a minimum of 14 graded credits of honors courses. Certification will be noted on the transcript.

Each semester, students enrolled in the Honors College take one to three honors courses in addition to their major courses.

The suggested schedule of studies, distributing the honors courses over four years, is as follows:

Freshman Year

Engl 198 or 298 and 199
Math requirement

Note: Students who qualify for Calculus II (Math 172) on the basis of the math placement test receive credit for Math 171 and thereby fulfill this requirement. Other students take the math required by their major. Honors College accepts: Math 140, 171, 202, 205, 206, 210, 212, and 251 and 252 combined. Check with a University Honors College advisor for any questions concerning the math requirement.

Freshman or Sophomore Year

Choose three:

Anth 198, CES 198, Econ 198, Hist 198, Pol S 198, Psych 198, Soc 198

Both required for non-science majors:
Science 198 (fall only)
Science 199 (spring only)

Note: Science majors taking biological science and physical science laboratory courses for their majors fulfill this requirement with those courses.
Sophomore or Junior Year

Choose one:
U H 300, Hum 198, Phil 198

Junior or Senior Year

U H 330 Development of Western Civilization
U H 350 Development of Global Civilization
U H 440 Domain of the Arts or U H 410 Domain of the Sciences
U H 450 Honors Thesis

Note: Three credits required except for some majors, which require 2 credits and 1 credit of departmental 499. Please check with an Honors advisor.

Timing Optional with Student:
Optional: U H 330 (Education Abroad Practicum and Research)

Certificates

Honors Certificate of Global Competencies

The Certificate of Global Competencies is an elective certificate for Honors students whose international interests and/or career objectives can be enhanced by an integrated program of language study, academic coursework, and study abroad. Students receive a notation on their transcript and an additional designation on the Honors Certificate of Completion. The Certificate of Global Competencies builds on the courses required for the Honors Certificate of Completion. Students who enter with good foreign language preparation usually will not require extra time to complete both certificates.

Twenty-three credits are required for the Certificate of Global Competencies. A minimum of 14 credits must be taken for a letter grade. At least 12 of the credits must be taken as WSU. A grade of C or better must be earned in each of the required, elective, and transfer courses in order to qualify for the certificate. The University undergraduate certificate fee will apply. Students are strongly encouraged to work with an Honors advisor to plan an appropriate schedule of studies.

The certificate entails requirements in three areas:
1. Foreign language competence: A minimum of 4 graded credits at the 204 level or higher, and fourth semester competence are required. Fifth semester competence is preferred. Most students will complete 6-8 graded credits in a foreign language.
2. Education abroad: A minimum of 6 graded credits from one term abroad or longer in an approved program. A “term” may include a summer session with a full academic load. A typical semester abroad in an approved program will result in 12-15 WSU credits.
3. Coursework: A minimum of 11 graded credits and 3 S,F thesis credits are required. The following courses are required: UH 300 (focused on language/culture/continent of study abroad experience), UH 330, UH 350, UH 430, and UH 450 (focus on an international topic).

Department of Horticulture and Landscape Architecture

hortla.wsu.edu/
Johnzon Hall 149
509-335-9503


HORTICULTURE

Courses in horticulture are designed to give instruction in enology and viticulture, fruit, vegetable, and ornamental production, handling, utilization, and management. Emphasis is on developing an understanding of plant growth and development fundamental to crop management. A production and management emphasis is designed to prepare students to be professionals in production, handling and processing, marketing, consulting, government, management, environment, and related fields. A science emphasis is designed to prepare students for graduate study and careers in research and teaching. Additional emphases are available in consultation with an advisor.

Students in horticulture may focus on environmental horticulture, fruits and vegetables, tree fruit management, or viticulture and enology.

The department offers an undergraduate minor in the areas of fruit and vegetable production, environmental horticulture, and viticulture and enology. Horticultural production and management students are encouraged to minor in business administration or agricultural economics. Horticultural science students are encouraged to take additional courses in chemistry, biochemistry, genetics, mathematics, and physics.

The BS in horticulture degree program provides students with the following learning outcomes: basic and functional understanding of the scientific basis and interdisciplinary nature of horticulture and horticultural crop production systems; the importance of the development of strong technical, written, and oral communication skills; knowledge and skills related to the application of emerging technologies in the horticultural sciences; an understanding of the role of plants in society; and the knowledge and skills necessary to function as an entry-level practitioner in the horticultural industry and to become, with experience, a successful horticulturist.
An interdisciplinary curriculum in integrated pest management is available to those students whose interests span the areas of horticulture and pest management. The curriculum is described under the entomology section of this bulletin.

The department offers courses leading to the degrees of Bachelor of Science in Horticulture, Bachelor of Landscape Architecture, Master of Science in Horticulture, Master of Science in Landscape Architecture, and Doctor of Philosophy.

**Preparation for Graduate Study**

Students with undergraduate majors in the plant sciences, including horticulture, crop science, plant pathology, environmental science, genetics, plant physiology, and biochemistry, may be well prepared for graduate study in horticulture.

Undergraduate students who are pursuing their studies at other institutions, or through other curricula at this institution, and who contemplate graduate work in horticulture should take as many courses in the basic physical and biological sciences as possible.

**LANDSCAPE ARCHITECTURE**

Landscape architecture is the professional art and science of planning and designing land elements so that the activities of people are in harmony with their environment. The practice ranges in scale from the design of residential and garden landscapes to planning and design of complex projects such as cities and regions.

The curriculum is accredited by the American Society of Landscape Architects (ASLA). It stresses a broadly based course of study emphasizing residential, community, and urban design; site, regional, and land use planning; and professional practice methods.

The curriculum is divided into two parts: pre-landscape architecture and landscape architecture. The opportunity exists to participate in special studies, professional work experiences, and foreign study.

The Bachelor of Landscape Architecture degree program provides students with the following learning outcomes: basic knowledge and skills in critical thinking, design/inquiry/problem solving, design technology, and design communications necessary to function as an entry level practitioner of landscape architecture and become, with experience, a creative and professional practitioner of landscape architecture; and exposure to a broad array of design and planning opportunities from which to experience and evaluate a variety of social, political, natural resource, and aesthetic issues affecting human habitats and land use.

**Schedules of Studies**

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

**HORTICULTURE—ENVIRONMENTAL OPTION (121 HOURS) ** *FYDA*

**First Year**

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td></td>
<td>Biol 120 or 106B [GER]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chem 101 [P] or 105 [P] [GER]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>English 101 [W] [GER]</td>
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<td></td>
<td></td>
<td>GenEd 110 A or 111 A [GER]</td>
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<tr>
<td>Second Term</td>
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<td>Chem 102 [P] or 106 [P] [GER]</td>
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<td></td>
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<td>GenEd 110 A or 111 A [GER]</td>
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<td>Hort 201</td>
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<td></td>
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<td>Math Proficiency [N] [GER]</td>
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</table>

**Second Year**

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<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Subjects</th>
</tr>
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<tbody>
<tr>
<td>First Term</td>
<td></td>
<td>Arts &amp; Humanities [H,G] [GER]</td>
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<tr>
<td></td>
<td></td>
<td>ComSt 102 [C] or H D 205 [C] [GER]</td>
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<tr>
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<td>Hort 231</td>
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<td>Hort 334</td>
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**Third Year**

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<td></td>
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1. Environmental Horticulture Emphasis (12 hours): Select a focus area in consultation with a faculty advisor from:

**HORTICULTURE—FRUIT AND VEGETABLE OPTION (121 HOURS) ** *FYDA*

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1. Environmental Horticulture Emphasis (12 hours): Select a focus area in consultation with a faculty advisor from:
Hort 416 3
Hort 425 [M] 3
IPM Elective 2 or 3
Electives 6

HORTICULTURE—TREE FRUIT MANAGEMENT OPTION

The Tree Fruit Management option in the BS horticulture degree is an integrated, cooperative program between Wenatchee Valley College and the Department of Horticulture and Landscape Architecture. This option is designed to train professional horticulturists for deciduous tree fruit industries. The first half of the program is taken at Wenatchee Valley College, where the educational emphasis is on applied aspects of tree fruit production and management through courses, orchard practicum experiences, and internships. Wenatchee Valley College, located in the heart of Washington’s tree fruit industry, has teaching orchards and well equipped facilities. The second half of the program is taken at either Washington State University Pullman or at the WSU Wenatchee Learning Center, with support of the Tree Fruit Research and Extension Center. In both locations, courses, laboratories, and research experience provide students with an advanced knowledge of the science, technology, and management of tree fruit production systems. Additional courses are taken to increase the breadth of knowledge about the diversity of horticultural crops and awareness of current issues in horticultural science. The courses offered at the Wenatchee Learning Center are taught via distance delivery technologies.

First Year

First Term  Hours
Agri 253 3
Agri 261 5
Chem 110 (WSU [P] GER) 5
Engl 101 (WSU [W] GER) 5
Second Term  Hours
Agri 252 4
Agri 262 5
Biol 122 (WSU [B] GER) 5
Third Term  Hours
Agri 254 2
Agri 263 5
Biol 123 5
Chem 111 (WSU [P] GER) 5
Fourth Term  Hours
Agri 255 3
Agri 296 3

Second Year

First Term  Hours
Agri 242 4
Agri 264 5
Agri 296 3
Math 201 (WSU [N] GER) 5
Sphc 220 (WSU [C] GER) 5
Second Term  Hours
Agri 265 5
Agri 270 4
Econ 202 (WSU [S] GER) 5
Third Term  Hours
Agri 243 4
Agri 266 5
Agri 289 2

Third Year

Fourth Term  Hours
Agri 296 3
Agri 267 5
Agri 296 3

Third Year

First Term  Hours
Chem 345 4
GenEd 110 [A] (GER) 3
Hort Elective 3 or 4
Complete Writing Portfolio
Second Term  Hours
Arts & Humanities [H,G] (GER) 3
Biol 150, 301, or 408 3 or 4
GenEd 111 [A] (GER) 3
Hort 251 4
Intercultural [I,G,K] (GER) 3

Fourth Year

First Term  Hours
Bot 320 4
Hort 356 1
Hort 418 [M] 3
Hort/AG Elective 3 or 4
Mgt Elective 3
Social Sciences [S,K] (GER) 3
Second Term  Hours
Hort 416 3
Hort 421 [M] 3
Hort 425 [M] 3
SoilS 441 3
Tier III Course [T] (GER) 3

HORTICULTURE—VITICULTURE AND ENOLOGY OPTION (123 HOURS)  

First Year

First Term  Hours
Biol 120 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Second Term  Hours
Chem 102 [P] or 106 [P] (GER) 4
ComSt 102 [C] or H D 205 [C] (GER) 3
Cpt S Elective 3
GenEd 110 [A] or 111 [A] (GER) 3
Hort 201 4

Second Year

First Term  Hours
Arts & Humanities [H,G] (GER) 3
Chem 345 4
Hort 313 3
SoilS 201 3
Second Term  Hours
Ag Ec 201 [S] or Econ 102 [S] (GER) 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biol 320 4
Hort 251 4
Math Proficiency [N] (GER) 3

Third Year

First Term  Hours
AgFM 325 3

Fifth Year

First Term  Hours
Biol 150, 408 or MBioS 301 3 or 4
Hort 356 1
Intercultural [I,G,K] (GER) 3
MBioS 303 3
Pl P 429 3
Complete Writing Portfolio
Second Term  Hours
Entom 340 3
FSHN 465 or Hort 435 3
Hort 413 3
MBioS 302 4
SoilS 441 3
Third Term  Hours
Summer Session—Hort 399 3

Fourth Year

First Term  Hours
FSHN 495 2
Hort 418 [M] 3
Hort Elective 3
Tier III Course [T] (GER) 3
Elective 3
Second Term  Hours
FSHN 465 or Hort 435 3
Hort 409 1
Hort 416 3
Hort 425 [M] 3
Elective 3

LANDSCAPE ARCHITECTURE (FIVE-YEAR AGREEMENT) (154 HOURS)  

The professional five-year course of study is divided into two segments; pre-landscape architecture and the third- through fifth-year professional landscape architecture program (BLA). Completion of the five-year program, totaling 154 credits, leads to the degree of Bachelor of Landscape Architecture and allows the graduate to enter the profession. At least three additional years of professional experience and successful completion of the landscape architectural license examination are necessary for registration as a licensed landscape architect in most states.

To be admitted to the major of landscape architecture, the student should have completed the pre-LA curriculum and submitted an application. Application forms and instructions are available from the Admissions Office and the Department of Horticulture and Landscape Architecture office. Applications to the professional program must be submitted prior to April 1. Due to limitations of space, faculty, and budget, admission can be granted to only the most qualified students based on experience, demonstrated abilities, motivation, and academic performance. The following courses (or approved equivalents) must be completed with a grade of C or better for students to be admitted into the professional program: Biol 120, Hort 231, 232, and LA 101, 102, 260, 262, 263, 365.

Transfer students who have completed the equivalent of the pre-LA curriculum may apply to the professional program. The entire fourth year of the program is conducted at the Interdisciplinary Design Institute on the WSU Spokane campus. Students may choose to complete their fifth year in Spokane or Pullman.
First Year

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<td>Engl 101 [W] (GER)</td>
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<td>ES/SP 150 [Q] (GER)</td>
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<td>Chem 101 [P] (GER)</td>
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<td>Communication [C,W] (GER)</td>
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Second Year

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Third Year

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<td>Hort 331</td>
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<td>L A 362</td>
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<td>SoilS 201</td>
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Fourth Year

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1 Students will select two specialization options of 9 credits each from the following: Business, Horticulture/Plant Science, Natural Resources/Ecology, Urban Design, Public Policy/Planning, Computer Applications, Self-Directed.

LANDSCAPE ARCHITECTURE (PRE-PROFESSIONAL PROGRAM)

Prelandscape architecture (pre-LA) is a two-year, nondegree course of study that is intended to prepare undergraduate students for the advanced professional curriculum in the upper division. The pre-LA curriculum concentrates on General Education Requirements (GERs) and basic professional courses. General Education Requirement (GER) courses should be selected with the assistance of a landscape architecture advisor. The completion of pre-LA prepares the student to make application to the professional major in landscape architecture or entry-level technical positions in various landscape industries. Transfer students who have not completed the equivalent of the pre-LA course work will be accepted directly into pre-LA.

First Year

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<tr>
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Second Term

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SoilS 374 3

Social Sciences [S,K] (GER) 3

L A 363 4

L A 367 4

L A 365 4

Second Year

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Minors

Horticulture

A minimum of 16 hours in horticulture is required, of which at least 8 hours must be in 300-400-level courses excluding Hort 356, 399, and 499. Hort/Crops 202 and 334 or 251 are required. All pass/fail enrollments must be approved by the department chair.

Description of Courses

Horticulture Courses

Hort

102 Cultivated Plants 3 Production strategies, innovative research, utilization and processing techniques of Washington's major agronomic and horticultural crops.
321 Olericulture Laboratory 1 (0-3) Prereq c// in Hort 320. Production principles and practices of vegetable crops; plant characteristics, cultivars, nutrition, growth, and development. Field trip required. Cooperative course taught by WSU, open to UI students (PlSc 321).

325 Plant Biotechnology 3 Same as Biol 325.

331 Landscape Plant Installation and Management 3 (2-3) Prereq Hort 231, 232. Principles and practices for installation and management of interior and exterior landscapes; specifications, site preparation, transplanting, growth control, problem diagnosis.

332 Interior Plantscaping 2 Prereq biological or plant science course or by permission. Design, selection, installation, management, and maintenance of plantings within buildings; effects of interior plants on people and the environment.

333 Interior Plantscaping Laboratory 1 (0-3) Prereq c// in Hort 332. Identification, cultural requirements, and pest problems of common interior plants; integration of business practices with design and maintenance considerations. Field trip required.

334 Controlled Environments for Horticultural Production 3 Prereq Hort 201. Principles and practices for modifying environmental factors for horticultural production in controlled environments; methods for environmental measurements. Field trip required. Cooperative course taught by WSU, open to UI students (PlSc 234).

340 Nursery Management 3 Management of commercial nurseries from plant propagation through sale of plants. Field trip required. Cooperative course taught by UI (PlSc 340), open to WSU students.

341 Nursery Management Laboratory 1 (0-3) Lab study relevant to Hort 340. Experiments on and demonstrations of different practices within nurseries. Field trip required. Cooperative course taught by UI (PlSc 341).

356 Preparation for Entering the Horticulture Profession 1 Prereq junior in horticulture. Resume writing; job applications; interviewing; investigation of job opportunities; contact with employers; internship reports; practice in oral communication.

399 Professional Work Experience V 1-4 May be repeated for credit, cumulative maximum 8 hours. Prereq basic horticulture. By interview only. Planned and supervised work experience. S, F grading.

405 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Prereq Biol 320, MBioS 301, 303. Genetic, molecular, cellular and evolutionary aspects of plant reproductive strategies and their manipulations. Credit not granted for both Hort 405 and 505.

409 Seminar in Viticulture and Enology 1 Current topics and recent developments in the field of viticulture and enology.

413 Advanced Viticulture 3 Prereq Biol 120, Hort 313. Wine and juice grape production in eastern Washington; wine and fruit physiology; climate and soils, and fruit quality.

416 Advanced Horticultural Crop Physiology 3 Prereq Biol 320. Physiological processes related to growth, development, and productivity of horticultural crops; advances in recombinant DNA technology; the impact on horticultural practices. Credit not granted for both Hort 416 and 516.

418 [M] Post-Harvest Biology and Technology 3 (2-3) Prereq Biol 320; Hort 201. Physical and physiological basis for handling and storage practices; perishable organ ontogeny and physiological disorders; post-harvest environment requirements. Field trip required. Credit not granted for both Hort 418 and 518. Cooperative course taught by WSU, open to UI students (PlSc 418).

421 [M] Fruit Crops Management 3 Prereq woody horticultural crop production, a plant physiology course. Management strategies for the efficient production and marketing of temperate-zone fruit crops. Credit not granted for both Hort 421 and 521.


435 Chemistry and Biochemistry of Fruit and Wine 3 Prereq Biol 320; MBioS 302, 303; rec analytical chemistry. Study of the chemistry and biochemistry of fruits; biochemistry and physiology of individual fruit compounds, aspects of processing including winemaking. Credit not granted for both Hort 435 and 535.

438 Ornamental Plant Production I 3 (2-3) Prereq Hort 234. Fall and winter production practices of greenhouse and nursery crops. Field trip required. Credit not granted for both Hort 438 and 538. Cooperative course taught by WSU, open to UI students (PlSc 430).

439 Ornamental Plant Production II 3 (2-3) Prereq Hort 234. Production requirements for spring greenhouse and nursery crops; garden center management considerations. Field trip required. Credit not granted for both Hort 439 and 539. Cooperative course taught by WSU, open to UI students (PlSc 431).

444 Plant Breeding I 2 Same as CropS 444.

445 [M] Plant Breeding II 2 Same as CropS 445.

480 Agricultural Issues 1 Prereq Biol 107, junior standing. Facts regarding current issues about pollution, the environment, marketing, and endangered species; formulation of position statements regarding current issues.

490 Potato Science 3 Prereq Hort 416. History, botanical characteristics, seed physiology and production, plant population, physiology of growth, and pest management; factors influencing maturation, harvest, yield, grade, bruise control, storage, and quality maintenance; economics of production and research on a global basis. Credit not granted for both Hort 490 and 590. Cooperative course taught by UI (PlSc 490), open to WSU students.

495 Research Experience V 1-4 Same as CropS 495. May be repeated for credit; cumulative maximum 12 hours.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

503 Advanced Topics in Horticulture V 1-4 May be repeated for credit; cumulative maximum 8 hours. Prereq Biol 320. Current topics and research techniques in horticulture.

505 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Graduate-level counterpart of Hort 405; additional requirements. Credit not granted for both Hort 405 and 505.

509 Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Continuous enrollment required for regularly enrolled graduate students in horticulture. Recent developments in horticulture. S, F grading.

510 Graduate Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Literature reviews and research progress reports.

512 Advanced Pomology 3 Modern concepts, research, and problems of the fruit industry as reflected by current literature; practice in critical review of scientific literature.

513 Advanced Viticulture 3 Graduate-level counterpart of Hort 413; additional requirements. Credit not granted for both Hort 413 and 513.

515 Seminar in Plant Physiology 1 May be repeated for credit; cumulative maximum 4. A cross-discipline seminar, including botany, crop and soil sciences, horticulture, plant pathology, and plant physiology.

516 Advanced Horticultural Crop Physiology 3 Graduate-level counterpart of Hort 416; additional requirements. Credit not granted for both Hort 416 and 516.

518 Post-Harvest Biology and Technology 3 (2-3) Prereq graduate standing. Graduate-level counterpart of Hort 418; additional requirements. Credit not granted for both Hort 418 and 518. Cooperative course taught by WSU, open to UI students (PlSc 518).

521 Fruit Crops Management 3 Prereq woody horticultural crop production, a plant physiology course. Graduate-level counterpart of Hort 421; additional requirements. Credit not granted for both Hort 421 and 521.
533 Plant Tissue, Cell, and Organ Culture 3 (1-6) Prereq senior standing. By interview only. Current plant tissue techniques used in research and industry to solve problems. Cooperative course taught jointly by WSU and UI (PISC 533).

535 Chemistry and Biochemistry of Fruit and Wine 3 Graduate-level counterpart of Hort 435; additional requirements. Credit not granted for both Hort 435 and 535.

538 Ornamental Plant Production I 3 (2-3) Graduate-level counterpart of Hort 438; additional requirements. Credit not granted for both Hort 438 and 538. Cooperative course taught by WSU, open to UI students (PISC 538).

539 Ornamental Plant Production II 3 (2-3) Graduate-level counterpart of Hort 439; additional requirements. Credit not granted for both Hort 439 and 539. Cooperative course taught by WSU, open to UI students (PISC 539).

570 Plant Molecular Genetics 3 Same as MBioS 530.

590 Potato Science 3 Graduate-level counterpart of Hort 490; additional requirements. Credit not granted for both Hort 490 and 590. Cooperative course taught by UI (PISC 590), open to WSU students.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

### Landscape Architecture Courses

**L A**

101 Landscape Architecture Graphics 3 (1-6) Basic mechanical and freehand drawing; use of various drafting media, two- and three-D drawing, lettering, and rendering techniques.

102 Introduction to Computer Graphics in Landscape Architecture 3 (2-3) Use of digital media applied to analysis, drafting and rendering skills; introduction to Photoshop, AutoCAD, and Illustrator.

202 [H] The Built Environment 3 Same as Arch 202.

250 Beginning Landscape Design and Construction 3 (2-3) Prereq sophomore standing; by interview only. Basic landscape architecture design and construction for small spaces.

260 History of Landscape Architecture 3 Historical development in the practice and profession of landscape architecture throughout the world, circa BC to present. Cooperative course taught jointly by WSU and UI (LARC 389).

262 Landscape Architectural Design I 3 (2-3) Prereq Arch 102 or L A 101. Basic design principles and design processes at local regional scales; integration of design graphics and verbal/visual presentations. Field trip required.

263 Landscape Architectural Design II 3 (0-6) Prereq L A 262. Basic design and graphic techniques related to solving of elementary design problems.

264 Basic Landscape Design 3 For nonmajors. Design theory and principles; site design factors; design process application; construction criteria; graphic construction communication; landform; circulation systems; plant uses.

299 Professional Work Experience: Contracting and Maintenance 1 or 2 Prereq major in pre-landscape architecture or landscape architecture. Project planned with and approved by faculty as professional work experience; written report and presentation to faculty required.

327 Theory in Landscape Architecture 3 Prereq junior standing; certified major in landscape architecture. Theories and frameworks that inform and emerge from the practices and outcomes of landscape architecture.

362 Landscape Architectural Design III 4 (2-6) Prereq L A 263, junior in landscape architecture. Professional site design processes; concentration on planting and site planning, design with urban community, ecological, and open-space projects.

363 Landscape Architectural Design IV 4 (2-6) Prereq L A 362, junior in landscape architecture. Professional site design processes; concentration on recreation facilities and site planning within residential, urban, institutional, and regional projects.

365 Landscape Architectural Construction I 4 (2-6) Prereq L A 262. Basic site planning and construction operations including grading, drainage, storm water management, and construction document techniques.


380 Ecological Applications in Design 3 (2-3) Prereq junior standing in landscape architecture or permission of instructor. Fundamental concepts of ecology as a philosophy and a science; emphasis on community, landscape restoration, and historical ecology as they relate to design. Field trip required.

399 Professional Work Experience: Office Practice 1 or 2 May be repeated for credit; cumulative maximum 4 hours. Prereq junior in landscape architecture. Planned professional work experience in design and office practice as approved by faculty; written report and presentation to faculty required. S, F grading.

425 Issues in Landscape Evolution and Design Theory 3 Prereq senior standing. Investigation of historical relationships between humans and environment; exploration of major theoretical approaches to design, planning, and management of landscapes.

450 [M] Principles and Practice of Planning 3 Prereq senior standing. History, theory, methods, and processes in regional planning; contemporary issues and professional practice.

460 Interdisciplinary Design Studio 5 (2-6) Prereq senior standing in landscape architecture. Interdisciplinary design/problem solving in an urban environment; collaboration with students in other design professions; real-world, service-based learning problems.

467 Regional Landscape Inventory and Analysis I 1-4 (2-6) Prereq BIOL 120; Geol 101 or SOILS 201. May be repeated for credit; cumulative maximum 6 hours. Application of ecological planning process for landscape inventory and analysis.

468 [M] Senior Creative Project 4 Prereq L A 475. Individually developed studio and scholarly project conducted with a faculty mentor; demonstration of advanced verbal, graphic, and written presentations required.

470 Landscape Architectural Design V 4 (1-9) Prereq senior in landscape architecture. Advanced group and individual landscape architectural design and planning projects; professional applications of site design theory and design processes.

475 Senior Project Proposal 2 Prereq senior in landscape architecture. Program planning for senior project. S, F grading.

477 Landscape Applications of Geographic Information Systems 3 (1-6) Prereq L A 467. GIS-based spatial data development and analysis skills in an applied, real-world context.

480 Professional Practice 2 Prereq senior in landscape architecture. Current office practices, design and construction management techniques; introduction to construction contract legal requirements within the practice of landscape architecture. Cooperative course taught jointly by WSU and UI (LA 358).

485 [M] Senior Creative Project I 4 (0-8) Prereq L A 425. Individually developed studio or scholarly project conducted with faculty advisor; collection, analysis, and interpretation of project information.

486 [M] Senior Creative Project II 4 (0-8) Prereq L A 485. Individually developed studio or scholarly project conducted with faculty advisor; synthesis of information, solution development, and documentation.

491 Topics in Design 3 Prereq junior standing.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

510 Philosophy and Theory in Landscape Architecture 3 Prereq graduate standing. Natural and cultural processes that characterize the interaction between humans and the landscape.
511 Methodology and Communication in Landscape Architecture 3 Prereq graduate standing. Methods of investigation and analysis of tools used for communication in landscape architecture research.

520 The Northern Rocky Mountain Regional Landscape 4 (2-4) Prereq graduate standing. Biophysical characteristics of the Northern Rocky Mountain regional landscape.

521 Cultural Interpretation of the Regional Landscape 4 (2-4) Prereq graduate standing. Cultural characteristics of the Northern Rocky Mountain regional landscape.

525 Landscape Modeling 3 (1-6) Prereq L.A 477. Visual and cartographic landscapes modeling through application of GIS and visualization technologies to landscape changes.

530 Philosophies and Theories of the Built Environment 3 Prereq graduate standing in Arch/I D/L A. Same as Arch 530.

540 Research Methods 3 Same as Arch 540.

550 Design Applications 2 Prereq Arch/I D/L A 530. Same as Arch 550.

600 Interdisciplinary Seminar II 3 Prereq Arch/I D/L A 560. Same as Arch 561.

601 Interdisciplinary Seminar III 3 Prereq Arch/I D/L A 560. Same as Arch 561.

600 Special Projects or Independent Study 1-6. Prereq graduate standing. Methods of investigation and related employment before entering WSU. All students majoring in hospitality business management from a two-year program should have made appropriate academic progress before transferring. In addition, the student should have 400-500 hours (one summer) of gainful employment in the hospitality industry. However, it is strongly advised that the student utilize both summers in related employment before entering WSU.

Certification Requirements

Hospitality Business Management (HBM) Major Requirements

To be eligible for certification as a major in hospitality business management, students must have earned at least 60 semester hour of credit with a C or better in the following courses: Acctg 230, 231; B Law 210; MgtOp 215; Econ 101, 102; Engl 101; Math 201; Math 202 or 205; MIS 250, and have a WSU cumulative GPA of 2.5. All students must apply for certification online. Students are eligible to petition for consideration of alternative criteria.

Transfer Students

A student planning to transfer to hospitality business management from a two-year program should have made appropriate academic progress before transferring. In addition, the student should have 400-500 hours (one summer) of gainful employment in the hospitality industry. However, it is strongly advised that the student utilize both summers in related employment before entering WSU.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

HOSPITALITY BUSINESS MANAGEMENT

By the completion of 60 hours of credit, all students must have completed English, math, and 100-200-level CBE core courses with a C or better. Enrollment in 300-level CBE business and HBM courses is restricted to those students who have met these requirements and certified as HBM majors.

All students majoring in hospitality business management must complete 50% of their course work outside of the College of Business and Economics. Nine hours of economics and four hours of MgtOp 215 are counted as outside of the CBE to meet this 50% rule.

Residence Requirements: 1) At least 50% of business core and major specialization course requirements must be taken at WSU; 2) At least nine 300-400-level business, economics, or hospitality courses must be taken in residence at WSU; and 3) The last 30 hours of course work must be taken at WSU.

Transfer, correspondence, and independent study credit (within University limits on these credits) may count toward the 120 hours required for the degree and/or satisfy requirements other than major courses. Only general elective courses that are not GERs, not core/major requirements, and not a course offered by the CBE may be taken pass, fail.

A senior project is required for Honors students.

School of Hospitality Business Management

www.cbe.wsu.edu/hbm/index.html

Todd 470
509-335-5766

Director, W. T. Umheirt; Adjunct Professor, W. Maynard; Ivar Haglund Distinguished Professor, D. Reynolds; Associate Professors, K. Kendall, M. C. Paxson; Assistant Professors, D. Garsky, H. J. Kim, N. Swanger, Interim Director Swiss Center, M. Viergegge; Culinary Educator, G. Fritz; Lecturers, M. O’Fallon, L. Benson; Professors Emeriti, P. Díaz, L. Kreck, D. Rutherford, D. Smith; Academic Coordinator and Instructor, K. Bennett.

The school provides specialized instruction dealing with the major organizational, managerial, financial, and technical issues relative to the operation of hospitality businesses. The school prepares graduates for managerial responsibilities in hospitality operations both here and abroad. The curriculum provides a sound business education on the fundamental features of operating hotels, restaurants, clubs, and managed service operations. It includes courses in general education, business, and hospitality management. The program of study leads to a degree of Bachelor of Arts in Hospitality Business Management.

First Year

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<td>Econ 101 or 102 [S]</td>
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<td>GenEd 110 [A]</td>
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<td>HBM 131</td>
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<td>Science [B,P,Q]</td>
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<td>Econ 101 or 102 [S]</td>
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<td>HBM 158</td>
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<td>MIS 250</td>
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<td>Oral Com [C]</td>
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Second Year

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<td>Biological Sciences [B] [GER]</td>
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<td>GenEd 111 [A]</td>
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<td>Math 202 [N] or 205 [N]</td>
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<td>Acctg 231</td>
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<tr>
<td>Arts &amp; Humanities [H,G] [GER]</td>
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<tr>
<td>B Law 210</td>
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<td>HBM 258 or 280</td>
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<td>MgtOp 215</td>
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Third Year

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<td>Engl 402 [W] or 403 [W] [GER]</td>
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<td>Fin 325</td>
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<td>HBM 358</td>
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<td>HBM Elective</td>
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<td>MgtOp 301</td>
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<td>Complete Writing Portfolio</td>
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<td>HBM 381 [M]</td>
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<td>HBM 491</td>
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<td>MgtOp 360</td>
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<td>Physical Sciences [P] [GER]</td>
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<td>Soc or Psych [S,K] [GER] (Soc 101, 102, 150 preferred)</td>
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Fourth Year

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<td>HBM 494 [M]</td>
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<td>Intercultural [I,G,K] [GER]</td>
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<td>Tier III Course [GER]</td>
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1 For a total of 7 hours of Biological and Physical Sciences.
Minors

Hospitality Business Management
To be eligible to certify in the hospitality business management minor, students must have a cumulative GPA of 2.5. A minor in hospitality business management requires at least 16 hours of credit, 8 of which must be 300-400-level, with an overall GPA of at least a 2.5 in the required courses. Courses for the minors may not be taken pass, fail. A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100- or 200-level only. All other course work must be taken in residence at WSU. The director must approve deviations from the stated requirements: Hospitality Business Management: HBM 131, 182, 280, 301, 381, 435.

A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100- or 200-level only. All other course work for the minor must be WSU course work.

Description of Courses

Hospitality Business Management Courses

HBM

131 Introduction to Hospitality Business Management 3 Historical development and organizational structure of the hospitality service industries. Cooperative course taught by WSU, open to UI students (RcMgt/Rec 181).

158 Basic Restaurant Operations and Service 3 Prereq HBM 131. General restaurant operating concepts, dining room service procedures and food safety; sanitation principles.

182 Introduction to Industry Experience 1 Preparation for work in hospitality/business organizations; resume writing, interview skills, use of Career Services, career dress.

201 Quantity Food Production 3 Principles of menu writing, sanitation and food preparation applied to management of quantity food production and service.

235 Travel, Society and Business 3 Underlying principles and practices in domestic tourism. Cooperative course taught by WSU, open to UI students (RRT 236/Rec 235).

258 Fundamentals of Cooking and Dining Room Service 2 (1-3) Practical applications of cooking techniques, dining room service, and restaurant operations including safety, sanitation, flow of goods and industry trends.

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

280 Lodging Systems and Procedures 3 Management functions relating to the planning and operational policies of various hotel departments.

284 Managed Services 3 Management systems of the segment of the hospitality industry relating to contract and self-operated management companies.

298 Internship Experience V 3-12 Prereq HBM 131. Cooperative educational internship with a hospitality business, government or nonprofit organization. May be repeated for credit; cumulative maximum 12 hours. S, F grading.

301 Introduction to Conventions and Meetings Industry 3 Prereq junior standing. Overview of industry, including components, interrelationships, economics and theory.

310 Hospitality Industry Financial Control 3 Prereq Acctg 231; junior standing. Internal control through financial and accounting systems for hotels and restaurants.


320 Industry Experience 1 Prereq hospitality business management major; senior standing: HBM 220. Students work in various hospitality operations for 1,000 hours; work performance must be documented. Two supervised reports required. S, F grading.

350 Beverage Management 3 Prereq junior standing; must be 21 years of age. Beverage operations; detailed study of wines and spirits; consideration of social impacts such as trends in consumption.

356 Food and Beverage Systems Design and Analysis 3 Prereq FSHN 120; HBM 280. Management theory, problems, and cases in food and beverage operations, work methods; sanitation; research.

357 Food and Beverage Systems Control 3 Prereq Acctg 231; Cpt S 105. Problems encountered in the management of food and beverage operations such as control and forecasting.

358 Foodservice Systems and Control 3 Prereq Acctg 230, FSHN 120, HBM 258, hospitality business management major. Operational control processes, control systems, and cost analysis procedures in food and beverage management.


375 Club Management 2 Prereq junior standing. The identification of managerial problems unique to club operations and their potential solutions.

381 [M] Hospitality Management and Organization 3 Prereq HBM 131. Advanced management methods and concepts utilized in the administration of hospitality service industries. Cooperative course taught by WSU, open to UI students (RRT 381/Rec 382).

382 Multi-Unit Management 3 Prereq HBM 381. Concepts and principles involved in managing multiple restaurant units; finance, marketing, human resources, operations, and financial management. Special attendance hours may be required.

383 Meeting and Convention Management 3 Prereq HBM 301. Theory and practice of meeting/convention/event management, including goals, organization on- and off-site operations, evaluation.

386 Applied Industrial Relations 2 Prereq junior standing. Labor relations; history, organization, and elections of bargaining agents, negotiation and administration of contracts.

435 International Tourism 3 International and domestic tourism; effects of tourism on the society.

440 Association Management 3 Prereq HBM 301. Theory, organization, structure and management of voluntary associations; economics and role in convention industry.

450 Convention Facilities Management 3 Prereq HBM 301. Politics, setting, design, construction, organization and management of public assembly facilities, including private structures.

458 Advanced Culinary Management and Catering 3 Prereq HBM 358. Advanced kitchen/dining room management with emphasis on culinary skill development and the planning and administration of catering events.


484 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

491 Operational Analysis 3 Prereq Acctg 231; MgtOp 215; Fin 325. Using management tools in analyzing operational effectiveness of hotel and restaurant organizations.

493 Service Applications in E-Commerce 3 Prereq junior standing. Design and management of the service delivery processes in e-commerce businesses.

494 [M] Service Operations Management 3 Prereq junior standing. Design and management of service delivery systems through operations management topics from a service perspective.

495 Case Studies and Research 3 Prereq HBM 358, 480, 491. Use of the case method and computerized statistical programs in the analysis of administrative practices of organizations.

496 Seminar V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq junior standing. Selected topics.

497 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Topics of special interest within the area of hotel and restaurant administration.

498 Hospitality Business Management Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.
535 International Tourism Strategy and Planning 3 Tourism components; social, economic, and cultural effects on societies; the management of tourism businesses.

580 Hospitality Services Marketing 3 Prereq Mktg 505. Services marketing concepts and principles applied to hospitality organizations; strategies to market services and control quality.

581 Services Management 3 Prereq MgtOp 501. Design and management of service systems in hospitality operations; control of customer interaction, personnel activities and inventory.

597 Special Topics 3 Strategic business policy, concepts, and practices in hospitality management.

600 Special Projects or Independent Study Variable credit. S, F grading.

Department of Human Development

hd.wsu.edu/
Hulbert 311 509-335-8439


Students seeking a bachelor of arts degree in this department focus on human development across the lifespan as it occurs within the family, and is linked to a variety of contexts within communities. The program centers on understanding the complexity of physical, social, cognitive, and affective individual development with emphasis on development within the family. The curriculum examines human and family development across the lifespan (i.e., child, adolescent, younger and older adults). Opportunities are also available to become state certified as a teacher in preschool to third grade or as a family and consumer sciences teacher in junior or senior high school.

In addition to the teaching certifications, the department offers four Specialty areas: early child development with emphasis on development of young children; family and individual development; the ability to critically select, evaluate, and utilize information to understand and benefit individuals and families; 4) writing, listening, and speaking appropriate for human development related occupations; 5) application of human development knowledge and skills in professional settings.

Students completing a human development degree are required to complete a Certified or Approved Certificate from another department. A minor or certificate of study should be selected in consultation with a human development faculty advisor, preferably by the end of the third semester. The Bachelor of Arts in Human Development requires a cumulative GPA of 2.5 or better in all H D courses and other courses accepted for the H D core. Students must achieve a cumulative GPA of 2.5 or better in courses used to fulfill requirements for the Human Development and Early Childhood minors.

The human development degree provides preparation for graduate work leading to teaching, research, counseling, or administrative positions in social service, resource management, or family therapy.

The department also offers a Master of Arts degree in Human Development. Areas of focus are early childhood, parent-child relations, youth-at-risk, applied developmental science, and community collaborative research. This degree prepares graduates for leadership positions in human service professions, entrance to doctoral programs, and research/teaching careers in higher education. More information is available from the graduate school.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

HUMAN DEVELOPMENT—FAMILY AND CONSUMER SCIENCES OPTION (126 HOURS)

At least 40 of the total hours required for this bachelor’s degree must be in 300-400-level courses.

First Year

First Term Hours
Engl 101 [W] (GER) 3
FSHN 130 [B] (GER) 3
GenEd 110 [A] (GER) 3
H D 201 3
Math Proficiency [N] (GER) 3

Second Term Hours
GenEd 111 [A] (GER) 3
H D 202 3
H D 204 3
Physical Sciences [P] (GER) 3
Psych 105 [S] (GER) 3

Second Year

First Term Hours
AMT Elective 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
ComSt 102 [C] (GER) 3

Second Term Hours
Engl 201 [W], 301 [W], 302 [W] (GER) 3
H D 203 3
T & L 300 1

Third Year

First Term Hours
Ag Ed 440 2
AMT Elective 3
H D 350 3
H D 479 3
T & L 302 2
T & L 303 2
T & L 317 2

Complete Writing Portfolio Hours
Ed Psych 402 2
H D 400 3
ED 409 3
H D 480 3
Intercultural [I,G,K] (GER) 3
T & L 400 2

Fourth Year

First Term Hours
H D 320 3
H D 410 3
T & L 328 2
T & L 404 2
T & L 445 2
T & L 478 2
Tier III Course [T] (GER) 3

Second Term Hours
H D 407 8
T & L 415 8

1 Courses are only offered during this semester each year.
2 Chem 101 strongly recommended.
3 Select two from: AMT 215, 216, 317.
4 Econ 101 [S] or 102 [S] strongly recommended.
5 T & L 302 and 303 must be taken concurrently.
6 T & L 400 and EdPsy 402 strongly recommended concurrently.

HUMAN DEVELOPMENT—GENERAL OPTION (120 HOURS) ☑ FYDA

First Year

First Term Hours
Arts & Humanities [H, G] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Social Sciences [S, K] (GER) 3
Science [B, P, Q] (GER) 3

Second Term Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3
H D 201 3
H D 204 3
**Second Year**

**First Term**
- Biological [B] Sciences (GER) 3 or 4
- H D 203
- H D Elective
- Intercultural [I, G, K] (GER)
- Math Proficiency [N] (GER)

**Second Term**
- H D 202
- H D 310
- Minor Elective
- Physical [P] Sciences (GER) 3 or 4
- Elective

**Third Year**

**First Term**
- H D Elective
- H D Emphasis 320 or 420 [M]
- Minor Elective
- Electives
- Complete Writing Portfolio

**Second Term**
- Minor Elective
- Elective

**Fourth Year**

**First Term**
- H D 497
- H D Elective
- Minor Elective
- Tier III Course [T] (GER)
- Elective

**Second Term**
- H D 410 [M]
- H D 446 or 498
- Minor Elective
- Electives

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**HUMAN DEVELOPMENT—PRESCCHOOL THROUGH THIRD GRADE (P-3) CERTIFICATION OPTION (150 HOURS)**

**First Year**

**First Term**
- Engl 101 [W] (GER)
- Gen Ed 110 [A] (GER)
- H D 201
- Psy 105 [S, K] (GER)
- Science [B, P, Q] (GER)

**Second Term**
- ComSt 102 [C] (GER)
- Gen Ed 111 [A] (GER)
- H D 202
- H D 204
- Hist 150 [S, D] (GER)

**Second Year**

**First Term**
- Biological Sciences [B] (GER) 3 or 4
- Engl 201 [W] (GER)
- Gen Ed 110 [A] (GER)
- H D 341
- Math 251
- Mus 153 [H] (GER)

**Second Term**
- H D 302
- H D 342
- Math 252 [N] (GER)
- Physical Sciences [P] (GER)
- T & L 300

**Third Year**

**First Term**
- Mus 388
- T & L 305
- T & L 306
- T & L 307
- T & L 320
- T & L 402

**Second Term**
- Complete Writing Portfolio

**Fourth Year**

**First Term**
- H D 446
- Intercultural Studies [I, G, K] (GER)
- T & L 403
- T & L 413
- T & L 445

**Second Term**
- H D 410
- H D 449
- H D 482
- Sp Ed 409
- Tier III Course [T] (GER)

**Fifth Year**

**Fourth Term**
- T & L 415 (Directed Teaching)

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2. FSHN 130 [B] is strongly recommended.
3. Courses are only offered during this semester each year.
4. During the freshman year, students must pass the Mus 388 competency exam or take Mus 153, qualify to enroll in Math 251, and begin the University Writing Portfolio.
5. H D 446 requires a half-day each day, 5 days a week for a semester and can be put into the schedule anytime after taking H D 342.

**Minors**

**Aging**

The Department of Human Development administers the Program in Aging. A minor in aging is available to all WSU undergraduate students, including human development majors. Students may opt to earn a certificate in gerontology in conjunction with completing requirements for the Program in Aging. Refer to criteria outlined in the Program in Aging and contact Margaret Young at 509-335-9203 or e-mail youngm@mail.wsu.edu.

**Early Childhood Education**

A minor in early childhood education requires completion of H D 201, 202, 302, 341, 342, 449, and 482. Completion of this set of courses also provides a supporting endorsement in early childhood education for students completing a major in elementary education.

**General Human Development**

To minor in Human Development, students may select a developmental or a family focus. The minor requires 18 hours, of which must be in 300-400-level courses. The minor in Human Development requires H D 101; H D 320 or 428; H D 201, 202, 203, or 408; H D 204, 301, 302, or 550; and 6 additional credit hours from any other 300-400-level H D courses.

**Certificates**

**Adolescence/Aging/Early Childhood Development and Care/Family Studies**

The department of Human Development offers certificates in adolescence, aging, early childhood development and care, and family studies. Each certificate reflects a high standard of training and experience in a specific area of human development. Non-human development majors are required to complete any prerequisites for the internship requirement.

The requirements for each certificate include 6 hours in HD core courses that support the area of certification, 15 hours in required and optional courses, and 4 hours of internship that reflect the area of certification.

Students must maintain an overall GPA of 2.5 in those courses that count toward the certificate.

For specific requirements in any of these certificates, contact the department of Human Development.
Description of Courses

Human Development Courses

H D

101 [S] Human Development Across the Lifespan 3 Overview of lifespan development from a psychosocial ecological perspective; individuals, families, organizations, and communities and their interrelationships.

201 Human Development—Prenatal Through Age 8 3 In-depth examination of growth and development from the prenatal period through age 8 in context of family, community and society.

202 Human Development—Middle Childhood Through Adolescence 3 Prereq H D 101 or 201. In-depth study of school-age child and adolescent; observation and volunteer experience; theories and their application.

203 Human Development: Adulthood Through the Older Years 3 In-depth study of individual development from young adulthood through later years within the social context of family and community.


205 [C] Communication in Human Relations 4 (3-2) Developing an understanding of human behavior and learning skills in communication and leadership.

275 Special Topics in Human Development: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

300 Child Abuse and Neglect 3 Prereq 6 hours of social sciences. Overview of causes, identification, reporting, and treatment of children who are abused and/or neglected.

301 Families in Crisis 3 Prereq 6 hours of social sciences. Examination of the nature and course of family crisis, using a family systemic approach, including principles used in intervention strategies.

302 Parent-Child Relationships 3 Prereq 6 hours in social sciences. Parenting in contemporary society with focus on reciprocity of parent-child relationships and diversity of families.

304 Intimate Relationships Across the Life Span 3 Prereq 6 hours of social sciences. An examination and analysis of intimate relationships across the life span including friend, family, and partner relationships.

305 Gerontology 3 Prereq 6 hours of social sciences. Examination and analysis of social context of aging including public policy, implications of demographic shifts, and quality-of-life issues.

310 [M] Research Approaches to Human Development 3 Prereq 6 hours of H D; junior standing. Overview of research techniques in human development; methods of evaluating research products.

320 [M] Resource Management and Problem Solving 3 Prereq 6 hours of social science. Styles of managing material, human and environmental resources with families; various approaches to problem solving with individuals and families.

334 [S] Principles of Community Development 3 Prereq social science course; sophomore standing. Same as CRS 334.

340 Development in Context 3 Prereq 6 hours in social sciences. In-depth study of contextual influences (i.e., culture, place, family, school) on early years of human development; application of multi-cultural perspectives/practices.

341 Learning and Guidance in Early Childhood 3 Prereq H D 101, 201, or 340; 3 additional hours of social science. Theories of child guidance; understanding of child behavior; strategies and techniques for effective group and individual guidance of young children.

342 Curriculum for Early Childhood Programs 4 (3-3) Prereq H D 101, 201, or 340; 3 additional hours of social sciences; Rec H D 341 or 345. Planning and implementation of developmentally appropriate curriculum for use in programs serving young children.

345 Managing Behavior in Early Childhood Settings 3 Prereq 6 hours of social science. Principles and strategies for management of children’s individual and group behavior in early childhood settings; professional and ethical responsibilities.

346 Middle Childhood and School Age Care 3 Prereq 6 hours of social science. Understanding development in middle childhood (approximately 5-12 years); understanding and planning school age care programs.

350 [S,D] Diversity in Contemporary Families 3 Prereq 6 hours of social sciences. Preparation for students in human service professions to work with ethnic, cultural, economic, language, gender, religious and other types of diversity.

360 Death and Dying 3 Prereq 6 hours of social sciences. Death and dying throughout life and in different contexts; manner of death, grief, and legal and ethical considerations.

403 [T] Families in Poverty 3 Prereq 6 hours of social sciences; junior standing; completion of one Tier I and three Tier II courses. Examining poverty in US and globally; description of groups most often poor; identification of effective solutions and successful interventions.

406 Work and Family 3 Prereq 6 hours of social sciences. Issues related to work and family; workplace environments; fostering effective policy responses to family needs; role of work-family coordination. Credit not granted for both H D 406 and 506.

407 Student Teaching for Family and Consumer Sciences V 4-16 Prereq T & L 415 or c/c; make application and pay certification fees; complete all other coursework for degree and teacher certificate; receive fingerprinting clearance from Washington State Patrol, FBI, and Office of Professional Practices; maintain 2.5 GPA overall and in endorsement area and professional core courses. Placement by interview only. Supervised teaching in public schools, including seminars reflecting on effective teaching. S, F grading.

408 Advanced Adolescent Development 3 Prereq 6 hours of social sciences. In-depth examination of theories and research; developmental issues and prevention and intervention programs for school-aged child and adolescent.

409 Current Consumer Issues 3 Prereq 6 hours of social sciences. Analysis of the consumer role; ecological perspective; interaction of consumers, government, market; effects on communities, families, and individuals.

410 [M] Public Policy Issues Impacting Families and Individuals 3 Prereq 9 hours of social sciences; junior standing. Family policy issues in a changing society; ecological perspective; relationship of public policy to communities, organizations, families, and individuals.

412 Adult Development and Learning 3 Prereq 6 hours of social sciences. Understanding growth and change in adulthood with application of effective learning and teaching practices with adult populations.


423 Fundamentals of Participatory Research 3 Prereq sophomore standing, two social science courses. Same as CRS 423. Credit not granted for both H D 423 and 523.

428 Housing America’s Families 3 Housing, furnishings, and equipment as they influence family well-being, and families’ housing choices as affected by social, psychological, economic, technological, and political factors. Cooperative course taught by UI (FCS 428), open to WSU students.

430 Professional Skills for Working with Individuals and Families 3 Prereq 6 hours of social sciences; junior standing. Development of skills important for effective human service professionals: communication, group dynamics, supervision, leadership, ethical behavior, cultural sensitivity, and others.

446 Practicum in Early Childhood Programs V 3 (0-9) to 6 (0-18) May be repeated for credit; cumulative maximum 12 hours. Prereq H D 341 or 345; HD 342; placement by interview only. Teaching in department’s child development laboratory; emphasis on skill building in working with diverse groups and building partnerships with families.
495 Instructional Practicum 3 Prereq. 6 hours of social sciences. Organization, administration, and management of early childhood programs; finance, program development, service delivery, personnel concerns, resource development, and evaluation.

499 Special Problems V 1-4 May be repeated for credit. Prereq. by interview only. S, F grading.

510 Proseminar in Human Development I Introduction to human development profession, departmental faculty and their research, WSU resources, conducting research, writing thesis; preparation for field placement.

511 Theory and Substance of Human Development I 3 Prereq. 6 hours of social sciences. Human development theories; application to lifespan development, cultural variations, resources, problem solving, interaction of families and individuals with other systems.

512 Theory and Substance of Human Development II 3 Prereq. H D 511. Continuation of S11; theory and application to concepts and issues in human development.

513 Research Methods in Human Development I 3 Prereq. graduate standing. Introduction to process of research and methods in human development; techniques of research, data collection, and data analysis procedures; Cooperative course taught by WSU, open to UI students (FCS 521).

514 Research Methods in Human Development II 3 Prereq. H D 513. Integration of formal decision making into the social science research process; procedures appropriate for experimental, quasi-experimental and field research. Cooperative course taught by WSU, open to UI students (FCS 522).


520 Adolescence 3 Prereq. graduate standing. In-depth examination of theories and research, developmental issues and prevention and intervention programs for school-aged children and adolescents.

523 Fundamentals of Participatory Research 3 Prereq. graduate standing, two social science courses. Same as CPR 523. Graduate-level counterpart of H D 423; additional requirements. Credit not granted for both H D 423 and 523.

535 Program Development in Child and Family Studies 3 Prereq. graduate standing. Analysis and development of program delivery systems, curricula and evaluation models. Cooperative course taught jointly by WSU and UI (FCS 554).

540 Effective Intervention Programs 3 Prereq. H D 530. Innovative effective prevention and intervention programs from theoretical, applied, and outcome evaluation perspectives.

550 Seminar on Family Relationships 3 Prereq. graduate standing. Survey of family studies topics and issues examined from a research point of view.

558 Parent-Child Relationships 3 The reciprocal interactions among family members will be examined; theoretical perspectives and empirical findings will be explored in terms of implications for education and practice.

560 Seminar in Child Development 3 Prereq. graduate standing. Survey of literature on selected areas in child development; discussion of research and application related to current issues and trends.

561 Advanced Curriculum for Early Childhood Programs 3 Opportunity to explore curriculum practices in early childhood education; discussion, evaluation and adaptation of curricula based on current research.

562 Administration and Leadership in Programs 3 Examining early childhood administrator role; analysis and application of research to administration, developing concrete skills necessary for successful administration.

580 Families, Community and Public Policy 3 Prereq. H D 513, 514, or approved graduate research methods course. Analysis of family policy research; role of family policy research in public policy and knowledge building processes. Cooperative course taught by WSU, open to UI students (FCS 580).

586 Special Topics in Human Development V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq. graduate standing. Assessment and evaluation of families and children.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

Humanities

libarts.wsu.edu/english/}

Avery 202
509-335-2581

P. Brians, Coordinator

The humanities curriculum consists of a series of interdisciplinary courses designed to introduce students to some of the basic concepts of civilization through the study of representative masterpieces of literature, music, art, and related fields. The courses numbered 101, 302, 303, and 304 provide a survey of western civilization from ancient times to the modern era. English majors may elect 300-400-level humanities courses within the concentration in World Literature/Humanities.

Using Humanities courses as part of General Studies-Humanities Major

WSU Pullman students who are interested in the interdisciplinary study of culture can use a number of the courses listed below as a minor concentration in a degree program in General Studies-Humanities. A recommended sequence would include at least

211
three from Hum 101, 302, 303, 304, which provide students a survey of arts and thought from ancient times to the present. Any of the other humanities courses, including the study-abroad option, could be used as well. Students at urban campuses who want a coherent minor concentration in humanities should consult their advisors.

Description of Courses

Humanities Courses

Hum

101 [H] Humanities in the Ancient World 3 Integrated humanities: literature, philosophy, history, and art of the ancient world.

103 [H] Mythology 3 The theory of mythology and use of myths in art, literature, and music; Graeco-Roman and one other.

130 [H] Introduction to Foreign Literature 3 Same as For L 130.


132 [H] Masterpieces of French/Francophone Literature in Translation 3 Same as Fran 130.

133 [H] Masterpieces of German Literature In Translation 3 Same as Ger 130.

134 [H] Masterpieces of Peninsular Spanish and Latin American Literature In Translation 3 Same as Span 130.

135 [H] Masterpieces of Russian Literature in Translation 3 Same as Rus 130.

198 [H] Humanities in the Ancient World: Honors 3 Integrated humanities: literature, philosophy, history, and art of the ancient world. Open only to students in the Honors College.

221 Topics in Humanities—Study Abroad 3

302 [H,M] Humanities in the Middle Ages and Renaissance 3 Integrated humanities; exploring great works and themes of the European Middle Ages and Renaissance, including art, architecture, music, philosophy, and literature.

303 [H,M] Reason, Romanticism, and Revolution 3 Integrated humanities; literature, philosophy, music, art, 1700 to World War I; revolutionary changes which led to the 20th century.

304 [H] Humanities in the Modern World 3 Literature, philosophy, art, architecture, film, music since World War I; major works reflecting influential movements and concerns of the modern world.

335 [H] The Bible as Literature 3 Same as Engl 335.

338 Topics in Humanities 3 May be repeated for credit; cumulative maximum 6 hours. Interdisciplinary, international topics in the humanities (art, architecture, music, literature, philosophy, film).

340 [H] American Foundings 3 Examination of the differing assumptions about the nation in such founding texts as The Federalist Papers and Emerson's Essays.

350 [G] Sacred Texts and Cultures of World Religions 3 Sacred and literary texts, spiritual practices, and cultural origins and values of six world religions traditions from an intercultural perspective.

410 [T] Love in the Arts 3 Prereq completion of one Tier I and three Tier II courses; one college-level literature or art history course. Concepts of love around the world and in history through literature, art, music, dance, and theater.

450 [T] Representations of the Holocaust 3 Prereq completion of one Tier I and three Tier II courses. How the Holocaust is represented and enters public memory through documentaries, memoirs, works of fiction, poetry, film, museums and monuments.

499 Special Problems 3, 4 May be repeated for credit. S, F grading.

Interdisciplinary

Description of Courses

Interdisciplinary University Courses Courses

Univ

100 /101 College Majors and Career Choice 1 Application of career development principles to development of professional opportunities; includes comprehensive career self-assessment and analysis of workplace trends.

490 McNair Preparation for Graduation School 1 Prereq junior standing. Preparation for McNair Scholars and others for graduate study. No credit earned toward degree; not qualified for financial aid. May be repeated for credit; cumulative maximum 2 hours. S, F grading.

590 Preparation for College Teaching 2 Prereq graduate standing/TA appointment. Cross-discipline instructional development for graduate teaching assistants; course development teaching techniques, University policies and procedures. S, F grading.

591 Interdisciplinary Studies 1 Contemporary issues in interdisciplinary education and research. Open to all interested students. May be repeated for credit.

592 Interdisciplinary Ethical Issues in Graduate Study 3 Prereq graduate standing. Research and discussion of ethical issues arising in graduate study across disciplinary lines.

597 Preparing the Future Professoriate 2 Prereq doctoral student standing. Understanding and contextual knowledge of the professoriate and issues facing higher education.

598 Interdisciplinary Seminar 1 Prereq Univ 591. Seminar on theory and practice of advanced interdisciplinary doctoral study. May be repeated for credit; cumulative maximum 3 hours.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For Interdisciplinary PhD only. S, F grading.

Department of Interior Design

www.id.wsu.edu
kruegel 51
509-335-1233

Professor and Chair, N. Blossom; Professor, J. Asher Thompson; Associate Professors, N. Brown, R. Krikac, J. Turpin; Assistant Professors, T. Johansen, M. Melcher.

The program is based on a concern for human beings and the creation of interior settings that support human activities and values. Graduates of the Program in Interior Design should be able to think creatively and solve problems in a professional manner. Above all, an interior design education helps the student to develop intellectual curiosity, allowing the graduate to continue to develop as a person and as a designer throughout life. Upon completion of the program, students are able to analyze information, evaluate issues, and set priorities while generating creative design solutions for projects of a complex scale.

The interior design program is the only program in Washington accredited by the Foundation for Interior Design Education Research (FIDER) and offers a Bachelor of Arts in Interior Design. The program provides the common body of knowledge related to interior design as recognized by FIDER. Beginning fall 2000, qualified students may choose to enter an articulated B.A./M.A. degree program within the senior year that leads to a master's degree completed in the first year of graduate study.

Students wishing to certify into the Interior Design program must complete a minimum of 45 semester hours including the following six courses: Arch 101, 103, 1 D 101, 102, 201, and 203, or transfer equivalents as approved by the department. The successful completion of a portfolio review is required upon completion of ID 203 to become a certified major in interior design. The review is set up as an interview process between each student and a faculty panel. During the interview, students are expected to present completed projects and explain, defend, and justify their design solutions to the faculty.

Students complete their final year at WSU Spokane at the Interdisciplinary Design Institute. The institute represents a unique collaboration among the design disciplines with students and faculty from interior design, architecture, construction management, and landscape architecture working and learning together in a team-oriented, urban environment. As graduates, students have the ability to take the initiative, make critical judgments of their own designs, as well as others, and operate within a team context; all of which contributes to their future success as professionals.
Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

INTERIOR DESIGN
(120 HOURS) FYDA

The interior design program offers a balanced exposure to art, architecture, and humanities. Upper-division coursework is taught at WSU Spokane, where students participate in an interdisciplinary design studio experience. This is an integrated studio with participation from interior design, architecture, construction management, and landscape architecture.

First Year
First Term Hours
Arch 101 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
I D 101 3
Math Proficiency [N] (GER) 1
Second Term Hours
Arch 103 3
Arts & Humanities [H,G] (GER) 2
GenEd 111 [A] (GER) 3
I D 102 3
Intercultural [I,G,K] (GER) 3
Tier I Science [B,P,Q] (GER) 4

Second Year
First Term Hours
Communication Proficiency [C] (GER) 3
I D 205 4
Physical Sciences [P] (GER) 3 or 4
Psych 105 [S] (GER) 3
Second Term Hours
Biological Sciences [B] 1
F A 201 or Art & Humanities Elective 3
I D 202 3
I D 203 4
I D 215 3

Third Year
First Term Hours
Junior Year in Spokane
I D 311 or 350 3
I D 321 4
I D 322 1
I D 325 3
I D 396 3
Complete Writing Portfolio
Second Term Hours
Arts & Humanities [H,G], or Social Sciences [S,K] (GER) 3
I D 312 2
I D 333 4
I D 350 3
I D 397 2

Fourth Year
First Term Hours
Senior Year in Spokane
Arch 472 2
I D 415 3
I D 425 5
Supportive Electives 2
Tier III Course [T] (GER) 2
Second Term Hours
I D 392 3
I D 426 5
I D 460 3
I D 490 6 or supportive elective 6

1 Math 205 or 210 is suggested.
2 F A 201, 202, Arch 220, 221 are suggested.
3 Students must take 3 credits of [B] science and 3 credits of [P] science and a 1 credit lab. The other 3 credits to satisfy the GER requirement can be [B,P, or Q].
4 Portfolio review takes place after completion of this course.
5 Supportive electives approved by faculty advisor; transfer interior design hours as approved by the department.
6 Highly recommended as a summer option between junior and senior year.

Description of Courses

Interior Design Courses

I D
101 Design Issues 3 Sensory awareness as a design determinant; introduction to basic design elements in problem identification and solving processes.
102 Basic Environmental Design Studio 3 (0-6) Prereq I D 101. Application of basic design elements to the exploration of space and form. Credit not granted for both I D 102 and I D 200.
103 Transfer Studio 6 (3-6) An intensive studio introducing basic elements and principles of design; basic technical skills (drafting, sketching, rendering, model building).
201 Perception and Communication I Laboratory 4 (1-9) Prereq Arch 101, 103; I D 101, 102, or 103 c/. Application of design concepts into micro environments; design vocabulary and skill development.
202 [H] The Built Environment 3 Same as Arch 202.
205 Visual Communication 3 (2-2) Course focuses on the various methods in which the interior designer may choose to visually communicate design concepts.
211 History of Design I 3 Prereq I D 211 or by permission only. History of design forms, interiors and furnishings from prehistoric to the Industrial Revolution.
215 Materials and Components of Interior Design 3 Characteristics and properties of structural and non-structural interior materials.
250 [H] History of Interiors 3 A survey of interior environments, spatial distributions, furnishings, and related design elements from ancient Egypt to the 18th century.
275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.
276 Special Topics: Study Abroad V 1-15. May be repeated for credit. S, F grading.
277 Interior Design Field Trip 1 May be repeated for credit; cumulative maximum 2 hours. Prereq freshman standing. Selected issues in the field of interior design in connection with an organized field trip.
278 Special Topics: Study Abroad V 1-15. May be repeated for credit. S, F grading.
279 Specail Topics: Study Abroad Special Topics: Study Abroad V 1-15. May be repeated for credit. S, F grading.
303 Immersion Studio 6 (1-10) Prereq A. A. degree, portfolio review, 203 year Interior Design degree. Intense and concentrated experience in design of interior spaces from abstraction and concept to complex interiors of larger scale.
311 [M] History of Design II 3 History of design forms, interiors and furnishings from the Industrial Revolution through the 20th century.
312 [M] Interior Design Theory 2 Prereq I D 321. Theory, principles, and determinants of interior design applied to current practice.
321 Fundamentals of Planning and Design 5 (0-10) Prereq I D 203. Design investigations of space of specified size and complexity for people of varying social, economic, and cultural backgrounds.
325 Interior Building Systems 3 Prereq I D 203. Analysis, planning, and application of interior lighting; introduction to HVAC and plumbing systems.
333 Fundamentals of Planning and Design II 4 (1-9) Prereq I D 321. Design of interior environments for the needs of the private and public sector.
350 [H] History of Interiors II 3 A survey of interior environments, spatial distributions, furnishings, and related design elements in the 19th and 20th centuries.
392 [M] Professional Procedures 3 Business practices and procedures as related to interior design; contract documentation and specification writing.
### Program in Materials Science

**www.materials.wsu.edu**  
Fulmer 204  
509-335-4520


Materials science includes the principles and practice of designing, synthesizing, characterizing, preparing, and fabricating useful materials. The Materials Science Program accepts qualified bachelor's and master's graduates in the sciences and engineering who now wish to pursue graduate research for a doctorate in the area where the disciplines overlap. Materials science is an interdisciplinary program and this feature is emphasized in the research activities.

Requirements for the Materials Science doctorate include a minimum of 72 credit hours of which at least 34 hours are graded course work. The common ground for all participants in materials science is covered by the core of courses (16 credits) required of all students. The core provides a general overview to the field as well as advanced courses in thermodynamics, solid state physics, applied mathematics, and materials characterization. All students must attend the materials science seminar series, which provides an opportunity to learn about the current research activities in the program and associated departments. After completion of the core of courses, students then select additional courses (a minimum of 18 credit hours) in areas that are applicable to their research program. These courses can come from any area of physical science, engineering, and mathematics. All students complete an original research dissertation (Mat 800). After admission to candidacy for the degree, students select a research supervisor from the materials science faculty. A broad spectrum of contemporary research areas is available.

### Description of Courses

#### Liberal Arts

www.libarts.wsu.edu/

#### Description of Courses

**Materials Science Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
</table>
| **Mat S** | **503** Current Topics in Materials Science | V 1-3  
May be repeated for credit. Recent advances and current research at the forefront of materials science. |
| **505** Advanced Materials Science | B | 4 Broad baseline in materials science including relationships between structure and properties. |
| **513** Crystal Plasticity | **3** Same as MSE 513. |
| **516** Phase Transformations | **3** Same as MSE 516. |
Graduate study and specialization are offered by the department in both classical and modern areas. The PhD with Teaching Emphasis program is specially designed for future college teachers, while the several options in applied mathematics, which include an internship experience, provide graduate preparation for mathematical careers in business and industry.

All students who enroll in 100-200-level mathematics courses must show that they have satisfied the prerequisite(s). One way to satisfy a prerequisite is to obtain an appropriate score on the Mathematics Placement Test (MPT). All new WSU students are urged to take the MPT. The MPT is not needed for students who have already completed the prerequisite college mathematics course or obtained the appropriate score on the quantitative SAT test, or for transfer students who have already satisfied General Education Requirements (GERs) and do not intend to take a mathematics course at WSU. See www.math.wsu.edu/placement for more information.

The department offers courses of study leading to the degrees of Bachelor of Science in Mathematics, Master of Science in Mathematics (with an applied mathematics option), Doctor of Philosophy, and Doctor of Philosophy with Teaching Emphasis.

There is a core of requirements common to all of the mathematical options. Students are required to take the core courses to complete one of the degree programs listed below. Some of the electives for the degree programs have courses given in parentheses; these courses are recommended, but not required for the degree.

A major in mathematics requires Math 171, 172, 220, 273, 300, 315, 360 or 443, 398, 401, 402, 420, 421; four additional 300-400-level Math courses; Phys 201; Cpt S 121 or two of Cpt S 153, 203, 251; and Engl 402 (students whose native language is not English may substitute Engl 403). Students following the secondary mathematics teaching program substitute Engl 201 for 402, substitute one of Cpt S 153, 203, 251 for the Cpt S requirement, exclude Math 402 and one of the four additional 300-400-level Math courses, and may substitute Math 303 for 420, and 320 for 421. Courses required for the major may not be taken pass/fail and a 2.0 minimum gpa is required in these courses.

Certification Requirements

1. Applications for certification are accepted at any time during fall and spring semesters. Decisions are made within ten working days of receipt of application. Application forms are available in the Mathematics Department office.
2. Applications are evaluated, and certification is decided, by a faculty committee.
3. Applicants must have an overall gpa of at least 2.0.
4. The mathematics core consists of Math 171, 172, and 220. This core (or its equivalent for transfer students) must be completed before application.
5. Students with at least a 2.5 gpa in the mathematics core will be certified automatically. Those with less than a 2.0 gpa in the mathematics core will normally not be certified. Others will be considered on a case-by-case basis.
6. Appeals on certification decisions are considered by the department chairperson.
7. Students who are denied certification may appeal after completing at least 12 more semester hours, whereupon decisions are based on grades in mathematics, science, and computer science courses; cumulative grade point average and grade patterns; and a personal interview.
8. Certified students whose cumulative gpa or gpa in mathematics courses numbered 171 and above falls below 2.0 for two consecutive semesters, or who are academically deficient, are subject to decertification.
9. Applications for recertification are handled in the same manner as certification applications for those previously denied.

Preparation for Graduate Study

As preparation for work toward an advanced degree in mathematics, a student should have completed the equivalent of one of the schedule of studies. Adequate opportunities are provided for removing deficiencies through the taking of appropriate courses. Students who contemplate undertaking studies leading to a doctoral degree should contact the department for advice and assistance in the development of their plans.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

MATHEMATICS—ACTUARIAL OPTION (127 HOURS)

First Year

<table>
<thead>
<tr>
<th>First Term</th>
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<tbody>
<tr>
<td>Biological Science [B] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 171 [N] (GER)</td>
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Second Term

<table>
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<tr>
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<tbody>
<tr>
<td>Cpt S 121 or two of Cpt S 153, 203, or 251</td>
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<tr>
<td>Econ 101 [S] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>Math 172</td>
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<td>Math 220</td>
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Second Year

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<td>Math 273</td>
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<td>Phys 201 [P] (GER)</td>
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<td>Econ 102 [S] (GER)</td>
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<td>Elective (B Law 210)</td>
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Second Term

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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<td>Math 301</td>
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### Third Year

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<td>Math 443</td>
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### Fourth Year

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<td>Tier III Course [I] (GER)</td>
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<tr>
<td>Elective (Math 464)</td>
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<tr>
<td>Elective (Stat 420 or 536)</td>
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<tr>
<td>Elective (Stats)</td>
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### Mathematics—Applied Statistics Option (124 Hours)

#### First Year

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<td>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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</tr>
<tr>
<td>Math 171 [N] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Term</th>
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<tbody>
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<td>Cpt S 121 or two of (153, 203, 251)</td>
<td>4</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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</tr>
<tr>
<td>Math 172</td>
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<tr>
<td>Math 220</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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#### Second Year

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<td>Elective (Cpt S 122)</td>
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<td>Math 273</td>
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<tr>
<td>Math 300 [M]</td>
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<tr>
<td>Phys 201 [P] (GER)</td>
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<tr>
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<tbody>
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<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Math 301</td>
<td>3</td>
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<tr>
<td>Math 315</td>
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<tr>
<td>Math 360 or 443</td>
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#### Third Year

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<tbody>
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### Mathematics—Computational Option

#### First Year

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<td>Math 171 [N] (GER)</td>
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<td>Math 172</td>
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<td>Math 220</td>
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<td>Social Sciences [S,K] (GER)</td>
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#### Second Year

<table>
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<td>Math 273</td>
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<td>Math 300 [M]</td>
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<td>Phys 201 [P] (GER)</td>
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### Mathematics—Mathematical Modeling Option

#### First Year

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<td>Math 171 [N] (GER)</td>
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<td>Math 172</td>
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<td>Math 220</td>
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<td>Social Sciences [S,K] (GER)</td>
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#### Second Year

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<td>Math 315</td>
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<td>Math 360 or 443</td>
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<td>Math 440</td>
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### Fourth Year

**First Term**
- Arts & Humanities [H, G] or Social Sciences [S, K] (GER) 3
- Math 401 [M] 3
- Tier III Course [T] (GER) 3
- Elective (Stat 423 or 530) 3
- Elective 3

**Second Term**
- Math 402 [M] 3
- Elective (Math 325 or 448) 3
- Elective (Math 456 or 515) 3
- Electives 9

### Mathematics—Secondary Mathematics Teaching Option

**First Year**

**First Term**
- Biological Sciences [B] (GER) 4
- Math 172 4
- Math 220 2
- Social Sciences [S, K] (GER) 3

**Second Term**
- Biological Sciences [B] or Physical [P] Sciences (GER) 4
- Math 301 3
- Math 315 3
- Math 360 or 443 3

### Third Year

**First Term**
- Arts & Humanities [H, G] or Social Sciences [S, K] (GER) 3
- Math 325 or 448 3
- Math 398 1
- Math 421 [M] 3
- Math 464 3

**Fourth Year**
- Arts & Humanities [H, G] or Social Sciences [S, K] (GER) 3
- Elective (Math 416 or 466) 3
- Elective (Math 453 or MgtOp 542) 3
- Math 401 [M] 3

**Math 300–400-level Elective**
- Math 300-400-level Elective 3
- T & L 478 2
- Electives 6

### Fifth Year

**First Term**
- Arts & Humanities [H, G] or Social Sciences [S, K] (GER) 3
- Elective (Math 416 or 466) 3
- Math 401 [M] 3

**Second Term**
- Arts & Humanities [H, G] or Social Sciences [S, K] (GER) 3
- Math 402 [M] 3
- Elective (Math 325 or 448) 3
- Elective (Math 456 or 515) 3
- Electives 9

### Mathematics—Theoretical Option

**First Year**

**First Term**
- Biological Sciences [B] (GER) 4
- Math 172 4
- Math 220 2
- Social Sciences [S, K] (GER) 3

**Second Term**
- Biological Sciences [B] or Physical [P] Sciences (GER) 4
- Intercultural [I, G, K] (GER) 3
- Math 301 3
- Math 315 3
- Math 360 or 443 3

**Third Year**

**First Term**
- Arts & Humanities [H, G] or Social Sciences [S, K] (GER) 3
- Math 325 or 448 3
- Math 398 1
- Math 421 [M] 3

**Fourth Year**
- Arts & Humanities [H, G] or Social Sciences [S, K] (GER) 3
- Elective (Math 415) 3
- Elective (Math 464) 3
- Math 402 [M] 3

**Electives**
- Electives 3
Minors

Mathematics
A mathematics minor requires 18 hours of approved mathematics courses, with at least 9 hours of 300-400-level credits. Check with the Mathematics Department for a current list of approved courses. Courses required for the minor may not be taken pass, fail, and a minimum 2.0 gpa is required in these courses.

Description of Courses

Mathematics Courses

Math
100 Basic Mathematics 2 Review of basic arithmetic and elementary algebra. No credit earned toward degree; not qualified for financial aid.
S, F grading.

101 Intermediate Algebra 3 Prereq appropriate math placement score. Fundamental algebraic operations and concepts. No credit earned toward degree; not qualified for financial aid.

103 Algebra Methods and Introduction to Functions 3 Prereq Math 100, or satisfactory math placement score. Fundamental algebraic operations and concepts, linear systems and inequalities, polynomial and rational functions, introduction to exponential and logarithmic functions.

107 Elementary Functions 4 Prereq Math 101 or 103 or satisfactory math placement score. Graphs, properties, and applications of polynomial, rational, exponential, logarithmic, and trigonometric functions.

110 Mathematics Tutorial V 1 (0-3)-3 (0-9) Prereq math placement exam. Student-centered group tutorial focusing on mathematics skill improvement. May be connected to Math 107 or 201. S, F grading. May be repeated for credit; cumulative maximum 3 hours.

140 Mathematics for Life Scientists 4 Prereq Math 107, or satisfactory math placement score. Differential and integral calculus with emphasis on life science applications. Credit not normally granted for more than one of Math 140, 171, 202, 206.

171 [N] Calculus I 4 (3-3) Prereq Math 107, or satisfactory math placement score. Differential and integral calculus of one variable with associated analytic geometry. Credit not normally granted for more than one of Math 140, 171, 202, 206.

172 Calculus II 4 (3-3) Prereq Math 171. Techniques and applications of one-variable calculus; series, with emphasis on conceptual development and problem solving.

182 Honors Calculus II 4 (3-3) Prereq Math 171 and permission of instructor. Single variable calculus, series, with emphasis on conceptual development and problem solving.

201 Introduction to Finite Mathematics for Business and Economics 3 Prereq Math 101 or 103 or satisfactory math placement score. Basic notions of logic, linear algebra, matrices and analytic geometry; applications to linear programming. Credit not normally granted for more than one of Math 201, 220, and 230.

202 [N] Introduction to Mathematical Analysis for Business and Economics 3 Prereq Math 107, 201, or satisfactory math placement score. Differential and integral calculus of the polynomial, exponential, and logarithmic functions. Credit not normally granted for more than one of Math 140, 171, 202, 206.

205 [N] Statistical Thinking 3 Prereq Math 101 or 103 or satisfactory math placement score. Same as Stat 205.

206 [N] Mathematical Analysis for Architects 3 Prereq Math 107, or satisfactory math placement score. Calculus of elementary functions; trigonometry; applications to architects. Credit not normally granted for more than one of Math 140, 171, 202, 206.

210 [N] Introduction to Mathematics 3 Prereq Math 101 or 103 or satisfactory math placement score. Nature and scope of modern mathematics, relationships to other disciplines.

212 [N] Introduction to Statistical Methods 4 (3-3) Prereq Math 103 or satisfactory math placement score. Same as Stat 212.

216 Discrete Structures 3 Prereq Math 107, Phil 201 and a programming course. Discrete mathematics, trees, graphs, elementary logic, and combinatorics with application to computer science.

220 Introductory Linear Algebra 2 Prereq Math 171 or c/. Elementary linear algebra with geometric applications. Credit not normally granted for more than one of Math 201, 220, and 230.

230 Honors Introductory Linear Algebra 3 Prereq Math 171 or c/ and permission of the instructor. An introduction to linear algebra with an emphasis on conceptual development. Credit not normally granted for more than one of Math 201, 220, and 230.

251 Mathematics for Elementary School Teachers I 3 (2-2) Prereq satisfactory math placement score or Math 101, 103, or 107 with a C or better. Logical and historical development of present-day number systems and associated algorithms; methods of problem solving.

252 [N] Mathematics for Elementary School Teachers II 3 (2-2) Prereq one year high school geometry; Math 251. Informal approach to basic ideas: measurement, geometrical constructions, similarity, congruence, symmetry, probability, counting principles, measures of central tendency, graphical representation.

273 Calculus III 2 Prereq Math 172; 220 or c/. Credit of functions of several variables.

283 Honors Calculus III 2 Prereq Math 182 or by permission. Multivariable calculus with emphasis on conceptual development and problem solving.


301 Introduction to Mathematical Reasoning 3 Prereq Math 140 or 171. Mathematical arguments and the writing of proofs.

302 Theory of Numbers 3 Prereq Math 172, 220. Divisibility properties of integers; congruences; Diophantine equations; quadratic residues.


315 Differential Equations 3 Prereq Math 220, 273. Linear differential equations and systems; series, numerical and qualitative approaches; applications.

320 [M] Elementary Modern Algebra 3 Prereq Math 220. Algebra as a deductive system; number systems; groups, rings, and fields.

325 Elementary Combinatorics 3 Prereq Math 220. Introduction to combinatorial theory: counting methods, binomial coefficients and identities, generating functions, occurrence relations, inclusion-exclusion methods.


351 Mathematics for Elementary School Teachers III 3 Prereq Math 252. Geometric transformations, coordinate methods in geometry, applications of school mathematics, mathematics software.

360 Probability and Statistics 3 Prereq Math 172. Same as Stat 360. Credit not granted for both Math 360 and 370.

364 Principles of Optimization 3 Prereq Math 202 or 220. Algebra of linear inequalities; duality; graphs, transport networks; linear programming; special algorithms; nonlinear programming; selected applications.

370 Introductory Statistics for Engineers 3 Prereq Math 172. Same as Stat 370. Credit not granted for both Math 360 and 370.

375 Vector Analysis 3 Prereq Math 315. Line integrals, gradient, curl, divergence; Stokes’ theorem, potential functions.

397 Mathematicians at Work 1 Introduction to various options in mathematics and the oral, written and leadership skills required for success in the field.

398 Mathematical Snapshots 1 Prereq Math 172. Character, life work, and historical importance of mathematicians from various eras and branches of mathematics.

401 [M] Introduction to Analysis I 3 Prereq Math 301. Properties of sets and sequences of real numbers; limits, continuity, differentiation and integration of functions; metric spaces.
402 **Introduction to Analysis II** 3 Prereq Math 401. Sequences of functions, power series, multivariable calculus, inverse and implicit function theorems, Lagrange multipliers, change of variable in multiple integrations.

408 **Mathematics for Economists** 3 Prereq Math 201, 202. Mathematical topics applicable to modern economic analysis and research. Cooperative course taught by UI (Ag Ec 409), open to WSU students.

410 **Topics in Probability and Statistics** 3 Same as Stat 410.

415 **Intermediate Differential Equations** 3 Prereq Math 315. Linear systems; qualitative theory (existence, uniqueness, stability, periodicity); boundary value problems; applications.

416 **Simulation Methods** 3 Prereq Cpt S 121 or 203; statistics course. Model formulation and simulation in business, industry, and government; simulation languages; analysis of simulation output; applications. Credit not granted for both Math 416 and 516.

420 **Linear Algebra** 3 Prereq Math 220; Math 301. Advanced topics in linear algebra including similarity transformations, canonical forms, bilinear forms.

421 **M [Algebraic Structures** 3 Prereq Math 301. Properties of algebraic structures and their homomorphisms, semi-groups, groups, rings, unique factorization domains, fields.

423 **Statistical Methods for Engineers and Scientists** 3 Same as Stat 423.

425 **Conceptual Aspects of Mathematics** 3 Same as T & L 425.

430 **Statistical Methods in Engineering** 3 Same as Stat 430.

431 **Intersections of Culture and Mathematics** 3 (2-2) Gender/race/ethnicity differences; social consequences; cultural influences on development and learning of mathematics; role of women, people of color in mathematics. Credit not granted for both Math 431 and 531.

432 **Mathematics for College and Secondary Teachers** 3 Prereq teaching experience or intention. Pre-algebra, algebra functions and geometry examined from an advanced perspective, for secondary and lower level college teachers. Credit not granted for both Math 432 and 532.

439 **Applications of School Mathematics** 3 Prereq Math 432. For preselected teachers. Role of application in the classroom; examples using arithmetic, algebra, geometry, counting principles and probability; teaching concepts in applications. Credit not granted for both Math 439 and 539.

440 **Applied Mathematics I** 3 Prereq Math 315. Partial differential equations; Fourier series and integrals; Bessel functions; calculus of variations; vector calculus; applications. Credit not granted for both Math 440 and 540.

441 **Applied Mathematics II** 3 Prereq Math 315. Complex variable theory including analytic functions, infinite series, residues, and conformal mapping; Laplace transforms; applications. Credit not granted for both Math 441 and 541.

443 **Applied Probability** 3 Same as Stat 443.

448 **Numerical Analysis** 3 Prereq FORTRAN, C, or other programming language; Math 315. Fundamentals of numerical computation; finding zeroes of functions, approximation and interpolation; numerical integration (quadrature); numerical solution of ordinary differential equations. Credit not granted for both Math 448 and 548.

453 **Graph Theory** 3 Prereq Math 220. Graphs and their applications, directed graphs, trees, networks, Eulerian and Hamiltonian paths, matrix representations, construction of algorithms. Credit not granted for both Math 453 and 553.

456 **Introduction to Statistical Theory** 3 Same as Stat 456.

461 **Metallurgical Control and Optimization** 3 Basics of process control and optimization applied to metallurgical engineering. Cooperative course taught by UI (Met 461), open to WSU students.

464 **Operations Research and Game Theory** 3 Prereq Math 273. Linear and integer programming; optimization problems; applications to economic and military strategies; rectangular games; minimax theory. Cooperative course taught by WSU, open to UI students (Math 464).

466 **Optimization in Networks** 3 Prereq Math 325 or 364, or knowledge of linear programming. Formulation and solution of network optimization problems including shortest path, maximal flow, minimum cost flow, assignment, covering, postman, and salesman. Credit not granted for both Math 466 and 566.

481 **Topics in Analysis** 3 May be repeated for credit.


497 **Instructional Practicum** 1 or 2 May be repeated for credit; cumulative maximum 2 hours. By interview only; S, F grading.

498 **Career Experience Internship** V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Industrial or governmental career experience in a mathematics or mathematics-related area, supervised by qualified professionals. S, F grading.

499 **Special Problems** V 1-4 May be repeated for credit. S, F grading.

500 **Proseminar** 1 May be repeated for credit; cumulative maximum 2 hours. S, F grading.

501 **Real Analysis** 3 Prereq Math 402. Metric spaces, convergence, continuous functions, infinite series, differentiation and integration of functions of one and several variables.


503 **Complex Analysis** 3 Prereq Math 501. Analytic functions, complex integration, Taylor and Laurent series, conformal mapping, Riemann surfaces and analytic continuation. Cooperative course taught jointly by WSU and UI (Math 531).

504 **Measure and Integration** 3 Prereq Math 501. Lebesgue measure, Lebesgue integration, differentiation, L spaces, general measure and integration, Radon-Nikodym Theorem, outer measure and product measures. Cooperative course taught jointly by WSU and UI (Math 571).

505 **Abstract Algebra** 3 Prereq Math 421. Groups, rings, fields, and homological algebra.


507 **Advanced Theory of Numbers** 3 May be repeated for credit; cumulative maximum 6 hours. Analytic and algebraic number theory. Cooperative course taught by WSU, open to UI students (Math 507).

508 **Topics in Applied Analysis** 3 Prereq Math 502. Advanced treatment of applications using techniques from fundamental analysis, convexity, analytic function theory, asymptotics, differential equations. Cooperative course taught by WSU, open to UI students (Math 508).

509 **Foundations of Mathematics** 3 The basis of mathematics in logic and set theory; continuum hypothesis; Godel's theorems, recent developments. Cooperative course taught by WSU, open to UI students (Math 509).

510 **Topics in Probability and Statistics** 3 Same as Stat 510.

511 **Advanced Linear Algebra** 3 Prereq Math 420. Vector spaces, inner products, unitary equivalence, similarity, Jordan forms, normality, spectral theory, singular value decomposition, norms and inequalities. Cooperative course taught by jointly by WSU and UI (Math 530).
512 Ordinary Differential Equations 3 Prereq Math 402. Existence of solutions; linear systems; qualitative behavior; especially stability; periodic solutions. Cooperative course taught jointly by WSU and UI (Math 539).

515 Statistical Packages 3 (2-3) Same as Stat 515.

516 Simulation Methods 3 Graduate-level counterpart of Math 416; additional requirements. Credit not granted for both Math 416 and 516.

518 Mathematical and Scientific Visualization 3 Prereq graduate standing. Graduate-level counterpart of Math 418; additional requirements. Credit not granted for both Math 418 and 518.

523 Statistical Methods for Engineers and Scientists 3 Same as Stat 523.

525 General Topology 3 Prereq Math 402. Sets, metric spaces, topological spaces; continuous mappings, compactness, connectedness, local properties, function spaces, and fundamental groups. Cooperative course taught jointly by WSU and UI (Math 521).

526 Advanced Topology 3 Prereq Math 421, 525. General topology; basic ideas of algebraic topology. Cooperative course taught jointly by WSU and UI (Math 512).

527 Algebraic Topology I 3 Prereq Math 526. Basic homotopy theory and application. Cooperative course taught by UI (Math 523), open to WSU students.

528 Algebraic Topology II 3 Prereq Math 527. Continuation of Math 527. Cooperative course taught by UI (Math 524), open to WSU students.

531 Intersections of Culture and Mathematics 3 (2-2) May be repeated for credit. Graduate-level counterpart of Math 431; additional requirements. Credit not granted for both Math 431 and 531.

532 Mathematics for College and Secondary Teachers 3 Prereq graduate standing. Graduate-level counterpart of Math 432; additional requirements. Credit not granted for both Math 432 and 532.

534 Approaches to Mathematics Teaching 3 Prereq Math 531, 532. Instruction and curricula of mathematics content for community college and high school, covering basic arithmetic through calculus.


540 Applied Mathematics I 3 Prereq Math 315, graduate standing. Graduate-level counterpart of Math 440; additional requirements. Credit not granted for both Math 440 and 540.

541 Applied Mathematics II 3 Prereq graduate standing. Graduate-level counterpart of Math 441; additional requirements. Credit not granted for both Math 441 and 541.

543 Approximation Theory 3 Prereq Math 448. Univariate polynomial and rational approximation techniques; approximation using splines and wavelets; selected topics in multivariate approximation; algorithms for approximation. Cooperative course taught by WSU, open to UI students (Math 543).

544 Advanced Matrix Computations 3 Prereq Math 448. Advanced topics in the solution of linear systems and eigenvalue problems, including parallel matrix computations. Cooperative course taught by WSU, open to UI students (Math 544).

545 Numerical Analysis of Evolution Equations 3 Prereq Math 448. Discretization and numerical solution of partial differential equations of evolution; stability, consistency, and convergence; shocks; conservation of forms. Cooperative course taught by WSU, open to UI students (Math 545).

546 Numerical Analysis of Elliptic PDEs 3 Prereq Math 448. Methods of discretizing elliptic partial differential equations and solving the resulting systems of equations; error analysis. Cooperative course taught by WSU, open to UI students (Math 547).

548 Numerical Analysis 3 Prereq graduate standing. Graduate-level counterpart of Math 448; additional requirements. Credit not granted for both Math 448 and 548.

550 Advanced Topics in Geometry 3 Projective, affine, and non-Euclidean geometries and their relation to abstract algebra and differential geometry. Cooperative course taught by WSU, open to UI students (Math 554).

551 Ring Theory 3 Ideals, quotient rings, modules, radicals, semi-simple Artinian rings, Noetherian rings. Cooperative course taught by UI (Math 551), open to WSU students.

552 Galois Theory 3 Field extensions, auto-morphisms, normality, splitting fields, radical extension, finite fields, separability. Cooperative course taught by UI (Math 552), open to WSU students.

553 Graph Theory 3 Prereq graduate standing. Graduate-level counterpart of Math 453; additional requirements. Credit not granted for both Math 453 and 553.

555 Topics in Combinatorics 3 May be repeated for credit. Combinatorics, generating functions, recurrence relations, inclusion-exclusion, coding theory; experimental design, graph theory.

556 Introduction to Statistical Theory 3 Same as Stat 556.


561 Partial Differential Equations II 3 Prereq Math 560. Continuation of Math 560. Cooperative course taught by WSU, open to UI students (Math 542).

563 Mathematical Genetics 3 Prereq Math 273; MBioS 301; Stat 412, 430, or 443. Mathematical approaches to population genetics and genome analysis; theories and statistical analyses of genetic parameters.

564 Topics in Optimization 3 May be repeated for credit. Prereq advanced multivariable calculus and a programming language; Rec Math 464, 544. Advanced topics in the theory and computing methodology in optimization with emphasis on real-life algorithmic implementations. Cooperative course taught by WSU, open to UI students (Math 564).

565 Nonlinear Optimization II 3 Prereq Math 273, 564; programming language. Theory and algorithms for constrained linear and nonlinear optimization including interior point, quadratic programming, penalty, barrier and augmented Lagrangian methods.

566 Optimization in Networks 3 Prereq graduate standing. Graduate-level counterpart of Math 466; additional requirements. Credit not granted for both Math 466 and 566.

568 Statistical Theory I 3 Same as Stat 548.

569 Statistical Theory II 3 Same as Stat 549.

570 Mathematical Foundations of Continuum Mechanics I 3 Prereq advanced calculus and differential equations. The basic mathematical theory of continuum mechanics and its relation to perturbation techniques and stability methods. Cooperative course taught by WSU, open to UI students (Math 570).

571 Mathematical Foundations of Continuum Mechanics II 3 Prereq Math 570. Continuation of Math 570. Cooperative course taught by WSU, open to UI students (Math 573).

572 Quality Control 3 Prereq Stat/Math 360 or 443. Same as Stat 572.

573 Reliability Theory 3 Same as Stat 573.

581 Seminar in Analysis V 1-3 May be repeated for credit. Cooperative course taught jointly by WSU and UI (Math 541).

582 Seminar in Algebra V 1-3 May be repeated for credit. Cooperative course taught jointly by WSU and UI (Math 561).

583 Seminar in Applied Mathematics V 1-3 May be repeated for credit. Cooperative course taught by WSU, open to UI students (Math 583).

584 Seminar in Topology and Geometry V 1-3 May be repeated for credit. Cooperative course taught by WSU, open to UI students (Math 584).
585 Seminar in Number Theory V 1-3 May be repeated for credit. Cooperative course taught by WSU, open to UI students (Math 587).

586 Mathematical Modeling in the Natural Science 3 Graduate-level counterpart of Math 486; additional requirements. Credit not granted for both Math 486 and 586

591 Seminar in the History of Mathematics I 1 Topics in the history of mathematics to 1800.

592 Seminar in the History of Mathematics II 1 Topics in the history of mathematics from 1800 to present.

597 Mathematics Instruction Seminar 1 May be repeated for credit; cumulative maximum 5 hours. Prereq graduate standing. Introduction to the teaching of University mathematics. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

602 Internship V 2-12 May be repeated for credit. Prereq 40 hours graduate work. A structured internship from three to nine months; teaching at the postsecondary level or applied work in a non-academic environment. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

School of Mechanical and Materials Engineering

www.mme.wsu.edu/

Sloan 201


The School of Mechanical and Materials Engineering offers programs in Mechanical Engineering (Pullman and Tri-Cities campuses), and Materials Science and Engineering (Pullman). Each program is detailed as follows.

MECHANICAL ENGINEERING

The mission of the mechanical engineering program is to provide a broad education in mechanical engineering that prepares our students for successful professional practice and advanced studies. Mechanical engineering is concerned with (a) the use and economical conversion of energy from natural sources into other useful energy to provide power, light, heat, cooling, and transportation, (b) the design and production of machines to lighten the burden of human work, (c) the creative planning, development, and operation of systems for using energy, machines, and resources, and (d) the processing of materials into products useful to people. Employment opportunities for graduates exist in the areas of mechanical design, systems design, equipment development, manufacturing, CAD/CAM, project engineering, production management, applied research, and sales and service.

The undergraduate curriculum emphasizes foundation courses at the third year which are fundamental to all aspects of mechanical engineering. These courses emphasize both analysis and design while accompanying laboratory courses provide opportunities for hands-on experiences. Computer applications are interwoven throughout the program. The courses in the fourth year emphasize the integration of fundamental engineering principles into various applications in mechanical engineering. The students also take two electives tailored to their interests and career goals. The undergraduate program is completed with courses in integrated design of mechanical and thermal systems as well as a capstone laboratory course. Graduates are prepared to enter the field as engineers or to continue into a graduate program. An engineering internship program is available for students to gain industrial experience during their academic careers.

The educational objectives of the undergraduate mechanical engineering program are as follows: 1) to ensure that our graduates have an understanding of fundamental mathematical and scientific principles and the ability to apply these principles to relevant engineering problems, so that they can be successful in the profession or in pursuing graduate studies; 2) to ensure that our graduates have the technical knowledge, hands-on experience, and communication skills that will allow them to function successfully as members of technical teams; and 3) to instill in our graduates an appreciation of the economic, social, environmental, and ethical impact of their professional activities and a desire for lifelong learning.

The school offers courses of study leading to the degrees of Bachelor of Science in Mechanical Engineering (accredited by the Accrediting Board for Engineering and Technology), Master of Science in Mechanical Engineering, and Doctor of Philosophy (Mechanical Engineering). The BS-MS Program is available to outstanding undergraduates, and facilitates the completion of a Master of Science degree program in Materials Science and Engineering or Mechanical Engineering. The school participates in the interdisciplinary programs leading to the Master of Science in Engineering and Doctor of Philosophy (Engineering Science).

MATERIALS SCIENCE AND ENGINEERING

The mission of the materials science and engineering program is to provide excellence in education, research, and service in the field of materials science and engineering through educational programs that graduate students with strong backgrounds in scientific and engineering problem-solving methods. Materials science and engineering is the application of methods and principles of the pure sciences to the study and utilization of engineering materials. The undergraduate program focuses on (a) the relationship of the microscopic structure, e.g. crystal structure, and defects to the macroscopic properties of materials, e.g. strength, (b) experimental techniques for characterizing physical, chemical and structural properties of materials, and (c) the design and selection of appropriate materials for given engineering applications.

The specific fields of application covered by research and instruction programs can be expressed by the nominal designations of metals (metallurgy), polymers, ceramics, electronic materials, and composites. Due to the diversity of useful properties encountered in materials engineering, attention must be given to application and peculiarities of these specific types of materials. Where possible, however, a generalized approach toward the study of materials, their properties, their selection, and their utilization is fostered. The broad-based instructional approach prepares graduates for careers in a wide range of industrial settings, from aerospace companies to corporations specializing in the production of solid state electronics. In addition, the undergraduate curriculum prepares students for continued education at the graduate level.

The educational objectives of the undergraduate materials science and engineering program are as follows: 1) to provide our students with an academic foundation in the fundamentals of materials science; 2) to provide our students with a program which emphasizes understanding of the interrelationship between structure, properties, and processing for engineering materials; 3) to provide our students with research experience; 4) to provide our students with an integrated mechanical-materials design experience that utilizes a teamwork approach in solving engineering problems; 5) to develop in our students the ability to communicate effectively both orally and in writing; and 6) to create an environment within the program that instills in the students a sense of professionalism and a desire for lifelong learning.

The school offers courses of study leading to the degrees of Bachelor of Science in Materials Science and Engineering (accredited by the Accrediting Board for Engineering and Technology) and the Master of Science in Materials Science and Engineering. The school participates in the interdisciplinary program leading to the Doctor of Philosophy (Materials Science).

TRANSFER STUDENTS

The School of Mechanical and Materials Engineering cooperates with the community colleges in Washington to minimize problems associated with transfer. Inquiries are welcome. A solid preparation in mathematics, physics, and chemistry is strongly recommended prior to transfer to minimize the time required at Washington State University to complete the bachelor’s degree requirements.

The requirements for direct entry into the mechanical engineering or materials science and engineering programs upon transfer are the same as listed for certification. Transfer student applications will be handled by the Admissions Office and sent to the school so that students do not need to make a separate application to the school.

PREPARATION FOR GRADUATE STUDY

Before undertaking graduate study, a student should have completed substantially the equivalent of the schedule of studies. Students from other scientific disciplines (such as physics, chemistry, and mathematics) are encouraged to apply. Specific details concerning prerequisites for such students are worked out on an individual basis.
### Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

#### MATERIALS SCIENCE AND ENGINEERING DEGREE PROGRAM (129 HOURS)  ➤ FYDA

**Certification Materials Science and Engineering**

Certification into the Bachelor of Science program in Materials Science and Engineering is limited to 21 students per entering class. Students who have completed at least 30 semester hours of graded course work with an overall minimum 2.0 gpa and who have completed the following courses with a minimum grade of 2.0 in each course (Chem 105, Chem 106, Engl 101, Math 171, 172, and Phys 201 or their equivalents) are eligible. When it becomes necessary to limit enrollment, the overall gpa as well as the gpa for the prerequisite courses listed above will be important factors. For additional details, contact the school’s office of student services.

**First Year**

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**Second Year**

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**Third Year**

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### Mechanical Engineering Degree Program (128 HOURS)  ➤ FYDA

**Certification Mechanical Engineering**

Students who have completed at least 30 semester hours of graded course work with an overall minimum 2.0 gpa and who have completed the following courses with a minimum grade of 2.0 in each course: C E 211, Chem 105, Engl 101, M E 103, Math 171, 172, and Phys 201 or their equivalents are eligible to apply for certification into the Mechanical Engineering Program. Applications for certification will be reviewed by a departmental committee. When it becomes necessary to limit enrollment, the overall gpa as well as the gpa for the prerequisite courses listed above will be important factors. Application deadline dates are March 1 for the fall semester and October 1 for the spring semester. Students who have not completed all of the prerequisite courses will be assigned to a mechanical engineering advisor. Additional details and application forms are available from the school’s office of student services.

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<tr>
<th>Term</th>
<th>Hours</th>
<th>Credits</th>
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<tr>
<td>Math 172</td>
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### Minors

#### Materials Science And Engineering

A minor in materials science and engineering requires 16 credits which must include M E 220 and MSE 201. An additional 12 credits must be chosen from MSE 302, 401, 402, 403, 404, 413, M E 310, or E E 496.

#### Mechanical Engineering

A minor in mechanical engineering requires 16 credits of 300-400-level M E courses, including two of the following four courses: M E 303, 348, 404, 414.
### Description of Courses

#### Mechanical Engineering Courses

**M E**

103 Engineering Graphics 3 (1-6) Orthographic theory, conventions, and visualization; isometric and oblique pictorials; geometric dimensioning and tolerancing; computer-aided drafting and solid modeling. Cooperative course taught by WSU, open to UI students (ENGR 103).

120 Innovation in Design 2 Engineering and architectural creativity; role, function, enhancement, integration in design methods.

125 M E Merit Experience 2 Prepay by interview only. A hands-on, project-oriented course emphasizing team work and creativity in engineering design, conducted in an enriched learning environment.

212 Dynamics 3 Prereq C E 211. Kinematics and kinetics of particles and rigid bodies; introduction to mechanical vibration. Cooperative course taught jointly by WSU and UI (ME 220).

220 Materials Laboratory 1 (0-3) Prereq C E 215 or c/. Mechanical behavior of materials and application to engineering structures.

301 Fundamentals of Thermodynamics 3 Prereq Phys 201; Rec Math 315. Thermodynamic properties of matter, ideal and real gases, work and heat, first and second laws and their application to engineering systems. Cooperative course taught jointly by WSU and UI (ChE 321).

303 Fluid Mechanics 3 Prereq M E 212. Fluid statics, laminar and turbulent flow, similitude, pipe flow, boundary layers, lift and drag and measurement techniques. Cooperative course taught jointly by WSU and UC (CE 320).

305 Thermal and Fluids Laboratory 2 (1-3) Prereq M E 303 or c/, Math 370 or c/, major in engineering. Instrumentation, data acquisition, and theory verification in the thermal and fluid sciences.

310 Manufacturing Processes 3 Prereq MSE 201, major in engineering. Cutting operations, metal forming by deformation, material fabrication, and nontraditional processing.

311 Manufacturing Processes Laboratory 1 (0-3) Prereq M E 310 or c/, major in engineering. Manufacturing processes laboratory in machining, welding, forming; manufacturing project.

313 Engineering Analysis 3 Prereq Math 315, major in engineering; computer science programming. Analysis and modeling of engineering problems utilizing numerical and mathematical techniques and computers.

316 [M] Systems Design 3 Prereq C E 215, MSE 201 or c/, major in engineering. Engineering design process for systems and components; design criteria, creativity, engineering economics, CAD, standards, product safety; design projects.

325 Manufacturing Operations Planning 3 Prereq M E 310, 311, Math 360 or c/, or by permission. Quantitative techniques of production and planning and control, material requirements, operations scheduling, production economics.

348 Dynamics Systems 3 Prereq M E 212, 313, major in engineering. Fundamentals of vibration analysis, control systems, system modeling and dynamics analysis.

375 Manufacturing Control Systems 3 (2-3) Prereq E E 304, M E 212, Math 315. Feedback control; hardware components, software algorithms, and system integration for process control.

400 Seminar in Manufacturing 2 Prepay senior standing. Current industry practice; non-technical skills (communication, product realization, human factors, ethics, corporate culture; market focus, career development).

401 Mechatronics 3 (2-3) Prereq E E 304; M E 348. Integration of mechanical and microprocessor-based systems; control theory implemented with data acquisition systems; sensors; actuators, signal conditioning, programmable logic controllers.


404 Heat Transfer 3 Prereq M E 301, 303 or c/, major in engineering. Conduction, radiation, and convection heat transfer; analytical, numerical, experimental results for solids, liquids, and gases; heat exchanger design. Cooperative course taught jointly by WSU and UI (ME 345).


407 Computational Fluid Dynamics 3 Prereq M E 303. Basic concepts and applications of computational fluid dynamics to the analysis and design of fluid systems and components.


413 Mechanics of Solids 3 Prereq C E 215, MSE 201. Same as MSE 413.


415 Integrated Design 3 Prereq M E 310, 414 or c/; major in engineering. Methodologies to optimize product design incorporating functionality, reliability, manufacturability and maintainability.

416 Mechanical Systems Design 3 (1-6) Prereq M E 348 or 375; M E 404; 414 or c/. Integrative design in mechanical engineering; multidisciplinary design project considering both technical and non-technical contexts; organizational dynamics and communications.

419 Air Conditioning 3 Prereq M E 404. Principles of heat and moisture transfer; air motion and purity in buildings; design of systems. Cooperative course taught jointly by WSU and UI (ME 444).

420 Capstone Engineering Design 3 (1-6) Prepay senior in engineering. Integrative design in engineering; multi-disciplinary design project considering both technical and non-technical contexts; organizational dynamics and communications.


436 Combustion Engines 3 Prereq M E 303. Internal combustion engines; spark ignition engines, diesels, and gas turbines.

439 Applied Aerodynamics 3 Prereq M E 303. Aerodynamic lift and drag; circulation; boundary layers, application to subsonic aircraft wing design.

442 Robotics 3 Same as E E 442.

449 Mechanical Vibration 3 Prereq M E 348. Vibrating systems and noise producing mechanisms; design for noise and vibration control. Cooperative course taught jointly by WSU and UI (ME 472).

450 Stress Design Codes 3 Prereq C E 215. Theoretical bases and application of the principal regulatory stress analysis design codes.

460 Nuclear Reactor Engineering 3 Prereq M E 461. Nuclear reactor design problems in thermodynamics, fluid flow, heat transfer, fuel preparation, waste disposal, materials selection; discussion of reactor types. Cooperative course taught by UI (NE 460), open to WSU students.

461 Introduction to Nuclear Engineering 3 Prepay junior in engineering or physical science. Applied nuclear physics; application to the nuclear fuel cycle and nuclear reactor core design; nuclear reactor systems and safety. Cooperative course taught jointly by WSU and UI (NE 360).

470 Dynamics of Machinery 3 Prereq M E 348. Kinematics and kinetics of mechanisms and machines; static and dynamic force analyses of planar and spatial systems; synthesis for functionality.


473 Computer-aided Design 3 (2-3) Prereq M E 316. Interactive computer programming and graphics in the design of engineering systems.
474 Advanced Manufacturing Processes 3 Prereq M E 310. Mechanical and metallurgical fundamentals of metal machining and materials processing by deformation; manufacturing systems concepts in production.

475 Manufacturing Automation 3 (2-3) Prereq Cpt S 203 or 251; E E 304; M E 310. Computer control of manufacturing processes; numerically controlled machine tools, robotics, control algorithms, component and system design.

481 Control Systems 3 Prereq M E 348. Analysis and design of feedback control systems. Cooperative course taught jointly by WSU and UI (ME 481).

483 Topics in Mechanical Engineering V 1-4 (0-4; 0-12) May be repeated for credit; cumulative maximum 7 hours. Contemporary topics in materials engineering.

495 Internship in Mechanical Industry 3 or 6 May be repeated for credit; cumulative maximum 12 hours. Prereq major in materials science engineering or mechanical engineering. By interview only. Students work full time on engineering assignment in approved industries with industrial and faculty supervision. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Continuum Mechanics 3 Prereq graduate standing. Unified presentation of principles common to all branches of solid and fluid mechanics; viscous fluids, elasticity, viscoelasticity, and plasticity.

509 MEMS Engineering 3 (2-3) Prereq graduate standing or permission of instructor. Introduction to the design, fabrication and application of microelectromechanical systems.

515 Advanced Heat Transfer 3 Rec M E 404, 521. Derivation of the energy conservation equation; laminar and turbulent forced convection heat transfer with internal and external flow; free convection. Cooperative course taught jointly by WSU and UI (ME 546).

516 Conduction and Radiation Heat Transfer 3 Prereq M E 404. Principles of conduction and radiation heat transfer with focus on solving conduction and radiation problems of engineering interest.

521 Fundamentals of Fluids I 3 Prereq C E 315 or M E 303. Governing equations of fluid mechanics accompanied by applications of Navier-Stokes equation to simple flow situations, boundary layer analysis.

522 Fundamentals of Fluid II 3 Rec M E 521. Viscous shear layers including heat and mass transfer, compressibility effects, vortex dynamics, stability and transition, turbulence analysis and modeling.

523 Engineering Acoustics 3 Prereq graduate standing. Fundamentals of acoustics including wave theory; transmission through layers; generation and reception, low frequency models; application to sound measurement, transducers, loudspeaker cabinet design, and nondestructive testing; acoustic design project required. Cooperative course taught by UI (ME 513), open to WSU students.

526 Microscopic Thermodynamics 3 Microscopic development of equilibrium; classical and quantum particle statistics; statistical description of real and ideal gases, solids, and liquids. Cooperative course taught jointly by WSU and UI (ME 526).

527 Macroscopic Thermodynamics 3 Advanced thermodynamics from macroscopic viewpoint; basic postulates, equilibrium, stability, property relations; application to thermal-fluid and solid mechanics; irreversible thermodynamics. Cooperative course taught jointly by WSU and UI (ME 527).

530 Elasticity 3 Prereq graduate standing. Theory of kinematics of solid deformable bodies; conservation laws applied to an elastic continuum; generalized linear stress-strain behavior with applications.

531 Theory of Plasticity 3 Rec M E 501. The fundamentals of the theory of plasticity; the classical theory of plasticity; the classical theory and modern continuum theories of large elastic-plastic deformations.

532 Finite Elements 3 Same as C E 532.

534 Mechanics of Composite Materials 3 Prereq M E 414. Analysis of micromechanical and macromechanical behavior of composite materials with emphasis on fiber-reinforced composite; prediction of properties; stiffness and strength theories; laminated beams and plates; dynamic behavior; environmental effects. Cooperative course taught jointly by WSU and UI (ME 534).

537 Fracture Mechanics and Mechanisms 4 Same as MSE 537.

540 Advanced Dynamics of Physical Systems 3 Newtonian dynamics, rotating coordinate systems; Lagrangian and Hamiltonian mechanics; gyroscopic mechanics, other applications. Cooperative course taught by WSU, open to UI students (M E 504).

541 Advanced Mechanical Vibrations 2 or 3 Rec M E 449. Response of single and multi degree of freedom systems; finite element formulation; matrix methods, random vibrations. Cooperative course taught jointly by WSU and UI (ME 572).

542 Optimal Control of Dynamic Systems 3 Introduction to optimal control theory, differential games, and multiple criteria systems; applications in engineering, biology, economics, agriculture, and medicine. Cooperative course taught by WSU, open to UI students (ME 542).

544 Optimal Systems Design 3 Parameter design optimization techniques for nonlinear systems; theory, numerical methods, and applications; multiple criteria optimal trade-off analysis and game theory.

545 Nonlinear Dynamics 3 Rec M E 540 or 541. Fundamentals of nonlinear oscillations, stability theory, perturbation methods, and chaotic behavior in nonlinear dynamical systems.

551 Turbulent Flow 3 Rec C E 521 or M E 521. Turbulent flow; dimensional analysis, statistical models and descriptions of organized structures.

552 Experimental Methods in Thermal-fluid Science 3 (2-3) Theory and practice in the use of instrumentation for measuring temperature, velocity, pressure and concentration; measurement of classical flow fields.

553 Two-phase Flow V 1-3 May be repeated for credit, cumulative maximum 3 hours. Rec M E 521. Fundamentals of the flow of fluids with two phases and applications. Cooperative course taught by WSU, open to UI students (ME 553).

556 Numerical Modeling in Fluid Mechanics 3 Same as C E 556.

561 Combustion 3 Rec M E 521. General combustion phenomena, chemical reactions, combustor modeling, laminar and turbulent flame theory, emissions. Cooperative course taught by WSU, open to UI students (ME 561).

562 Nuclear Reactor Theory 3 Prereq M E 461; differential equations. Basic reactor neutronic theory including the transport equation; multi-group, multi-region diffusion theory; kinetics; and perturbation theory.

565 Nuclear Reactor Engineering 3 Prereq M E 461. Reactor power distribution; thermal and exposure limits; critical heat flux and pressure design; neutronic/thermal hydraulic relationships; transient/accident analysis.

569 Advanced Topics in Thermal and Fluid Sciences V 1-3 May be repeated for credit. Advanced topics in thermodynamics, heat transfer or fluid mechanics; analytical and experimental methods.

574 Foundations of CAD 3 Topics fundamental to the creation of CAD, engineering visualization, and virtual reality based engineering software. Cooperative course taught by WSU, open to UI students (ME 574).

575 Geometric Modeling 3 Study of the mathematics behind the creation of complex shapes for CAD using curves, surfaces, and solids.

579 Advanced Topics in Design and Manufacturing V 1-3 May be repeated for credit.

598 Seminar 1 May be repeated for credit. Current research interests. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Materials Science and Engineering Courses

MSE

110 Introduction to Materials Science 2 Introduction to the science and technology of metals, polymers, ceramics and composites.

120 Innovation in Design 2 Same as M E 120.

201 Materials Science 3 Prereq Chem 106, Phys 201 or c//. Structure of materials, phase equilibrium, phase transformations, and mechanical properties.

302 Electronic Materials 3 Prereq Chem 105, Phys 202 or c//. Structure of materials, electronic structure of solids; thermal, electrical, dielectric, and magnetic properties of materials; semiconductors processing.

309 Metallurgy Transport Phenomena 3 Prereq Math 315 or c/. Introduction to principles of metallurgy transport phenomena including heat, mass, and momentum transfer. Cooperative course taught by UI (Met 309), open to WSU students.

312 Thermodynamics and Phase Equilibrium 3 Prereq MSE 201. Concepts of activity, equilibrium, solution properties; relationship between free energy, composition, and temperature; heterogeneous equilibria.

316 Kinetics of Chemical and Physical Reactions 3 Kinetics of heterogeneous chemical reactions; mechanisms and kinetics of diffusion; oxidation and other gas-metal reactions; polarized electrodes; corrosion; boundary migration; nucleation and growth; eutectoid and martensitic transformations.

320 Materials Structure—Properties Lab 3 (1-6) Prereq MSE 201 or c//; major in materials science engineering. Principles and techniques of optical metallography and other laboratory methods used in modern materials science and engineering.

321 Materials Characterization 3 Prereq MSE 201. Properties of x-rays, scattering and diffraction; crystal structures; x-ray diffraction methods, transmission electron microscopy and scanning electron microscopy.

323 Materials Characterization Lab 2 (1-3) Prereq MSE 321 or c//. Laboratory exercises on materials characterization: x-ray, TEM, SEM.

341 Particulate Materials Processing 4 (3-3) Prereq M E 310. Engineering science of particulates; powder production, powder properties, separation; design of systems applied to metals, ores, and concentrates. Field trips required. Cooperative course taught by UI (Met 341), open to WSU students.

401 Metallic Materials 3 Prereq MSE 201. Major alloy systems and manufacturing processes; materials selection.

402 Polymeric Materials 3 Prereq MSE 201. Structural characterization, syntheses, and reactions of polymeric materials; relationships between structure and properties, viscoelasticity, deformation, and physical behavior of polymers.

403 Ceramic Materials 3 Prereq MSE 201. Processing, characteristics, microstructure, and properties of ceramic materials.

404 Engineering Composites 3 Prereq MSE 201. Basic concept in design and specifications of engineering composites.

407 Materials Fabrication 3 Fundamentals of casting, solidification, metal working, and joining of metallic materials; emphasis on interaction between processing, properties, and structure. Field trip required. Cooperative course taught by UI (Met 407), open to WSU students.

413 Mechanics of Solids 3 Prereq C E 215, MSE 201. Elasticity, elastic stress distributions; plastic deformation of single and polycrystals; introduction to dislocation theory and its applications; creep, fracture, fatigue.

415 Materials Selection and Design 3 Prereq Chem 331. Selection of materials for use in structural applications; consideration of environment, stress conditions, cost and performance as guide to properties. Cooperative course taught by UI (Met 415), open to WSU students.

420 Capstone Engineering Design 3 (1-6) Same as M E 420.

421 Light Metals 3 Fundamental design of the light metals aluminum, magnesium, and titanium alloys; applications of these materials. Cooperative course taught by UI (MET 421), open to WSU students.


429 Powder Metallurgy 3 Fundamentals of conventional press-and-sinter powder metallurgy (PM) and more advanced techniques; commercial applications of PM parts. Cooperative course taught by UI (MET 429), open to WSU students.


450 Seminar 1 May be repeated for credit. For seniors only.

461 Metallurgical Control and Optimization 3 Basics of process control and optimization applied to metallurgical engineering. Cooperative course taught by UI (Met 461), open to WSU students.


483 Topics in Materials Engineering V 1-4 (0-4; 0-12) May be repeated for credit; cumulative maximum 7 hours. Contemporary topics in materials engineering.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Advanced Topics in Materials Science 2 or 3 May be repeated for credit; cumulative maximum 6 hours. Chemical crystallography, microstructure, ultra-structure, theories of crystalline and non-crystalline solids, theology and fracture mechanism of materials. Cooperative course taught by WSU, open to UI students (Met 544).

503 Advanced Topics in Materials Engineering V 1-3 May be repeated for credit; cumulative maximum 6 hours.

505 Advanced Materials Science 4 Same as Mat S 505.

506 Biomaterials 3 Prereq MSE 201 and permission of instructor. Overview of the different types of materials used in biomedical applications such as implants and medical devices.

513 Crystal Plasticity 3 Rec Math 440. Dislocation theory; slip; climb; mechanical properties of polycrystalline materials, and application to important deformation processes.

514 Thermodynamics of Solids 3 Rec MSE 312. Thermodynamic properties of solid solutions; models for substitutional and interstitial solutions; configurational and non-configurational contributions; calculation of phase diagrams.

515 Electronic Properties of Materials 3 Electron energy bands in solids, electrical conduction in metals and semiconductors, applications to semi-conduction devices based on silicon and III-V compounds.

516 Phase Transformations 3 Rec MSE 314, 316. Thermodynamics, nucleation, interface motion, mechanics and kinetics of chemical reactions between solid metals and their environment.

517 Thin Films 3 Prereq graduate standing or senior in engineering or science. Materials science aspect of thin films, including growth, characterization, and properties for electrical, mechanical, corrosion, and optical behavior.

519 Corrosion and Oxidation of Metals 3 Prereq MSE 316. Basic corrosion and oxidation mechanisms for various metals with emphasis on those pertaining to stainless steels.

520 Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Reporting problems, research and research methods in materials science and engineering. S, F grading.
521 Statistics of Microstructures 3 Prereq Math 440, 540 or permission of instructor. Stereology, orientation and spatial distributions, percolation, measurement techniques and application to modeling of microstructures.

523 Ceramics Processing 3 Prereq graduate standing. Fundamentals of ceramic processing science for thin films and bulk ceramics.

537 Fracture Mechanics and Mechanisms 4 Fracture mechanics and mechanisms and the microstructural origins of toughness in metals, polymers and composites.

543 Natural and Synthetic Polymeric Materials 3 Rec MSE 402. Glassy, crystalline, and rubbery states of synthetic and natural polymers.

546 Parameters for Synthesis of Wood Composition Materials 3 Theory and practice of wood composite materials, manufacture and development. Cooperative course taught by WSU, open to UI students (ForPr 537).

547 Basic Principles of Adhesion 3 Rec MSE 402. Principles of interfacial bonding applied in the engineering of polymers, wood and heterophase systems.

548 Reinforced Polymer and Wood-based Composites 3 Fundamentals of composite materials having polymers and wood as major components.

549 Nondestructive Testing of Wood-based Materials 3 Same as C E 536.

592 Transmission Electron Microscopy 3 Development of the principles and applications of electron optics in microscopy.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Description of Courses

Medical Sciences Courses

Med S

501 P Medical Preceptorship 2 May be repeated for credit; cumulative maximum 4 hours. For WWAMI students only. Practicum, observations of medical practice with individual physician volunteers. S, F grading.

510 P Histology 3 (2-3) Description and microscopic examination of cell types, tissues, and major organs of the human body. S, F grading.

511 P Anatomy of the Trunk 5 (4-3) For WWAMI students only. Extensive regional study of human thorax, abdomen, pelvis, and perineum; embryology and living anatomy; correlates gross with clinical anatomy. S, F grading.

512 P Basic Mechanisms in Cellular Physiology 4 Basic physiological mechanisms, primarily at the cellular level. S, F grading.

513 P Introduction to Clinical Medicine I 1 For WWAMI students only. Instruction in communications skills and interview techniques to form the basis for the eventual doctor-patient relationship. S, F grading.

514 P Molecular and Cellular Biology I 3 Classical molecular and cellular biochemistry, cellular physiology and molecular genetics. S, F grading.

516 P Systems of Human Behavior I 2 Physical and psychological development of the individual; conceptual systems and models of behavior related to medicine. S, F grading.


521 P Natural History of Infectious Disease and Chemotherapy 5 (4-3) Pathogenesis and immunity of infectious diseases, clinical manifestations and control of representative bacterial, fungal, parasitic, and viral infectious diseases. S, F grading.

522 P Introduction to Clinical Medicine II 2 For WWAMI students only. Communication skills as related to patients and dealing with problem identification and patient history. S, F grading.

523 P Medical Immunology 2 For WWAMI students only. Principles of immunology and their relationship to human medicine. S, F grading.

524 P Molecular and Cellular Biology II 2 Continuation of Med S 514. S, F grading.

526 P Systems of Human Behavior II 2 Continuation of Med S 516 with an emphasis on models of behavior, normality and abnormality related to medicine. S, F grading.

531 P Head, Neck, Ear, Nose and Throat 5 (4-3) Gross anatomy, including skull, pharynx, and larynx; audition and balance. S, F grading.

532 P Nervous System 5 (4-3) Normal structure and function of the nervous system, including the eye. S, F grading.

535 P Introduction to Clinical Medicine III 2 (1-2) For WWAMI students only. The screening physical examination. S, F grading.

600 P Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Program in Basic Medical Sciences

www.wwami.wsu.edu
Morrill 108
509-335-2602

Director A. Turner; Professors, R. W. Brosemer, M. L. Pall, S. R. White, R. B. Wilson; Associate Professor, J. M. Mallatt; Clinical Affiliates, L. H. Fearn, M. Hunt; Science Instructor, D. M. Conley.

The Program in Basic Medical Sciences is an integral part of the Washington-Wyoming-Alaska-Montana-Idaho (WWAMI) Cooperative Program in Medical Education. Course work is parallel with and equivalent to the first year curriculum of the University of Washington School of Medicine, and all courses apply to the MD degree granted by that University. Because of specialized support material required and the nature of course content, course enrollment is restricted. With the approval of the course director and the student's advisor, certain courses listed below may be taken by graduate students enrolled in graduate programs leading to advanced degrees granted by other academic units.

In accordance with School of Medicine policy, all Med S courses are S, F graded.

Department of Military Science

www.wsu.edu/~armyrotc/
Avery 405
509-335-6605

Professor and Department Chair, Lieutenant Colonel J. Zubat; Assistant Professors, Captain D. Duncan, Captain J. Harshen.

The Department of Military Science at WSU is designed to supplement a student's academic studies by motivating, educating, and training qualified students to serve as commissioned officers in all components of the US Army. The military science academic, professional, and technical education and training complement the educational programs at WSU.

The military science curriculum comprises a two-year basic course (freshman and sophomore years), and a two-year advanced course (junior and senior years). The basic course is open to all WSU students. Enrollment into the advanced course is offered only with the approval of the department chair. During the summer between the junior and senior years of military science, cadets attend National Advanced Leadership Camp (six weeks at Fort Lewis, WA). It is a training/evaluation/leadership/practicum opportunity taught by ROTC faculty from across the country and includes cadets from across the United States.

At WSU, military science courses emphasize hands-on training designed to develop leadership skills applicable to military and civilian endeavors. Students learn leadership skills through classroom instruction, on-campus leadership labs, and summer training opportunities for selected students. Advanced course cadets receive a monthly allowance of $400 per month during the school year. Competitively awarded scholarships are available which, in addition to the monthly allowance, pay full tuition, enrollment fees, and defray the costs of necessary books and supplies. High school students may apply for a four-year Army ROTC scholarship in the fall of their senior year; all students may apply for two- or three-year scholarships whether or not
they are enrolled in the ROTC program. Additionally, scholarships are available on a competitive basis for students desiring to earn a commission in the National Guard and Army Reserve without a commitment to full-time active duty upon graduation.

Upon successful completion of the advanced course and graduation from WSU, cadets selected for commissioning are commissioned as Army officers and serve in Army Reserve, National Guard, or active Army units.

Description of Courses

Military Science Courses

Mil S

101 The United States Army 1 Role of the Army in contemporary society.

102 National and International Role of the Army 1 Role of the Army in today’s international affairs.

110 Cougar Rangers I 1 Military adventure training, pioneering activities, military skills and small unit tactics. Field trip required.

111 Cougar Rangers II 1 Military adventure training, pioneering activities, military skills and small unit tactics. Field trip required.

201 Introduction to Leadership 2 Multidisciplinary approach to military leadership.

202 The Officer as a Professional 2 US Army Officer Corps as a profession; the US Army Officer as a professional.

206 Military Science Overview 5 Preparation for advanced military science program; map reading, tactics, leadership, US military history, fundamentals of army duty.

301 Applied Leadership and Management 3 Troop leadership procedures emphasizing instruction in military professionalism and ethics; practical aspects of tactics and leadership practicum.

302 Small Unit Tactics and Military Leadership 3 Preparation, delivery, and critique of practical oral presentations; leadership of small units; offensive and defensive operations.

320 Leadership Development Assessment 6 Prereq Mil S 301, 302. By interview only. Intensive study and internship in military tactics, command and leadership; held at Fort Lewis, WA, S, F grading.

396 Leader Internship 6 Prereq junior standing. By interview only. Fully funded non-committal leader internship and Army orientation; provides leader training and assessment. May be taken as MgtOp 498, Pol S 497, PEACT 201, or Ed Ad 499 with permission. S, F grading.

401 Advanced Military Leadership 3 Historical and legal basis of military justice; small unit management; military professionalism and ethics.

402 Advanced Military Management and Practicum 3 Theory and practice of Army administration/management; staff planning and correspondence; pre-commissioning orientation; unit management/resources application.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

School of Molecular Biosciences

molecular.biosciences.wsu.edu/

Abelson 301 509-335-1276


Molecular biosciences can be viewed as a dynamic continuum in which approaches derived from biology, chemistry, and physics are utilized to address the fundamental mechanisms of living things. The School of Molecular Biosciences offers undergraduate majors in biochemistry, biotechnology, genetics and cell biology, and microbiology. Students interested in the health professions can major in biochemistry, genetics and cell biology, or microbiology, and readily complete the requirements for application to medical, dental, veterinary, or other professional schools. Each of the areas is described below in more detail.

The School of Molecular Biosciences also offers undergraduate minors in biochemistry, genetics and cell biology, microbiology, molecular biology, and pre-genetics counseling. Requirements for the minors are detailed below.

BIOCHEMISTRY

Biochemistry is an interdisciplinary science that involves the application of methods and theories of chemistry to the study of biological phenomena. An undergraduate major in biochemistry prepares you for a variety of careers in industry, education, public service, and the health professions, or for graduate study and research in biochemistry, biophysics, molecular biology, and many related fields. Students have training opportunities in a wide range of research areas including protein biochemistry, membrane structure and function, molecular biology of gene regulation in animals, plants, and microorganisms, enzymatic reaction mechanisms, signal transduction, DNA repair, reproductive biology, protein-DNA interactions, plant and natural product biochemistry, and structural biology including NMR spectroscopy and x-ray crystallography.

The program offers two curricular options leading to the Bachelor of Science in Biochemistry. The biochemistry/biophysics option provides increased emphasis on chemistry, physics, mathematics, and physical biochemistry, and yields a minor in chemistry. The biochemistry/molecular biology option provides increased emphasis on molecular and cell biology, and yields a minor in molecular biology.

We expect that our graduating students will be able to: 1) use their biochemical skills within the context of a strong, fundamental general education; 2) use the fundamentals of the life and physical sciences; 3) apply a fundamental knowledge and practical understanding of biochemical principles; 4) continue learning whether in a traditional educational setting or via some other route; 5) incorporate both technical and non-technical issues in problem solving; and 6) communicate effectively.

At the graduate level, the school offers programs leading to the degrees of Master of Science in Biochemistry and Doctor of Philosophy (Biochemistry).

BIOTECHNOLOGY

Biotechnology is the application of a new level of understanding of organisms and biological processes. It uses modern molecular, computer, and engineering techniques to answer basic biological questions and to develop products and practices for use by society. Biotechnology will affect every aspect of human existence. The applications of biotechnology are broad and have already brought impressive results in agriculture, human health, and environmental protection and restoration. Biotechnology enables industries to make new or better products with greater speed, efficiency, and flexibility.

We expect that our graduating students will be able to: 1) use their biotechnological skills within the context of a strong, fundamental general education; 2) use the fundamentals of the life and physical sciences; 3) apply a fundamental knowledge and practical understanding of biotechnological principles; 4) continue learning whether in a traditional educational setting or via some other route; 5) incorporate both technical and non-technical issues in problem solving; and 6) communicate effectively.

At the graduate level, the school offers a program leading to the degree of Master of Science in Bio-technology.

GENETICS AND CELL BIOLOGY

Genetics and cell biology are interdisciplinary sciences that are fundamental to all fields of modern biology. The program affords students the opportunity to study with scientists who represent a wide range of research interests in plant, animal, and microbial genetics and cell biology. Undergraduates who major in genetics and cell biology will be well prepared to work as high-level technicians in the biotechnology industry or in University and government laboratories. An undergraduate degree also prepares students for entry into professional schools related to medicine as well as into graduate school programs leading to the master’s and doctoral degrees in a variety of areas in agriculture and basic science. Students who receive master’s and doctoral degrees obtain positions in basic and applied genetics at universities, federal departments and laboratories, private industry, including biotechnology and plant and animal breeding, and in specialized medical research.

We expect that our graduating students will be able to: 1) use their genetic and cell biological skills within the context of a strong, fundamental general education; 2) use the fundamentals of the life and physical sciences; 3) apply a fundamental knowledge and practical understanding of genetic and cell biological principles; 4) continue learning whether in a traditional educational setting or via
some other route; 5) incorporate both technical and non-technical issues in problem solving; and 6) communicate effectively.

At the graduate level, the school offers programs leading to the degrees of Master of Science in Genetics and Cell Biology and Doctor of Philosophy (Genetics and Cell Biology).

**MICROBIOLOGY**

Microbiology is both a basic and an applied science that studies microorganisms and their activities. It is concerned with their form, structure, reproduction, physiology, and identification. It includes the study of their distribution in nature, their relationship to each other and to other living things, their beneficial and detrimental effects on human beings, and the physical and chemical changes they make in their environment. Employment opportunities in industrial, government, hospital, and private laboratories and agencies are excellent for qualified graduates. Areas in which the unit is prepared to direct research include the biology of membranes, bioremediation, molecular genetics, molecular basis of cell-cell interactions and virulence, microbial differentiation, cellular and tumor immunology and the regulation of the immune response.

The microbiology degree program offers options in general microbiology and medical technology, leading to the Bachelor of Science degree in Microbiology. Requirements for the general microbiology option and for the medical technology option are the same except that Biol 418 is required for the medical technology option. A one-year internship in an accredited school of medical technology is required after graduation for those interested in becoming certified medical technologists.

We expect that our graduating students will be able to: 1) use their microbiological skills within the context of a strong, fundamental general education; 2) use the fundamentals of the life and physical sciences; 3) apply a fundamental knowledge and practical understanding of microbiological principles; 4) continue learning, whether in a traditional educational setting or via some other route; 5) incorporate both technical and non-technical issues in problem solving; and 6) communicate effectively.

At the graduate level, the school offers programs leading to the degrees of Master of Science in Microbiology and Doctor of Philosophy (Microbiology).

**Schedules of Studies**

**Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.**

**BIOCHEMISTRY—BIOCHEMISTRY/BIOPHYSICS OPTION (120 HOURS) [FYDA]**

A grade of C or better is required in all MBioS courses taken to meet graduation requirements. None of these courses may be taken pass/fail.

**BIOTECHNOLOGY OPTION (120 HOURS)**

A grade of C or better is required in all MBioS courses taken to meet graduation requirements. None of these courses may be taken pass/fail.

**First Year**

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**Second Year**

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**BIOTECHNOLOGY OPTION (120 HOURS)**

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## School of Molecular Biosciences

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1 Pre-med students and those interested in advanced degrees should take Chem 345 and 346 (a one-year course in organic chemistry).
2 Lab electives: Biol 452, MBios 360, 378, 402 [M], 441 [M], 443, 495.
3 Note: MBios 441 and 443 must be taken concurrently with MBios 440 and 442.
5 Phil 365 and 370 are recommended, but not required.
6 Soc 331 is recommended, but not required.

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### GENETICS AND CELL BIOLOGY—MOLECULAR GENETICS AND CELL BIOLOGY TECHNOLOGY (120 HOURS) ✦ FYDA

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### MICROBIOLOGY AND MEDICAL TECHNOLOGY (120 HOURS) ✦ FYDA

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<td>Microbiology 107 [B]</td>
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<td>Physics 101 [P]</td>
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<td>Arts &amp; Humanities</td>
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1 Pre-med students and those interested in advanced degrees should take Chem 345 and 346 (a one-year course in organic chemistry).
3 E Mic 586 or 587 may be substituted.
1 Pre-med students and those interested in advanced degrees should take Chem 345 and 346 (a one-year course in organic chemistry).

2 Electives may include MBioS 401, 426, 444, 445, 446, 448, 450, 454, 547. A total of two courses (6 credits) is required.

3 For Microbiology Degree Program, Entom 343, 448, Biol 315, 352, 353, 418, or 428 may satisfy this requirement; for Medical Technology Degree Program, take Biol 418.

Minors

Biochemistry

A minor in biochemistry requires 21 hours including Chem 345, 346; MBioS 303, 304, 413; and MBioS 414 or 465. A grade of C or better is required in all courses used in the minor. None of these courses may be taken pass/fail.

Genetics and Cell Biology

A minor in genetics and cell biology requires 16 hours under the genetics and cell biology degree program at the 300-400-level, including MBioS 301 and 401. Additional credits may be selected from Biol 325, 452, MBioS 402, 422, 423, 425, 426, and 427. A grade of C or better is required in all course work for the minor.

Microbiology

A minor in microbiology requires a minimum of 16 credit hours including MBioS 302 and the remaining at the 300-400-level selected from: MBioS 340, 341, 342, 426, 440, 441, 442, 443, 444, 445, 446, 448, 450, 454, 498, and 499. A grade of C or better is required in all course work for the minor.

Molecular Biology

A minor in molecular biology requires 18-21 credit hours including the following courses: MBioS 301, 302, 303, 401; MBioS 304, 402, or 454; and MBioS 413, 420, or 426. A grade of C or better is required in all course work for the minor.

Pre-Genetic Counseling

A minor in pre-genetic counseling requires 21 total hours including MBioS 301, 423, Phil 365, Psych 321, 444, 445, and one of Math 360, Psych 311, Stat 212, or 412. Additional credits (as needed) from: Biol 251, 321, 407, 519, Psych 312, 333, 350, 361, 464, Soc 351, 446. A grade of C or better is required in all course work for the minor.

Description of Courses

Molecular Biosciences Courses

MBioS

101 [B] Introductory Microbiology 4 (3-3)

Microbiology for the informed citizen as it impacts humans and their environment. Not for students who have taken Biol 106 and 107. Credit not granted for both MBioS 101 and MBioS 102/105.

102 Introductory Microbiology 3

Description of microorganisms and the role they play in disease production, public health, the environment and in commercial processes. Not for students who have taken Biol 106 and 107. Credit not granted for both MBioS 101 and MBioS 102/105.

105 [B] Introductory Microbiology Laboratory 1 (0-3) Prereq MBioS 101 or c/. Introductory microbiology laboratory; lab portion of MBioS 101. Credit not granted for both MBioS 101 and MBioS 102/105.

301 General Genetics 4

Prereq Biol 106 and 107; two semesters Chem. Principles of modern and classical genetics. Credit not normally granted for MBioS 301/Biol 301 and Biol 408.

302 General Microbiology 4 (3-3) Prereq Biol 106 and 107; Chem 345 or c/. Structure, function, nutrition, physiology and genetics of microbes and their application to immunology, pathology, microbial diversity and environmental microbiology.

303 Introductory Biochemistry 4

Prereq Chem 106; Chem 345. Modern biochemistry for undergraduates in the biological sciences. Cooperative course taught by WSU, open to UI students (MMBB 380).

304 [M] Introductory Biochemistry Laboratory 3 (1-6) Prereq MBioS 303 or c/. Basic biochemical techniques.

320 [B] DNA and Society 3

Prereq one college-level course in biology. The role of DNA in natural processes and diseases; impact of biotechnology on health care, agriculture, industry, and our lives.

340 Medical Microbiology 3

Prereq MBioS 302; MBioS 303 or c/. Microbial pathogens and their relationship to disease.

341 Diagnostic Medical Bacteriology 2 (0-6) Prereq MBioS 340 or c/. Techniques and tests for the identification of bacteria pathogenic for humans.

342 Microbial Ecology 3

Prereq Biol 106; Chem 345 or c/. Discussion of microorganisms behavior in nature and microbial activities influence on ecological balance.

360 [M] Cell and Molecular Laboratory 2 (0-6) Prereq MBioS 301, 303, or c/. One semester organic chemistry. Laboratory methods in cell biology, genetics and molecular biology.

401 Introduction to Cell Biology 3

Prereq MBioS 301 or 303. Cellular structure and function; membrane biochemistry and transport; cell-cell communication; regulation of cell cycle and apoptosis; cell signaling; cancer biology.

402 [M] General Genetics Laboratory 3 (1-6) Prereq MBioS 301. Basic principles of modern and classical genetics utilizing several species.

413 General Biochemistry 3

Prereq MBioS 303, junior standing. Structure and function of proteins, nucleic acids and biological membranes; principles of enzymology; biochemical methodology.

414 General Biochemistry 3

Prereq MBioS 413. Metabolism of carbohydrates, proteins, fats, bioenergetics; photosynthesis; control of metabolic processes.

420 Eukaryotic Molecular Genetics 3

Prereq MBioS 301, 303. Organization and regulation of eukaryotic genes and genomes; recombinant DNA methods and applications. Credit not granted for both 420 and 520.

422 Genetic and Molecular Aspects of Plant Reproduction 2 or 3

Same as Hort 405. Credit not granted for both MBioS 422 and 522.

423 Human Genetics 3

Prereq MBioS 301. Exploration of individual and population genetics leading to critical discussion of current social, medical, and scientific issues.

424 Directed Problems in Cell Biology 1

Prereq MBioS 301 or 303; c/ in MBioS 401. Complementary course to MBioS 401.

425 [T] Origins of Life 3

Prereq one Tier II course in biological sciences and completion of one Tier I and three Tier II courses. Origin of life and evolution of genetic structure; critical analysis of molecular evolution.

426 Microbial Genetics 3

Prereq MBioS 301 or 303; MBioS 302. Genetics of bacteria, bacteriophages and plasmids; regulation of gene expression; genetic manipulation of microorganisms.

427 [M] Perspectives in Biotechnology 3

Prereq MBioS 301. Same as A S 488. Credit not granted for both MBioS 427 and 527.

440 Immunology 3


441 [M] Immunology Laboratory 2 (0-6) Prereq MBioS 440 or c/. Fundamental principles and techniques used in immunology.

442 General Virology 3

Prereq MBioS 301, 303; organic chemistry. The biology of bacterial, animal, and plant viruses. Credit not granted for both MBioS 442 and 542. Cooperative course taught by WSU, open to UI students (MMBB 414).

443 General Virology Laboratory 2 (0-6) Prereq MBioS 442 or c/. Cooperative course concerning cultivation and characterization of viruses. Cooperative course taught by WSU, open to UI students (MMBB 415).

444 Food and Applied Microbiology 2

Same as FSHN 416.

445 Food Microbiology Laboratory 2

Same as FSHN 417.

446 Epidemiology 3

Prereq junior standing. Study of diseases in human populations; concepts of etiology, disease rates, susceptibility and risk factors, screening for disease, and prevention. Cooperative course taught by WSU, open to UI students (MMBB 420).

447 Molecular Mechanisms in Microbiology 2

In-depth discussion of molecular mechanisms and different experimental approaches in microbiology. Cooperative course taught by UI (MMBB 450), open to WSU students.
448 Soil Microbiology and Biochemistry 3 (2-3) Prereq MBioS 101 or 201; SoilS 201. Same as SoilS 431.

450 Basic and Applied Microbial Physiology 3 Prereq MBioS 302, 303. Basic microbial physiology and its relevance to the processes of applied microbiology. Credit not granted for both MBioS 450 and 550.

452 Environmental Microbiology 3 Prereq college-level biology, microbiology, organic chemistry. Microbial contamination and interactions between micro-organisms and the environment, methods and mechanisms of bioremediation. Credit not granted for both MBioS 452 and 552.

454 Techniques in Molecular Biology 3 (1-6) Prereq MBioS 302 or 402. Basic principles and techniques of gene manipulation.

455 Biotechnology for High School Teachers 3 (1-6) Prereq high school science teaching experience. Methodologies illustrating the use of microbes to implement laboratory exercises in biotechnology.

465 Principles of Biophysical Chemistry 3 Prereq MBioS 303; Math 140 or 171; Phys 102 or 202, Biochemical reactions and processes, molecular recognition, coupled reactions, enzyme catalysis, analysis of macromolecular structure by electrophoresis, sedimentation, viscosity, and spectroscopy.

466 Physical Biochemistry 3 Prereq MBioS 465, Math 172, Phys 202. Techniques for the study of biological structure and function; spectroscopy, magnetic resonance, diffusion, sedimentation, electron microscopy, diffracton and scattering. Credit not granted for both 466 and 566.


490 [M] Genetics and Cell Biology Seminar 2 May be repeated for credit. Prereq MBioS 301. Classical literature in genetics and cell biology; current topics discussed by faculty experts in the field.

492 [M] Senior Projects in Genetics and Cell Biology 1 Prereq senior status in genetics and cell biology major. Written paper and seminar presentation on laboratory research project.

494 [M] Senior Project in Biochemistry 1 Prereq senior biochemistry major. Written paper and seminar presentation on laboratory research project.

495 Internship Training V 2 (0-4) to 4 (0-8) May be repeated for credit; cumulative maximum 8 hours. Prereq MBioS 301, 302, or 303; by permission only. Experience in work related to specific career interests. S, F grading.

496 Senior Project in Microbiology 1 Prereq senior Microbiology major. Written paper and seminar presentation on laboratory research or library project.

498 Directed Research V 1 (0-3) to 4 (0-12) May be repeated for credit. Prereq MBioS 301 or 303. Introduction to laboratory research.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Cell Biology 3 Prereq MBioS 301, 303. Graduate-level counterpart of MBioS 401; additional requirements. Credit not granted for both MBioS 401 and 501. Cooperative course taught by WSU, open to UI students (Genet/Pisc 550).

503 Molecular Biology I 3 Prereq MBioS 301, 303. DNA replication and recombination in prokaryotes and eukaryotes; recombinant DNA methods and host/vector systems; genome analysis; transgenic organisms.

504 Molecular Biology II 3 Prereq MBioS 301, 303. Gene expression and regulation in prokaryotes and eukaryotes, including transcription, RNA processing, and translation; chromatin structure; DNA repair.

506 Molecular Techniques in Microbiology 4 (2-6) Prereq graduate standing; biochemistry or molecular biology course or permission of instructor. Current molecular biology techniques applied to DNA and protein isolation and characterization: southern and western blots, PCR, PAGE, computer cloning. Cooperative course taught by WSU, open to UI students (MMBB 529).

513 General Biochemistry 1 3 Graduate-level counterpart of MBioS 413; additional requirements. Credit not granted for both 413 and 513. Cooperative course taught by WSU, open to UI students (MMBB 541).

514 General Biochemistry II 3 Graduate-level counterpart of MBioS 414; additional requirements. Credit not granted for both 414 and 514. Cooperative course taught by WSU, open to UI students (MMBB 542).

520 Eukaryotic Molecular Genetics 3 Prereq MBioS 301, 303. Graduate-level counterpart of MBioS 420; additional requirements. Credit not granted for both 420 and 520.

521 Cell Biotechnology V 1-3 Prereq MBioS 303, 401. Contemporary cell biotechnology; techniques including: cell culture, immunology (including preparation and use of monoclonal antibodies), nucleic acid hybridization (including in situ).

522 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Graduate-level counterpart of MBioS 422; additional requirements. Credit not granted for both MBioS 422 and 522.

523 Fundamentals of Oncology 3 Same as P/T 572.

524 Cellular and Molecular Aspects of Development 3 Same as Biol 573.

525 Advanced Topics in Genetics V 1 or 2 May be repeated for credit. Prereq MBioS 511 or 520. Recent research in selected areas of genetics.

526 Advanced Topics in Cell Biology V 1-3 May be repeated for credit; cumulative maximum 7 hours. Current research in cell structure and function. Cooperative course taught by WSU, open to UI students (Genet/Pisc 592).

527 Perspectives in Biotechnology 3 Prereq MBioS 301. Graduate-level counterpart of MBioS 427; additional requirements.

528 Molecular and Cellular Reproduction 3 (2-2) State of the art concepts of the molecular, cellular, and physiological aspects of mammalian reproduction.

530 Plant Molecular Genetics 3 Prereq MBioS 520. Plant molecular genetics with emphasis on systems specific to plants and plant genetic engineering. Cooperative course taught by WSU, open to UI students (Genet 570/Pisc 571).

531 Plant Cell Biology 3 Prereq graduate standing. Function of the plant cell with emphasis on current research; topics include membrane biology, protein targeting, and molecular signaling.

532 Plant Transmission Genetics 3 Same as CropS 504.

534 Fungal Genetics 4 (3-3) Same as PI P 534.

535 Molecular Genetics of Plant and Pathogen Interactions 2 Same as PI P 535.

536 Molecular Genetics 3 Prereq MBioS 301, 302 or 502; MBioS 513. Biochemical description of genetic processes in microorganisms.

540 Immunology 4 Graduate-level counterpart of MBioS 440; additional requirements. Credit not granted for both MBioS 440 and 540. Cooperative course taught by WSU, open to UI students (MMBB 512).

541 Seminar 1 May be repeated for credit. Literature reviews and research reports.

542 General Virology 3 Graduate-level counterpart of MBioS 442; additional requirements. Credit not granted for both MBioS 442 and 542.

543 Advanced Pathogenic Mechanisms 3 Prereq by interview only. Detailed analysis of microbial virulence factors and host factors involved in infection and infectious disease. Cooperative course taught jointly by WSU and UI (MMBB 562).

544 Microbial Transformation 3 Prereq MBioS 303, 450. Use of microbes in the biodegradation of wastes and bioprocessing to produce valuable chemical stocks. Cooperative course taught by UI (MMBB 568), open to WSU students.

545 Advanced Immunology 3 Prereq introductory course in immunology. Cellular and molecular regulation of the immune response. Cooperative course taught by WSU, open to UI students (VS 570).

546 Selected Topics in Microbiology 1 May be repeated for credit; cumulative maximum 2 hours. Prereq 9 hours 300-400-level Micro.

547 Advanced Topics in Microbiology V 1-3 May be repeated for credit.
548 Selected Topics in Virology 1 Prereq MBioS 445, 542. Selected topics in virology using the current literature.

549 Selected Topics in Immunology 1 May be repeated for credit; cumulative maximum 2 hours. Prereq course in immunology. Seminar series on advances in immunology.

550 Basic and Applied Microbial Physiology 3 Graduate-level counterpart of MBioS 450; additional requirements. Credit not granted for both MBioS 450 and 550.

552 Environmental Microbiology 3 Graduate-level counterpart of MBioS 452; additional requirements. Credit not granted for both MBioS 452 and 552.

554 Chromosome Structure and Function 3 Same as Crops 554.

561 Biochemical Signaling in Plants, Animals and Microorganisms 2 Prereq MBioS 513. New research on intra and extra cellular biochemical signaling, including communication in plants and hormone action in animals.

566 Physical Biochemistry 3 Prereq MBioS 465, Math 172, Phys 202. Graduate-level counterpart of MBioS 466; additional requirements. Credit not granted for both 466 and 566.

567 Proteins and Enzymes 3 Prereq MBioS 513. Enzyme mechanisms; protein structure and function; protein evolution.

568 Advanced Topics in Biochemistry V 1-3 May be repeated for credit. Prereq MBioS 513 or c//. Recent research in selected areas of biochemistry.

570 Biological Membranes 2 or 3 Prereq MBioS 514. Structure and function of biological membranes; composition, transport, receptors, and sensory phenomena.

571 Advanced Topics in Plant Biochemistry 2 Prereq MBioS 514; basic botany. Biochemistry unique to plants; new research advances.

574 Protein Biotechnology 3 Biotechnology related to the isolation, modification and large scale commercial production, patenting and marketing of useful recombinant proteins and products.

575 Protein Trafficking in Eucaryotic Cells 3 Same as MPS 580.

576 Molecular Biology Techniques I 1 (0-3) Prereq MBioS 514 or c//. Modern laboratory technique in the sequencing of nucleic acids.

577 Molecular Biology Techniques II 1 (0-3) Prereq MBioS 514 or c//. Modern laboratory techniques in the use of plasmids as cloning vehicles.

578 Bioinformatics 3 (2-3) Graduate-level counterpart of MBioS 478; additional requirements. Credit not granted for both 478 and 578. Cooperative course taught by WSU, open to UI students (MMBB 578).

579 Biochemistry Seminar 1 or 2 May be repeated for credit; cumulative maximum 10 hours. Required of all graduate students in biochemistry.

581 Seminar in Animal Physiology 1 Same as A S 540.

593 Research Proposal 2 May be repeated for credit; cumulative maximum 4 hours. Written and oral presentation of an area of biochemistry.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Program in Molecular Plant Sciences

www.wsu.edu/molecular-plants/
Clark 287
509-335-3412


Graduate study leading to degrees of Master of Science in Molecular Plant Sciences and Doctor of Philosophy is offered as an interdepartmental curriculum by the graduate faculty from the Departments of Crop and Soil Science, Horticulture and Landscape Architecture, Molecular Biosciences, Plant Pathology, Biological Sciences, and the Institute of Biological Chemistry. The objectives of the program are to provide the graduate student with a broad knowledge in molecular plant sciences and with research experience in a chosen area within this discipline. Specialization includes cellular and subcellular physiology, the molecular biology and biochemistry of plant-related processes, photosynthesis and photosorption, nitrogen fixation, phytochemistry, the physiology of vascular plants, metabolism, plant pathogen interactions, hormonal interactions and regulation of growth, crop production physiology, and physiological ecology as well as related areas in agriculture and biology.

Students entering the program must have completed their baccalaureate degree with training in one year each of elementary biology or botany, and physics, chemistry through one semester of organic chemistry, one semester each of molecular plant sciences and genetics, and mathematics through calculus. Limited undergraduate deficiencies may be remedied by taking the appropriate courses upon enrollment in the graduate program on a provisional basis. Degree requirements for both the MS and PhD degrees include courses in advanced molecular plant sciences, plant morphology and anatomy, and biochemistry. To meet the minimum requirements of core course credit in the Graduate School, elective courses are chosen as approved by the student’s advisor and the supervising committee of graduate faculty. There is no foreign language requirement. Policies and procedures of the Graduate School apply to all admissions. Interested students may direct their inquiries to molecular plant sciences or to any participating academic unit. Should the latter route be followed, preference for the Program in Molecular Plant Sciences must be indicated and, if possible, the research area of interest identified.

The program offers flexibility for students with varied backgrounds in chemistry, biochemistry, molecular plant sciences, molecular biology, botany, genetics, biology, and the agricultural sciences to pursue advanced training in molecular plant sciences, with independent study and original research in areas of the student’s own interests as the single most important component. The interdisciplinary nature of the program assures the student of interaction with molecular plant scientists representing a wide range of research interests and provides the student with a broad choice of specialized facilities which are available in the cooperating academic units.

Financial support for students in the program is determined within the administering academic unit and not by molecular plant sciences. Participating faculty may provide support through individual grants and contracts. Every effort will be made to inform applicants of these opportunities.

Course requirements are drawn from existing courses offered by cooperating departments and programs. In addition, a seminar is held weekly during each semester.

Description of Courses

Molecular Plant Sciences Courses

MPS
515 Seminar in Molecular Plant Sciences 1 A cross-discipline seminar, including botany, crop and soils sciences, horticulture, plant pathology, and molecular plant sciences. May be repeated for credit; cumulative maximum 4 hours.

561 Biochemical Signaling 2 Same as MBioS 561.

570 Advanced Topics in Molecular Plant Sciences 1 Oral presentation of a current research paper. May be repeated for credit; cumulative maximum 3 hours.

571 Research Proposal 2 Written and oral presentation of an area of molecular plant sciences. May be repeated for credit; cumulative maximum 4 hours.

580 Protein Trafficking in Eucaryotic Cells 3 Prereq MBioS 513; graduate standing. The biochemistry and cell biology involved in protein trafficking among organelles in eucaryotic cells. Cooperative course taught by WSU, open to UI students (WS 580).

587 Advanced Topics in Plant Biochemistry 2 Same as MBioS 571.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Dissertation and/or Examination Variable credit. S, F grading.
School of Music and Theatre Arts

libarts.wsu.edu/musicandtheatre/
Kimborough 260
509-335-3898

The School of Music and Theatre Arts offers courses of study leading to the degrees of Bachelor of Music, Bachelor of Arts in Music, Bachelor of Arts in Theatre Arts and Drama, Master of Arts in Music, Master of Arts in Theatre Arts and Drama, and Master of Arts in the Teaching of Theatre Arts and Drama.

Endorsement curricula offered in cooperation with the College of Education provide certification for teachers of music or drama. Minors in music and drama are available as are many courses, performance opportunities, and other activities for students interested in music and theatre.

Music

libarts.wsu.edu/musicandtheatre/
Kimborough 260
509-335-3898

Associate Professor and Director of the School of Music and Theatre Arts, G. Berthiaume; Professors, C. Argersinger, E. Lear, G. Yasinitsky; Associate Professors, M. Arsey, D. Jarvis, D. Turnbull, J. Wieck, L. Wiest, H. Young; Assistant Professors, A. Barash, R. Hare, J. Weiss; Senior Instructor A. Yasinitsky; Clinical Assistant Instructor, D. Hower; Instructors, M. Brink, S. Converse, M. Mietke, J. Schneider, J. Scriggins, E. Zenzen.

The Music Program supports the current University and College missions by developing the intellectual, creative, and practical abilities of the individuals and communities that we serve through excellence in teaching, creative activity, and service.

The focal emphases are performance, teaching, and composition. Supported by study of theory, history, practice, modes of presentation, and cultural roles, these emphases are directed toward making significant contributions to the field of music, while providing to the state, University, and community a rich diversity of music reflective of our contemporary world. Within the broad range of musical styles, the program intends to sustain and improve its existing strengths in classical music and jazz, while continuing to increase coverage of ethnic and popular music in relation to their aesthetic value and relevance to society. Essential to fulfilling this mission is our understanding that each facet of the study of music should culminate in the creation and performance of music. The Music Program believes that the value of working together in a cooperative environment is the principal means for realizing goals and objectives.

Bachelor of Arts

This program is designed to offer a broad musical understanding within a liberal arts background. We expect that our graduating students be able to: 1) demonstrate mastery of music theory (an understanding of organizational patterns of music and their interaction, and of musical forms and structures and the ability to employ this understanding in aural, verbal, and visual analysis); 2) competently perform on an instrument of choice (including voice) and effectively communicate on the literature for that instrument and for appropriate ensembles, and demonstrate a basic performance proficiency on the piano; 3) critically evaluate the history and development of music through the present time and place music in historical, cultural, and stylistic contexts; 4) comprehend the basics of non-Western music and/or jazz, and demonstrate a rudimentary capacity to create derivative or original music both extemporaneously and in written form; and 5) work independently on a variety of musical problems by combining their capabilities in performance, analysis, composition and improvisation, and history and repertory.

Bachelor of Music

This program offers majors for specialization in performance, composition, and music education as well as options for professional music preparation in combination with other fields. The curriculum is designed to prepare students as professional musicians, teachers, and practitioners of music. We expect that our graduating students be able to: 1) demonstrate mastery of music theory (an understanding of organizational patterns of music and their interaction, and of musical forms and structures and the ability to employ this understanding in aural, verbal, and visual analysis); 2) competently perform on an instrument of choice (including voice) and effectively communicate on the literature for that instrument and for appropriate ensembles, and demonstrate a basic performance proficiency on the piano; 3) critically evaluate the history and development of music through the present time and place music in historical, cultural and stylistic contexts; 4) comprehend the basics of non-Western music and/or jazz, and demonstrate a rudimentary capacity to create derivative or original music both extemporaneously and in written form; and 5) work independently on a variety of musical problems by combining their capabilities in performance, analysis, composition and improvisation, and history and repertory.

Music Performance

This major offers professional preparation in music with specialization in performance. The curriculum is designed to prepare students to become professional performers in their respective major instrument or voice. Students following options in performance or composition are required to present an acceptable senior recital in the major performance medium (composition for composition majors). Students following options in performance are also required to present an acceptable junior recital in the major performance medium.

Music Education

This program offers professional preparation in music with specialization in music education. The curriculum is designed to prepare students as professional teachers of music. Students following any of the music education or elective studies options are required to present an acceptable senior half recital in the major performance medium. Students following any of the music education options must have a minimum GPA of 2.5 in all of the following areas: cumulative GPA, Professional Education Core with a C or better in each course, and academic major (and minor if any) with a C or better in each course. Students certifying as majors in any of the music education options must also certify as majors in the College of Education.

Master of Arts in Music

Please consult the current WSU Graduate Study Bulletin. For students pursuing the combined BM/MA with teacher certification in music, please consult the department.

CERTIFICATION REQUIREMENTS

Normal progress in all music degree curricula requires enrollment during the freshman year in 300-level performance studies. Such enrollment requires an audition which is best completed during the semester (usually spring) prior to the student’s matriculating in the University. Students who do not audition early must do so during the first week of classes in the term. Normal progress also assumes placement in 200-level music theory. Theory placement tests will be administered as part of the performance audition. Students who do not qualify for 300-level performance studies and 200-level theory studies as freshmen will usually require more semesters and credit hours of performance studies to complete a degree than listed in this schedule of studies.

To certify as a major pursuing any degree in music, students must meet the following criteria:

Completion of 24 semester hours; cumulative GPA of 2.0; completion of 10 hours with a cumulative GPA of 2.0 and a grade of C or better in those courses selected: Mus 151, 152, 181, 182, 251, 252, 253, 254, and up to four credits of applied study; approval of the appropriate applied study area coordinator [approval requires two semesters study as specified by each area: Keyboard at 300 level with grade of C or better, Brass and Percussion at 300 level with grade of B- or better, Woodwinds at 300 level with grade of B- or better, and Voice at 300 level with grade of B- or better]; completion of application available from department. Students not passing the upper-division exam after the second attempt will be decertified as music majors.

In addition, the College of Education requires 2.5 GPA and C or better in each course listed for the major, minor, and professional core, plus a 2.5 cumulative GPA, for students certifying in any of the Bachelor of Music in Music Education curricula. As indicated in the requirements listed under the various majors and options for the Bachelor of Music degree and the Bachelor of Arts degree in Music, each student must satisfactorily complete all music courses with a minimum 2.5 GPA and a grade of C or better in each music course. Each student is required to pass the piano proficiency exam and the upper-division exam, with the exception of those students enrolled in the Bachelor of Arts degree (the B.A. degree requires completion of Mus 182 with a C or better). Students must also complete the General Education Requirements plus those for the College of Liberal Arts.
Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

BACHELOR OF ARTS IN MUSIC
(120 HOURS)  / FYDA

This four-year program is designed to meet the needs of students wishing a broad liberal arts background with a major in music. Of the total 120 credits required for a degree in this program, 70 credits are devoted to courses outside music, including the General Education Requirements. Non-music courses other than those used for the GERs must be at the 200-level or above. 40 credits of the 120 required for the degree must be in 300-400-level. Music credits beyond the required 50 credits in music add to the number of credits required in the degree. Other requirements include: C or better in all music courses; 2.5 music average; upper-division exam; piano proficiency exam or grade of C or better in Mus 182.

First Year
First Term
Engl 101 [W] (GER) 3
Mus 181 1 0 or 1
Mus 251 2 3
Mus 252 3
Mus Ensemble 4 1
Mus Private Lessons 2
Science Elective (GER) 4

Second Term
Biological Sciences [B] (GER) 4
GenEd 111 [A] (GER) 3
Mus 182 2 0 or 1
Mus 253 4 3
Mus 254 3 1
Mus Ensemble 4 1
Mus Private Lessons 2

Second Year
First Term
Communication [C,W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Mus 351 1 3
Mus 352 1
Mus Ensemble 4 1
Mus Private Lessons 2

Second Term
Mus 353 2 3
Mus 354 4 3
Mus Ensemble 4 1
Mus Private Lessons 2
Physical [P] Sciences (GER) 4

Third Year
First Term
200-400-level Non-Music Electives 6
Arts & Humanities [H,G], Intercultural [I,G,K],
    or Social Sciences [S,K] (GER) 3
Intercultural [I,G,K] (GER) 3
Mus 360 [M] 4 3
Mus Ensemble 4 1
Complete Writing Portfolio

Second Term
200-400-level Non-Music Electives 6
Arts & Humanities [H,G], Intercultural [I,G,K],
    or Social Sciences [S,K] (GER) 3
Mus 361 [M] 4 3
Mus 453 2
Mus Ensemble 4 1
Phil 101 [H] (GER) 3

Fourth Year
First Term
200-400-level Non-Music Electives 8
300-400-level Music Elective 4
Social Sciences [S,K] (GER) 3

Second Term
200-400-level Non-Music Electives 8
300-400-level Music Elective 3
Arts & Humanities [H,G], Intercultural [I,G,K],
    or Social Sciences [S,K] (GER) 3
Tier III Course [T] (GER) 3

1 Music performing group required if enrolled for applied music, but not required in degree or class piano credits; not required in degree.
2 Fall only.
3 Chosen from Mus 428-444.
4 Spring only.
5 Mus 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.

BACHELOR OF MUSIC—BUSINESS OPTION
(120 HOURS)  / FYDA

This four-year program is designed to meet the needs of students wishing professional preparation in music combined with studies in business. Students select one of several minors offered in the College of Business and Economics. Certification of the minor requires prior certification in music. Other requirements include a C or better in all music courses; 2.5 music average; upper-division exam; piano proficiency exam. At least 42 of the hours required for this degree must be 300-400-level courses.

Students following this option are required to present an acceptable senior recital in the major performance medium.

Mus 163 [G] (GER) 3
Mus 360 [M] 4 3
Mus 428 or 435 1
Mus 452 2
Mus Private Lessons 2
Physical Sciences [P] (GER) 4
Secondary Applied or Mus 487 2
Complete Writing Portfolio

First Term
Mus 163 [G] (GER) 3
Mus 360 [M] 4 3
Mus 428 or 435 1
Mus 452 2
Mus Private Lessons 2

Second Term
Arts & Humanities [H,G], Intercultural [I,G,K],
    or Social Sciences [S,K] (GER) 3
Biological Sciences [B] (GER) 4
Business Minor Course 3
Mus 258 2
Mus 361 [M] 4 3
Mus 428 or 435 1
Mus 481 1
Mus Private Lessons 2

Fourth Year
First Term
Arts & Humanities [H,G], Intercultural [I,G,K],
    or Social Sciences [S,K] (GER) 3
Business Minor Courses 7
Mus 496 2
Mus Ensemble 428-444 1
Mus Private Lessons 2

2 Fall only.
3 Chosen from Mus 428-444.
4 Spring only.
### BACHELOR OF MUSIC—ELECTRICAL ENGINEERING AND COMPUTER SCIENCE OPTION

**130 HOURS**

This four-year program is designed to meet the needs of students wishing professional preparation in music combined with studies in electrical engineering and computer science.

Students select one of several minors offered by the School of Electrical Engineering and Computer Science. Certification in the minor requires prior certification in all music courses; 2.5 music average; upper-division exam; and piano proficiency exam.

Students following this option are required to present an acceptable senior half recital in the major performance medium. Students must pass the piano proficiency exam, pass the upper-division exam, and achieve a 2.5 gpa and a grade of C or better in all music classes. Class piano credits are not required for the degree. Certification of the theatre minor requires 90 credits. The theatre minor is a total of 20 credits.

#### First Year

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<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H, G] or Social Sciences [S, K] (GER)</td>
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<td>Mus 163</td>
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<td>Mus 253</td>
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#### Second Year

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<td>Mus 428-444</td>
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<tr>
<td>Electives</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<td>Mus 435 or 428</td>
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<td>Mus Private Lessons</td>
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#### Third Year

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<td>Mus Private Lessons 400-level and senior recital</td>
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<td>Electives</td>
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#### Fourth Year

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### BACHELOR OF MUSIC—THEATRE OPTION

**125 HOURS**

This four-year program is designed to meet the needs of students wishing professional preparation in music combined with studies in theatre. This program offers specialization in music in conjunction with a minor in theatre.

Students following this option are required to present an acceptable senior half recital in the major performance medium. Students must pass the piano proficiency exam, pass the upper-division exam, and achieve a 2.5 gpa and a grade of C or better in all music classes. Class piano credits are not required for the degree. Certification of the theatre minor requires 90 credits. The theatre minor is a total of 20 credits.

#### First Year

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<td>Mus 354</td>
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<tr>
<td>Mus 428</td>
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<td>Mus 452</td>
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<td>Mus Private Lessons</td>
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<td>Mus 360 [M]</td>
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<td>Mus 452</td>
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<td>Mus Private Lessons</td>
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<td>Theat 367 [H] (GER)</td>
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#### Third Year

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<td>Mus 360</td>
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<td>Mus 428</td>
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<tr>
<td>Mus 452</td>
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<td>Mus Private Lessons</td>
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<tr>
<td>Theat 367 [H] (GER)</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Second Term

Mus 361 [M] 1
Mus 428 1
Mus 481 1
Mus Private Lessons 2
Social Sciences [S, K] (GER) 3
Theat 362 3
Theat 496 1

Fourth Year

First Term

300-400-level Mus Elective 2
Biological Sciences [B] (GER) 4
Mus 258 2
Mus 435 1
Mus 452 2
Mus 496 2
Mus Private Lessons 2
Theat 361 3

Second Term

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Mus 361 [M] 1
Mus 453 2
Mus 456 2
Mus 481 1
Mus Ensemble 1
Mus Private Lessons 2
Mus Electives 4
Mus 435 1

Third Year

First Term

Physical Sciences [P] (GER) 4
Mus 360 [M] 1
Mus 451 1
Mus 456 2
Mus 453 1
Mus 456 2
Mus 481 1
Mus Ensemble 1
Mus Private Lessons 2
Mus Electives 4
Mus 435 1

Fourth Year

First Term

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Mus 453 1
Mus 456 2
Mus 481 1
Mus Ensemble 1
Mus Private Lessons 2
Mus Electives 4
Mus 435 1

Second Term

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Mus 361 [M] 1
Mus 453 1
Mus 456 2
Mus 481 1
Mus Ensemble 1
Mus Private Lessons 2
Mus Electives 4
Mus 435 1

Requirements include: upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; and senior recital.

MUSIC COMPOSITION DEGREE

(129 HOURS)

This major offers professional preparation in music with specialization in composition. The curriculum is designed to prepare students in contemporary classical composition and allied fields.

Requirements include: upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; and senior recital.

First Year

First Term

Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Mus 181 1
Mus 251 2
Mus 252 2
Mus Ensemble 1
Mus Private Lessons 2
Social Sciences [S,K] (GER) 3

Second Term

Arts and Humanities [H,G] (GER) 3
Communication [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Mus 182 1
Mus 253 1
Mus 254 1
Mus Elective 1

Second Year

First Term

Arts & Humanities [H,G] (GER) 3
Mus 101 [W] (GER) 3
Mus 181 1
Mus 251 2
Mus 252 2
Mus 253 3
Mus 254 4
Mus 352 2

Second Term

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Intercultural [I,G,K] (GER) 3
Mus 453 1
Mus 456 2
Mus 481 1
Mus Ensemble 1
Mus Private Lessons 2
Mus Electives 4
Mus 435 1

Approved performing groups: a minimum of 1 hour during each of 7 semesters, to include at least one semester of Mus 435 for instrumentalists and 428 for vocalists. Include a minimum of 2 hours in choral and 2 hours in instrumental performing groups.

First Year

First Term

Arts & Humanities [H,G] (GER) 3
Engl 101 [W] (GER) 3
Mus 181 1
Mus 251 2
Mus 252 2
Mus Ensemble 1
Mus Private Lessons 2
Mus Electives 4

Second Term

ComSt 102 [C] (GER) 3
Engl 201 [W] (GER) 3
GenEd 111 [A] (GER) 3
Mus 182 1
Mus 253 3
Mus 254 4
Mus Ensemble 1
Mus Private Lessons 2

Second Year

First Term

GenEd 110 [A] (GER) 3
Mus 281 3
Mus 351 2
Mus 360 3

Second Term

Arts & Humanities [H,G] (GER) 3
Mus 181 1
Mus 251 2
Mus 252 2
Mus 253 3
Mus 254 4
Mus 352 2

1 Class piano credits not required for degree.
2 Fall only.
3 Spring only.
4 Fall only, alternate years.
5 Mus 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.

MUSIC EDUCATION—BROAD ENDEAVOR OPTION

(152 HOURS)

Students following any teacher preparation option are required to present an acceptable senior half recital in the major performance medium.

Students following any teacher preparation option must have a minimum gpa of 2.5 in all of the following areas: cumulative gpa, Professional Education Core with a C or better in each course, and academic major (and minor if any) with a C or better in each course. Students must also certify as majors in the College of Education. Since this option is likely to lead to enrollment in the MA in music, students are advised that admission to graduate study requires a 3.0 cumulative gpa.

Students must pass the piano proficiency exam, pass the upper-division exam, achieve a cumulative 2.5 gpa and a grade of C or better in all music classes, and a 2.5 gpa and a grade of C or better in all College of Education Professional Core courses. Class piano credits are not required for the degree.

Instrumentalists must complete 4 credits in vocal performance studies (private lessons and/or ensemble) and vocalists must complete 4 credits of instrumental performance studies.

This option provides teacher certification in designated arts: music (choral, instrumental, and general). Requirements include: C or better in all music and education courses; 2.5 music average; 2.5 education average; 2.5 overall average; 4 credits vocal performance for instrumentalists; 4 credits instrumental performance for vocalists; upper-division exam; piano proficiency; and solo half-recital.
### School of Music and Theatre Arts

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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<td>Mus 482</td>
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<td>Mus 483</td>
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<td>Mus Private Lessons</td>
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<tr>
<td>T &amp; L 302</td>
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<tr>
<td>T &amp; L 303</td>
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<tr>
<td>T &amp; L 317</td>
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<td>Complete Writing Portfolio</td>
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<td>Mus 480</td>
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<td>Mus 487</td>
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<td>Mus 494</td>
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<td>T &amp; L 478</td>
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<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Mus 435 (instrumentalists) or 428 (vocalists)</td>
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<td>Mus 479</td>
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<td>Mus 480</td>
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### MUSIC EDUCATION—CHORAL/GENERAL ENDORSEMENT OPTION (145 HOURS)

Students following any teacher preparation option are required to present an acceptable senior half recital in the major performance medium.

Students following any teacher preparation option must have a minimum gpa of 2.5 in all of the following areas: cumulative gpa, Professional Education Core with a C or better in each course, and academic major (and minor if any) with a C or better in each course. Students must also certify as majors in the College of Education. Since this option is likely to lead to enrollment in the MA in music, students are advised that admission to graduate study requires a 3.0 cumulative gpa.

Students must pass the piano proficiency exam, pass the upper-division exam, achieve a cumulative 2.5 gpa and a grade of C or better in all music classes, and a 2.5 gpa and a grade of C or better in all College of Education Professional Core courses. Class piano credits are not required for the degree. Instrumentalists must complete 4 credits in vocal performance studies (private lessons and/or ensemble) and vocalists must complete 4 credits of instrumental performance studies.

This option provides teacher certification in designated arts: music (choral, instrumental, and general). Requirements include: C or better in all music and education courses; 2.5 music average; 2.5 or better in all College of Education Professional Core courses. Students following any teacher preparation option must have a minimum gpa of 2.5 in all of the following areas: cumulative gpa, Professional Education Core with a C or better in each course, and academic major (and minor if any) with a C or better in each course. Students must also certify as majors in the College of Education. Since this option is likely to lead to enrollment in the MA in music, students are advised that admission to graduate study requires a 3.0 cumulative gpa.

Students must pass the piano proficiency exam, pass the upper-division exam, achieve a cumulative 2.5 gpa and a grade of C or better in all music classes, and a 2.5 gpa and a grade of C or better in all College of Education Professional Core courses. Class piano credits are not required for the degree. Instrumentalists must complete 4 credits in vocal performance studies (private lessons and/or ensemble) and vocalists must complete 4 credits of instrumental performance studies.

This option provides teacher certification in designated arts: music (choral, instrumental, and general). Requirements include: C or better in all music and education courses; 2.5 music average; 2.5 education average; 2.5 overall average; 4 credits vocal performance for instrumentalists; upper-division exam; piano proficiency; and solo half-recital. Approved performing groups: a minimum of 1 hour during each of 7 semesters, to include at least one semester of Mus 435 for instrumentalists and 428 for vocalists. Include a minimum of 2 hours in choral and 2 hours in instrumental performing groups.

### Music Upper-Division Exam

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
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MUSIC EDUCATION—INSTRUMENTAL/GENERAL ENDORSEMENT OPTION (147 HOURS)

Students following any teacher preparation option are required to present an acceptable senior half recital in the major performance medium. Students following any teacher preparation option must have a minimum gpa of 2.5 in all of the following areas: cumulative gpa, Professional Education Core with a C or better in each course, and academic major (and minor if any) with a C or better in each course. Students must also certify as majors in the College of Education. Since this option is likely to lead to enrollment in the MA in music, students are advised that admission to graduate study requires a 3.0 cumulative gpa.

Students must pass the piano proficiency exam, pass the upper-division exam, achieve a cumulative 2.5 gpa and a grade of C or better in all music classes, and a 2.5 gpa and a grade of C or better in all College of Education Professional Core courses. Class piano credits are not required for the degree. Instrumentalists must complete 4 credits in vocal performance studies (private lessons and/or ensemble) and vocalists must complete 4 credits of instrumental performance studies.

This option provides teacher certification in designated arts: music (choral, instrumental, and general). Requirements include: C or better in all music and education courses; 2.5 music average; 2.5 education average; 2.5 overall average; 4 credits vocal performance for instrumentalists; 4 credits instrumental performance for vocalists; upper-division exam; piano proficiency; and solo half-recital. Approved performing groups: a minimum of 1 hour during each of 7 semesters, to include at least one semester of Mus 435 for instrumentalists and 428 for vocalists. Include a minimum of 2 hours in choral and 2 hours in instrumental performing groups.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
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<td>Mus 181</td>
<td>0 or 1</td>
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<tr>
<td>Mus 251</td>
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<tr>
<td>Mus 252</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble</td>
<td>1</td>
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<tr>
<td>Mus Private Lessons</td>
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<td>Psych 105 [S] (GER)</td>
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<tr>
<td>Engl 201 [W] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>Mus 182</td>
<td>0 or 1</td>
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<td>Mus 253</td>
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Second Year

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<td>Mus 491</td>
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<tr>
<td>Mus Ensemble</td>
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<td>Mus Private Lessons</td>
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</tr>
<tr>
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<table>
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<tbody>
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<td>Mus 354</td>
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<td>Mus 359</td>
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<tr>
<td>Mus 481</td>
<td>1</td>
</tr>
<tr>
<td>Mus 490</td>
<td>4</td>
</tr>
<tr>
<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 301</td>
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<tr>
<td>May Field Experience</td>
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<tr>
<td>Certify Major, Certify T &amp; L</td>
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Third Year

<table>
<thead>
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<th>First Term</th>
<th>Hours</th>
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<tbody>
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<td>Mus Private Lessons</td>
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</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
</tr>
<tr>
<td>T &amp; L 302</td>
<td>2</td>
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<tr>
<td>T &amp; L 303</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 317</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<table>
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<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>EdPsy 402</td>
<td>2</td>
</tr>
<tr>
<td>Mus 361 [M]</td>
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<tr>
<td>Mus Ensemble</td>
<td>1</td>
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<td>Mus Private Lessons</td>
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<td>T &amp; L 400</td>
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Fourth Year

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<td>Mus 163</td>
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<td>Mus 455 or T &amp; L 328</td>
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<tr>
<td>Mus 493</td>
<td>2</td>
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<tr>
<td>T &amp; L 404</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 445</td>
<td>2</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
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<tr>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Mus 480</td>
<td>1</td>
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<td>Mus 487</td>
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<td>T &amp; L 328 or Mus 455</td>
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<tr>
<td>T &amp; L 478</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<td>Ensemble and Mus Private Lessons--optional</td>
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Fifth Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Mus 497</td>
<td>4</td>
</tr>
<tr>
<td>T &amp; L 415</td>
<td>12</td>
</tr>
</tbody>
</table>

1 Class piano credits not required in degree.
2 Fall only.
3 Spring only.
4 Mus 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.
5 T & L 328 required for degree; Mus 455 required.

MUSIC EDUCATION—WITHOUT TEACHING CERTIFICATE OPTION (122 HOURS)

Students following any teacher preparation option are required to present an acceptable senior half recital in the major performance medium. Students following any teacher preparation option must have a minimum gpa of 2.5 in all of the following areas: cumulative gpa, Professional Education Core with a C or better in each course, and academic major (and minor if any) with a C or better in each course. Students must also certify as majors in the College of Education. Since this option is likely to lead to enrollment in the MA in music, students are advised that admission to graduate study requires a 3.0 cumulative gpa.

Students must pass the piano proficiency exam, pass the upper-division exam, achieve a cumulative 2.5 gpa and a grade of C or better in all music classes, and a 2.5 gpa and a grade of C or better in all College of Education Professional Core courses. Class piano credits are not required for the degree. Instrumentalists must complete 4 credits in vocal performance studies (private lessons and/or ensemble) and vocalists must complete 4 credits of instrumental performance studies.

This option provides teacher certification in designated arts: music (choral, instrumental, and general). Requirements include: C or better in all music and education courses; 2.5 music average; 2.5 education average; 2.5 overall average; 4 credits vocal performance for instrumentalists; 4 credits instrumental performance for vocalists; upper-division exam; piano proficiency; and solo half-recital. Approved performing groups: a minimum of 1 hour during each of 7 semesters, to include at least one semester of Mus 435 for instrumentalists and 428 for vocalists. Include a minimum of 2 hours in choral and 2 hours in instrumental performing groups.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Mus 281</td>
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<tr>
<td>Mus 351</td>
<td>3</td>
</tr>
<tr>
<td>Mus 352</td>
<td>1</td>
</tr>
<tr>
<td>Mus 491</td>
<td>2</td>
</tr>
<tr>
<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>T &amp; L 300</td>
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<table>
<thead>
<tr>
<th>Second Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Mus 353</td>
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<tr>
<td>Mus 354</td>
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<td>Mus 359</td>
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<tr>
<td>Mus 481</td>
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<tr>
<td>Mus 490</td>
<td>4</td>
</tr>
<tr>
<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 301</td>
<td>2</td>
</tr>
<tr>
<td>May Field Experience</td>
<td>2</td>
</tr>
<tr>
<td>Certify Major, Certify T &amp; L</td>
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Second Year

<table>
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<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Mus 360 [M]</td>
<td>3</td>
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<td>Mus Ensemble</td>
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<td>Mus Private Lessons</td>
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<tr>
<td>Science Elective (GER)</td>
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<tr>
<td>T &amp; L 302</td>
<td>2</td>
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<tr>
<td>T &amp; L 303</td>
<td>2</td>
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<tr>
<td>T &amp; L 317</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<table>
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<tr>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<tr>
<td>EdPsy 402</td>
<td>2</td>
</tr>
<tr>
<td>Mus 361 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Mus Ensemble</td>
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</tr>
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<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 400</td>
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Third Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
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<td>Mus 360 or T &amp; L 328</td>
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<td>Mus 467</td>
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<td>Mus 493</td>
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<td>T &amp; L 404</td>
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<td>T &amp; L 445</td>
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<td>Second Term</td>
<td>Hours</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<td>Mus 480</td>
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<td>Mus 487</td>
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<td>Mus 494</td>
<td>2</td>
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<tr>
<td>T &amp; L 328 or Mus 455</td>
<td>2</td>
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<td>T &amp; L 478</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<td>Ensemble and Mus Private Lessons--optional</td>
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Fifth Year

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<tbody>
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<tr>
<td>T &amp; L 415</td>
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</tbody>
</table>

1 Class piano credits not required in degree.
2 Fall only.
3 Spring only.
4 Mus 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.
5 T & L 328 required for degree; Mus 455 required.
<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biological Science [B] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<td>ComSt 102 [C] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<tr>
<td>MUS 182 1</td>
<td>0 or 1</td>
<td>MUS 253 1</td>
<td>1</td>
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<tr>
<td>MUS 254 1</td>
<td>1</td>
<td>MUS Private Lessons 2</td>
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</table>

1 Class piano credits not required in degree.

2 Fall only.

3 Spring only.

4 Must apply to Graduate School for admission; election of this bachelor's degree does not guarantee acceptance into the MA program.

**MUSIC PERFORMANCE—BRASS, PERCUSSION, STRINGS, WINDS OPTION (130 HOURS)** FYDA

Requirements include: upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; and junior and senior recitals.

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**First Year**

<table>
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<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>MUS 258 2</td>
<td>2</td>
<td>MUS 360 [M] 34</td>
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<td>MUS 360 or T &amp; L 328 3</td>
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<td>MUS 455 or T &amp; L 328 3</td>
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<td>MUS Ensemble (Choral)</td>
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<td>MUS Private Lessons 2</td>
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<td>MUS Private Lessons</td>
<td>2</td>
<td>T &amp; L 302</td>
<td>2</td>
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<td>T &amp; L 304</td>
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<td>T &amp; L 317</td>
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<tr>
<td>Complete Writing Portfolio</td>
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</tbody>
</table>

4 Must 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.

5 Spring only.

6 If pursuing the MA, then take Mus 588 and apply to count toward MA degree.

7 Must apply to Graduate School for admission; election of this bachelor's degree does not guarantee acceptance into the MA program.

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**Second Year**

<table>
<thead>
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<th>Second Term</th>
<th>Hours</th>
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<td>0 or 1</td>
<td>MUS 182 4</td>
<td>0 or 1</td>
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<td>MUS 251 2</td>
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<td>MUS 254 2</td>
<td>3</td>
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<tr>
<td>MUS 252 2</td>
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</tr>
<tr>
<td>MUS Ensemble 1</td>
<td>1</td>
<td>MUS Private Lessons 4</td>
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<td>MUS Private Lessons</td>
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<td>Science Elective (GER)</td>
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**Third Year**

<table>
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<tr>
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<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
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<tr>
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<td>MUS 480 1</td>
<td>1</td>
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<td>MUS 487 (in MA degree) 5</td>
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<td>MUS 494 (in MA degree) 5</td>
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<tr>
<td>MUS 550 or 500 (in MA degree) 5</td>
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<td>MUS 575 (in MA degree) 5</td>
<td>1</td>
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<tr>
<td>MUS 589 (in MA degree) 5</td>
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</table>

1 Class piano credits not required.

2 Fall only.

3 Chosen from Mus 428-444.

4 Courses are taught alternate years.

5 Spring only.

6 Must 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.

7 One credit of pedagogy is required in respective area: woodwind (392), Percussion (393) or Brass (394).

**MUSIC PERFORMANCE—FLUTE, SAXOPHONE, PERCUSSION, AND TRUMPET (JAZZ STUDIES) (127 HOURS)** FYDA

This option with an emphasis in jazz is available to students whose major instruments are flute, saxophone, percussion, or trumpet.

Requirements include: upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; and junior and senior recitals.

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>MUS 103</td>
<td>2</td>
<td>MUS 163 [G] (GER)</td>
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<tr>
<td>MUS 353 3</td>
<td>3</td>
<td>MUS 354 3</td>
<td>3</td>
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<td>MUS 359 3</td>
<td>3</td>
<td>MUS 490 3</td>
<td>4</td>
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<td>MUS Ensemble (Instrumental)</td>
<td>1</td>
<td>MUS Ensemble 1</td>
<td>1</td>
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<tr>
<td>MUS Private Lessons</td>
<td>2</td>
<td>MUS Private Lessons 4</td>
<td>4</td>
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<tr>
<td>T &amp; L 300</td>
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<td>Science Elective (GER)</td>
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8 Mus 465 1 | 2 | Mus 465 | 2 |

9 Mus 481 1 | 1 | Mus 481 1 | 1 |

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**Fourth Year**

<table>
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<td>MUS 302 or 393 or 394 6</td>
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<td>MUS 455 3</td>
<td>2</td>
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<td>MUS Ensemble 1</td>
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<td>Music Electives</td>
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<tr>
<td>Tier II Course [T] (GER)</td>
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<tr>
<td>MUS 163</td>
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</table>

1 Class piano credits not required.

2 Fall only.

3 Chosen from Mus 428-444.

4 Courses are taught alternate years.

5 Spring only.

6 Must 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.

7 One credit of pedagogy is required in respective area: woodwind (392), Percussion (393) or Brass (394).

---

**Notes**

- 1 Class piano credits not required in degree.
- 2 Fall only.
- 3 Chosen from Mus 428-444.
- 4 Courses are taught alternate years.
- 5 Spring only.
- 6 Must 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.
- 7 One credit of pedagogy is required in respective area: woodwind (392), Percussion (393) or Brass (394).
### Second Term

<table>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Mus 181</td>
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<tr>
<td>Mus 254</td>
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#### Second Year

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<tr>
<td>Mus Private Lessons</td>
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<tr>
<td>Communication [C,W] (GER)</td>
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<td>Mus 257</td>
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<td>Mus 351</td>
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<td>Mus 352</td>
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</tr>
<tr>
<td>Mus Ensemble</td>
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<tr>
<td>Second Term</td>
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<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Mus 281</td>
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#### Third Year

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<td>Math Proficiency [N] (GER)</td>
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<td>Mus 458</td>
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<tr>
<td>Mus 481</td>
<td>1</td>
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<tr>
<td>Mus Ensemble</td>
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<tr>
<td>Second Term</td>
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<tr>
<td>Mus Private Lessons</td>
<td>4</td>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
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<td>Mus 353</td>
<td>3</td>
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<tr>
<td>Mus 354</td>
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<tr>
<td>Mus 441</td>
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<td>Mus 486</td>
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<td>Physical Sciences [P] (GER)</td>
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#### Fourth Year

<table>
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<td>Biological Sciences [B] (GER)</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Mus 362</td>
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<td>Mus 457</td>
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<td>Mus Private Lessons</td>
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<td>Mus 482</td>
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<td>Mus Electives</td>
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### First Year

#### First Term

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<tr>
<td>Mus 251</td>
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<td>Mus 351</td>
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<tr>
<td>Mus 441</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>1</td>
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<tr>
<td>Science Elective (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
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</tr>
<tr>
<td>Biological Science [B] (GER)</td>
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</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>Mus 254</td>
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</tr>
<tr>
<td>Mus 441</td>
<td>1</td>
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<tr>
<td>Mus Private Lessons</td>
<td>4</td>
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### Second Year

#### First Term

<table>
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<tr>
<th>Course Code</th>
<th>Hours</th>
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<tbody>
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<td>Communication [C,W] (GER)</td>
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<tr>
<td>genEd 110 [A] (GER)</td>
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<tr>
<td>Mus 351</td>
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<td>Mus 352</td>
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<tr>
<td>Mus 441</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
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</tr>
<tr>
<td>Social Science [S, K] (GER)</td>
<td>3</td>
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<td>Second Term</td>
<td></td>
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<tr>
<td>Mus 353</td>
<td>3</td>
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<tr>
<td>Mus 354</td>
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<tr>
<td>Mus 441</td>
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<tr>
<td>Mus 486</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
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#### Third Year

#### First Term

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<th>Course Code</th>
<th>Hours</th>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Mus 360 [M]</td>
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<td>Mus 435</td>
<td>1</td>
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<td>Mus 465</td>
<td>2</td>
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<tr>
<td>Mus Private Lessons</td>
<td>4</td>
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<tr>
<td>Complete Writing Portfolio</td>
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#### Second Term

<table>
<thead>
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<th>Course Code</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], or Social Science [S, K] (GER)</td>
<td>3</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 361 [M]</td>
<td>1</td>
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<td>Mus 441</td>
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<td>Mus 453</td>
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<td>Mus 481</td>
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<td>Mus Private Lessons</td>
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#### Fourth Year

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<th>Hours</th>
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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
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<tr>
<td>Mus 441</td>
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<td>Mus 451</td>
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### Music Performance—Keyboard Option (129 Hours)

**MUSIC PERFORMANCE—KEYBOARD OPTION (129 HOURS) **

#### First Term

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<td>Mus 441</td>
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<td>Mus Private Lessons</td>
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#### Second Term

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<td>Biological Science [B] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<td>Mus 253</td>
<td>3</td>
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<tr>
<td>Mus 254</td>
<td>1</td>
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<tr>
<td>Mus 441</td>
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<td>Mus Private Lessons</td>
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### Third Year

#### First Term

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<th>Hours</th>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Mus 360 [M]</td>
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<td>Mus 435</td>
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<td>Mus 465</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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#### Second Term

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<td>Math Proficiency [N] (GER)</td>
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<td>Mus 361 [M]</td>
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<tr>
<td>Mus 441</td>
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<td>Mus 453</td>
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<td>Mus 481</td>
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<td>Mus Private Lessons</td>
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### Fourth Year

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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
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<td>Mus 441</td>
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<td>Mus 451</td>
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### Music Performance—Keyboard with Elective Studies in Pedagogy Option (129 Hours)

**MUSIC PERFORMANCE—KEYBOARD WITH ELECTIVE STUDIES IN PEDAGOGY OPTION (129 HOURS) **

#### First Term

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<td>Mus 251</td>
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<td>Mus 252</td>
<td>1</td>
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<td>Mus 441</td>
<td>1</td>
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<tr>
<td>Mus Private Lessons</td>
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<td>Music Electives</td>
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#### Second Term

<table>
<thead>
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<th>Course Code</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
<td>3</td>
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<tr>
<td>Biological Science [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 253</td>
<td>3</td>
</tr>
<tr>
<td>Mus 254</td>
<td>1</td>
</tr>
<tr>
<td>Mus 441</td>
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<tr>
<td>Mus Private Lessons</td>
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<td>Science Elective (GER)</td>
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#### Fourth Year

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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<td>Mus 360 [M]</td>
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<td>Mus 361 [M]</td>
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<td>Psych 105 [S] (GER)</td>
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### Third Year

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<tbody>
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<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
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<tr>
<td>Mus 353</td>
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<td>Mus 354</td>
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<td>Mus 359</td>
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</tr>
<tr>
<td>Mus 441</td>
<td>1</td>
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<tr>
<td>Mus 486</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
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</tbody>
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---

1 Fall only.
2 Spring only.
3 Mus 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.
4 Courses are taught alternate years.

---

1 Fall only.
2 Class piano credits not required in degree.
3 Spring only.
4 Mus 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.
5 Courses are taught alternate years.
First Year

**First Term**
- Arts & Humanities [H,G] (GER) 3
- Biological Sciences [B] (GER) 4
- Mus 361 [M] 3
- Mus 441 1
- Mus 481 1
- Mus 498 2
- Mus Private Lessons 4

**Second Term**
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER) 3
- GenEd 111 [A] (GER) 3
- Mus 182 1
- Mus 253 1
- Mus 254 1
- Mus Ensemble 1
- Mus Private Lessons 4

**Fourth Year**

**First Term**
- EdPsy 361/490, T & L 301 3
- Mus 441 1
- Mus 451 1
- Mus 465 1
- Mus 499 1
- Mus Private Lessons 4
- Secondary Instrument 2

**Second Term**
- Arts & Humanities [H,G] (GER) 3
- Mus 441 1
- Mus 453 2
- Mus 499 1
- Mus Private Lessons 4
- Physical Sciences [P] (GER) 4
- Tier III Course [T] (GER) 3
- Electives 2

**Third Year**

**First Term**
- Foreign Language 4
- Mus 428 1
- Mus 491 1
- Mus Private Lessons 4
- Physcial Sciences [P] (GER) 4
- Social Science [S, K] (GER) 3
- Complete Writing Portfolio 3

**Second Term**
- Arts & Humanities [H,G] (GER) 3
- Foreign Language 4
- Mus 371 or 372 2
- Mus 428 1
- Mus 543 1
- Mus 481 1
- Mus Private Lessons 4
- Elective 1

**Fourth Year**

**First Term**
- Biological Science [B] (GER) 4
- Intercultural [I,G,K] (GER) 3
- Mus 360 [M] 3
- Mus 465 2
- Mus 483 2
- Mus Ensemble 1
- Mus Private Lessons 4

**Second Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Mus 361 [M] 3
- Mus Ensemble 1
- Mus Private Lessons 4
- Tier III Course [T] (GER) 3
- Electives 4

**Music Minor and Supporting Teaching Endorsements**

Choose one of the following options:
- Option 1 includes Mus 151 or 152 and 2 credits from Mus 181, 182, 281 or 2 credits from Mus 102, 202, 302.
- Option 2 includes Mus 251 and 252.

Both options also include Mus 160 or 161, and one course from Mus 265, 362, Mus 163, 363, or 262, Theat 367; 4 credits of performance studies, 4 credits performing groups; and 4 credits 300-400-level music electives. Also available are supporting teaching endorsements in music for students whose primary teaching endorsements are in other majors.

**Description of Courses**

**Music Courses**

**MUS**

**102 Piano**

**103 Voice**

**151 Music Fundamentals I**
- Notation and performance of music fundamentals: pitch, rhythm, scales, key signatures, and intervals.

**152 Music Fundamentals II**
- PreReq Mus 151. Notation and performance of music fundamentals: melody, rhythm, scales, intervals, key signatures, triads; preparatory for Mus 251.

**153 [H] Musical Style in Composition**
- Introduction to musical style in composition, history, and analysis including theory fundamentals, history survey, and beginning composition.

**160 [H] Survey of Music Literature**
- Exploration of predominantly western music through demonstrations, performances, lectures, concerts, and discussions.

**163 [G] World Music**
- Exploration of music from a global perspective through demonstrations, performances, lectures and discussion.

**181 Class Piano I**
- (0-3) May be repeated for credit; cumulative maximum 2 hours. For music majors/minors and elementary education majors only. By audition only. Pedal, sightreading, transposition, playing by ear, chord progressions, melody, harmony and improvisation.

**182 Class Piano II**
- (0-3) May be repeated for credit; cumulative maximum 2 hours. By audition only. Continuation of Mus 181. Scales, arpeggios, blocked and broken chords; repertoire to complement individual skills, theoretical knowledge and improvisation.

**201 Organ**

**202 Piano**

**203 Voice**
- PreReq c// in Mus 431, 432, or by interview only.

**204 Horn**

**205 Trumpet**

**206 Trombone**

**207 Baritone**

**208 Tuba**
252 Applied Theory I
251 Materials and Structures of Music I
218 Saxophone
217 Bassoon
216 Clarinet
214 Flute
213 Contrabass
212 Violoncello
211 Viola
209 Percussion
210 Violin
211 Viola
212 Violoncello
213 Contrabass
214 Flute
215 Oboe
216 Clarinet
217 Bassoon
218 Saxophone
251 Materials and Structures of Music I
By examination. Overtones, melody, rhythm, intervals, tonality, modality, penta-scales, two-voiced counterpoint, analytical techniques, composition.

252 Applied Theory I 1 (0-3) By examination. Ear training, conducting, rhythmic reading, sight singing, keyboard, dictation.

253 Materials and Structures of Music II 1 Prereq Mus 251, 252. Writing, analysis of three- and four-voiced homophonic and contrapuntal music, diatonic emphasis, seventh chords, modulation.

254 Applied Theory II 1 (0-3) Prereq c// in Mus 253. Ear training, sight singing, keyboard.

256 Seminar in Composition 1 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 254. By interview only. Original writings in small forms.

257 Jazz Theory 2 Introduction to jazz theory; chord symbols, extended harmony, scales and modes, voicings, bass lines and substitutions.

258 Introduction to Jazz Improvisation 2 May be repeated for credit; cumulative maximum 4 hours. Introduction to jazz improvisation.

262 [H] Rock Music: History and Social Analysis 3 History and analysis of rock music related to its African American origins, its societal role, and its diverse development and impact.


275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

281 Class Piano III 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Prereq Mus 182. By audition only. Principles, functional keyboard and improvisation.

301 Organ
302 Piano
303 Voice (for 303 and 403, Prereq c// in Mus 431, 432, or by interview only.)

304 French Horn
305 Trumpet
306 Trombone
307 Baritone
308 Tuba
309 Percussion

310 Violin
311 Viola
312 Violoncello
313 Contrabass
314 Flute
315 Oboe
316 Clarinet
317 Bassoon
318 Saxophone

319 Secondary Performance Study 2 (0-4) May be repeated for credit; cumulative maximum 12 hours. Prereq music major. Instruction on instruments or voice other than major performing medium.

351 Materials and Structures of Music III 3 Prereq Mus 253, 254. Vertical, linear and formal relationships of chromatic music; writing, analysis, coordinated with aural study.

352 Applied Theory III 1 (0-3) Prereq Mus 254. Continued musical development in ear training, sight singing, applied theory, keyboard dictation.

353 Materials and Structures of Music IV 3 Prereq Mus 351. Vertical, linear and formal relationships of 20th century music; writing, analysis, listening.

354 Applied Theory IV 1 (0-3) Prereq Mus 352. Continued development in ear training, sight singing, keyboard and dictation, emphasizing 20th century music.


362 [H,D] History of Jazz 3 History of jazz in chronological sequence; social and political contexts of the African-American origins of jazz; stylistic developments.


364 Introduction to Sound Recording Technology 3 Music, audio and recording technology throughout history and its influence on society and culture.

370 Topics—Study Abroad 3 Special topics in music taught in NCSA study abroad programs.

371 Diction for Singers I 2 Italian and English; International Phonetic Alphabet; fundamental diction principles, applied to each language and oriented to needs of the singer.

372 Diction for Singers II 2 French and German; International Phonetic Alphabet; fundamental diction principles, applied to each language and oriented to needs of the singer.

388 Music for the Classroom Teacher 2 For elementary education majors. Prereq Mus 153 or satisfactory score on music fundamentals test administered by music faculty; admission to Teacher Certification Program. Singing, movement, listening and instrumental methods/resources for K-8 grades.

392 Woodwind Pedagogy 1 (0-4) Prereq certified major in performance. Pedagogy, methods and techniques for woodwind instruments; fundamental approaches to teaching woodwind instruments.

393 Percussion Pedagogy 1 (0-4) Prereq certified major in performance. Pedagogy, methods and techniques for woodwind instruments; fundamental approaches to teaching percussion instruments.

394 Brass Pedagogy 1 (0-4) Prereq certified major in performance. Pedagogy, methods and techniques for woodwind instruments; fundamental approaches to teaching brass instruments.

401 Organ
402 Piano
403 Voice (for 303 and 403, Prereq c// in Mus 431, 432, or by interview only.)

404 French Horn
405 Trumpet
406 Trombone
407 Baritone
408 Tuba
409 Percussion
410 Violin
411 Viola
412 Violoncello
413 Contrabass
414 Flute
415 Oboe
416 Clarinet
417 Bassoon

418 Saxophone

428 Opera Workshop 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performance may be required.

429 Crimson Company Quartet 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. SATB. All styles of popular music; public performances required.

430 Crimson Company Show Choir 2 (0-8) May be repeated for credit; cumulative maximum 16 hours. By audition only. Popular music; performances with choreography. Public performances required.

431 Concert Choir 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.
432 University Singers 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Public performance may be required.

433 Vocal Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performance may be required.

434 Symphony Orchestra 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Orchestral literature and public performance each semester.

435 Chamber Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performance may be required.

436 Symphonic Band 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances.

437 Wind Symphony 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

438 Jazz-Lab Band 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

439 Vocal Jazz Ensemble 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

440 Jazz Combos 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

441 Accompanying 1 (0-4) May be repeated for credit; cumulative maximum 8 hours.

444 Marching Band/Varsity Band 1 May be repeated for credit; cumulative maximum 8 hours. By audition only.

451 Seminar in Counterpoint 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 353. Contrapuntal techniques of the 16th and 18th century with original stylistic writing.

452 Electronic Music 2 (1-3) Prereq Mus 353. Introduction to computer-controlled digital, analog, and sampling synthesis; topics include sequencing, waveform editing, and creative projects.

453 Form and Analysis 2 Prereq Mus 353. Organization of musical works according to the relationships in sectional divisions, thematic divisions, and tonal bases.

455 Seminar in Instrumentation 2 May be repeated for credit. Prereq Mus 352. Scoring for various instrumental combinations.

456 Seminar in Advanced Composition V 1-3 May be repeated for credit. Prereq upper-level composition review. Original writing in small and large forms (traditional and experimental).

457 Seminar in Jazz Arranging/Composition 2 Prereq Mus 257. Arranging and composing for instrumental jazz ensembles.

458 Advanced Jazz Improvisation 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 258. Advanced concepts in jazz improvisation.

459 Seminar in Advanced Jazz Composition V 1-3 (1) Prereq Mus 457 or permission. May be repeated for credit; cumulative maximum 12 hours. Creation of works for Jazz Ensembles. Credit not granted for both Mus 459 and 559.

465 Seminar in Major Performance Literature 2 May be repeated for credit; cumulative maximum 6 hours. Prereq Mus 351 or c//. Survey/performance of solo and chamber literature for voice, keyboard, strings, winds, brass, and percussion.

467 Marching and Jazz Techniques 1 Prereq Mus 253. In-depth experience with planning, designing and arranging marching band shows and jazz ensemble concerts using traditional and contemporary techniques.

470 Marketing and Promotion for the Performing Arts 2 (1-3) Components and techniques used in the marketing and promotion of the performing arts and the entertainment industry.

475 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

480 Instrumental Music Education 1 Philosop-phies, administration, organization, materials and methods for instrumental music education K-12.

481 Fundamentals of Conducting 1 (0-3) Prereq Mus 254. Basic techniques, patterns, prepa-rations and releases; musical styles and score reading for beginning conductors.

482 Instrumental Conducting 1 (0-3) Prereq Mus 481. Score preparation of orchestra and band literature; transpositions; clefs; rehearsal techniques for instrumental ensembles.

483 Choral Conducting 1 (0-3) Prereq Mus 481. Conducting choral and vocal jazz ensembles.

487 String Techniques 2 (0-6) String techniques, materials and methods for music education majors.

488 Choral Methods and Materials 1 2 (0-6) Prereq Mus 490. Preparation in the adminis-tration of choral programs from auditions to the selection and rehearsal of choral litera-ture. Credit not granted for both Mus 488 and 588.

489 Choral Methods and Materials 2 2 Prereq Mus 488. Development of skills in choral arranging, curriculum construction, research, and job placement. Credit not granted for both Mus 489 and 589.

490 General Music Material/Methods 4 (3-2) Prereq Mus 491. Materials and methods for general music education majors; multiculturalism, collaboration, developmental curriculum and research issues; addressing national standards; observations. Credit not granted for both Mus 490 and 590.

491 Voice Pedagogy 2 (1-3) Anatomy of the singing process; methodology of teaching voices in various learning and teaching styles. Credit not granted for both Mus 491 and 591.

493 Wind and Percussion Techniques I 2 (0-6) Prereq Mus 481. Brass, woodwind, and percus-sion techniques for music education majors.

494 Wind and Percussion Techniques II 2 (0-6) Prereq Mus 493. Brass, woodwind and percussion techniques; elementary instrument conducting for music education majors.

496 Topics in Music V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq permission of program coordinator. Advanced seminar with required projects in music history, literature, pedagogy, theory, composition or performance.

497 Directed Student Teaching in Music V 4-16 Prereq make application and pay certification fees; complete all other coursework for the degree and teacher certificate; receive fingerprint clearance from Washington state Patrol, FBI and Office of Professional Practices; maintain 2.5 g.p.a. overall and in endorsement area and professional core courses. Placement by interview only at approved sites. Supervised teaching in public schools, including seminars reflecting on effective teaching. S, F grading.

498 Piano Pedagogy Practicum 2 Piano Pedagy Practicum 2 Supervised teaching in Piano Preparatory Lab School, including lesson planning and meetings with coordinator for critiques and suggestions. May be repeated for credit; cumulative maximum 6 hours. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Organ

502 Piano

503 Voice (for 303 and 403, Preq c// in Mus 431, 432, or by interview only.)

504 French Horn

505 Trumpet

506 Trombone

507 Baritone

508 Tuba

509 Percussion

510 Violin

511 Viola

512 Violoncello

513 Contrabass

514 Flute

515 Oboe

516 Clarinet

517 Bassoon

518 Saxophone

519 Secondary Performance Study 1 or 2 May be repeated for credit, cumulative maximum 6 hours. Prereq bachelor’s degree in music. Instruction on instruments or voice other than major performing medium.
522 Graduate Recital 2 May be repeated for credit; cumulative maximum 4 hours. Private screening and public performance as required within each performance emphasis.

528 Opera Workshop 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 428; additional requirements.

531 Concert Choir 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 431; additional requirements.

533 Vocal Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 433; additional requirements.

534 Symphony Orchestra 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 434; additional requirements.

535 Chamber Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 435; additional requirements.

537 Wind Symphony 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 437; additional requirements.

538 Jazz-Lab Band 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 438; additional requirements.

539 Vocal Jazz Ensemble 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Graduate-level counterpart of Mus 439; additional requirements.

540 Jazz Combos 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Graduate-level counterpart of Mus 440; additional requirements.

541 Accompanying 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 441; additional requirements.

550 Seminar in Analysis 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 453 or c/. Required of all graduate students. Applications of analytical techniques to develop a basis for musical understanding and interpretation.

553 Seminar in Music Theory 2 May be repeated for credit; cumulative maximum 4 hours.

556 Graduate Seminar in Advanced Composition V 2 (1-2) or 3 (1-4) May be repeated for credit; cumulative maximum 10 hours. Prereq by interview only. The creation of works for either traditional acoustic ensembles or electro-acoustic media.

559 Seminar in Advanced Jazz Composition V 1-3 May be repeated for credit; cumulative maximum 12 hours. Graduate-level counterpart of Mus 459; additional requirements. Credit not granted for both Mus 459 and 559.

560 Introduction to Graduate Studies in Music 2 Required of all graduate students in music. Basic bibliographic and research techniques; written presentations related to area of emphasis.

561 Seminar in Literature of 20th Century Music 2 Prereq Mus 351. Impressionism, expressionism, neoclassicism, neoromanticism, jazz and recent electronic music.

562 Symphonic Literature 2 Symphony orchestra and symphonic form from its beginning to modern times studied from the score.

565 Seminar in Major Performance Literature 2 Prereq Mus 351 or c/. May be repeated for credit; cumulative maximum 6 hours. Survey/performance of solo & chamber literature for voice, keyboard, strings, winds, brass, percussion, choral, band, orchestra.

566 Seminar in Music History 2 May be repeated for credit; cumulative maximum 6 hours. Prereq Mus 361. Various historic periods and composers.

580 Instrumental Music Education 3 Prereq Mus 490/590. Graduate counterpart of Mus 480; additional requirements. Credit not granted for both Mus 480 and 580.


588 Choral Methods and Materials I 2 (0-6) Prereq Mus 490. Preparation in the administration of choral programs from auditions to the selection and rehearsal of choral literature.

589 Choral Methods and Materials II 2 Graduate-level counterpart of Mus 489; additional requirements. Credit not granted for both Mus 489 and 589.

590 General Music/Materials/Methods 4 Graduate-level counterpart of Mus 490; additional requirements. Credit not granted for both Mus 490 and 590.

591 Vocal Pedagogy 2 (1-3) Prereq graduate standing. Graduate-level counterpart of Mus 491; additional requirements. Credit not granted for both Mus 491 and 591.

596 Topics for Music V 1-4 Varying subjects offered at graduate level.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Theatre Arts and Drama

libarts.wsu.edu/musicandtheatre/
Kimbrough 260
509-335-3898

Professor and Theatre Arts and Drama Coordinator, L. J. Harris; Professor, T. Converse; Instructors P. Gooden-Young, S. Brown, D. Bourland, J. Carlson, B. Gonzalez.

The Theatre Arts and Drama Program provides theatre students with a foundation of studies in production, history, and analysis of the theatre arts within a liberal arts context. As an integral part of the academic program, WSU Theatre presents a regular schedule of productions by faculty and students. The undergraduate curriculum offers a well-rounded background in all of the major disciplines of theatre.

Graduating students are expected to: (1) have the necessary fundamental skills to achieve employment in professional or academic theatre; (2) communicate effectively, both verbally and in writing, about their chosen field of study; (3) engage in competent historical, critical, and technological research in all major relevant areas of theatre; (4) understand the theoretical bases of their chosen discipline; and (5) develop creative approaches to problem-solving in the discipline.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

THEATRE ARTS AND DRAMA—GENERAL OPTION

(120 HOURS)

Students pursuing a teaching endorsement option must have a minimum gpa of 2.5 in all of the following areas: cumulative GPA, Professional Education Core with a C or better in each course, and academic major with a C or better in each course (and minor if any). Students certifying as majors in teacher endorsement curricula must also certify as majors in the College of Education.

First Year

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Theat 145</td>
<td>3</td>
</tr>
<tr>
<td>Theat 260</td>
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Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Communication Proficiency [C, W] (GER)</td>
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</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Theat 163</td>
<td>3</td>
</tr>
<tr>
<td>Theat 360</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>1</td>
</tr>
</tbody>
</table>
Arts & Humanities [H,G], Intercultural [I,G,K], Second Term Hours
Theat 450 or 462 3
Theat 313 3
Social Sciences [S,K] (GER) 3
GenEd 110 [A] (GER) 3
Mus 203 or 303 2
Mus 251 3
Mus 252 1
Theat 260 3
Second Term Hours
Choral Ensemble 1
Communication Proficiency [C, W] (GER) 3
GenEd 111 [A] (GER) 3
Mus 203 or 303 2
Mus 253 3
Mus 254 1
Science Elective (GER) 4

Third Year
First Term Hours
Geol 101 [P] (GER) 4
Theat 261 3
Theat 362 3
Theat 365 3
Theat 496 1
Complete Writing Portfolio
Second Term Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER) 3
Theat 264 or 294 2
Theat 361 3
Theat 366 3
Theat 496 1
Elective 1

Fourth Year
First Term Hours
Theat 364 or 461 3
Theat 401 or 465 3
Theat 402 1
Tier III Course [T] (GER) 3
Electives 6
Second Term Hours
Shakespeare [H] (GER) recommended 3
Theat 402 1
Theat 467 1
Theat 496 1
Elective 1

Theat 496 1
Theat 163 3
Mus 203 or 303 2
Mus 251 3
Mus 252 1
Theat 260 3
Second Term Hours
Choral Ensemble 1
Communication Proficiency [C, W] (GER) 3
GenEd 111 [A] (GER) 3
Mus 203 or 303 2
Mus 253 3
Mus 254 1
Science Elective (GER) 4

THEATRE ARTS AND DRAMA—MUSICAL THEATRE OPTION (120 HOURS)
Students seeking the Bachelor of Arts in Theatre Arts and Drama must complete the General Education Requirements plus those for the College of Liberal Arts. Students pursuing a teaching endorsement option must have a minimum gpa of 2.5 in all of the following areas: cumulative gpa, Professional Education Core with a C or better in each course, and academic major with a C or better in each course (and minor if any). Students certifying as majors in teacher endorsement curricula must also certify as majors in the College of Education.

First Year
First Term Hours
Choral Ensemble 1
Engl 101 [W] (GER) 3

First Year
First Term Hours
GenEd 110 [A] (GER) 3
Mus 203 or 303 2
Mus 251 3
Mus 252 1
Theat 260 3
Second Term Hours
Choral Ensemble 1
Communication Proficiency [C, W] (GER) 3
GenEd 111 [A] (GER) 3
Mus 203 or 303 2
Mus 253 3
Mus 254 1
Science Elective (GER) 4

Minors
Theatre
A theatre minor requires 17 credits of which a minimum of half must be at the 300-400-level. Required core courses include Theat 260 or 261, 163 or 363, 365 or 366, and 496; and 6 credits of theatre electives.

Description of Courses
Dance Courses
Dance
210 Jazz Dance I 1 (0-3) Basic jazz dance techniques, stage choreography, and performance.
211 Modern Dance I 1 (0-3) Basic modern dance techniques, stage choreography, and performance.
310 Jazz Dance II 1 (0-3) Prereq audition required. Advanced jazz dance techniques, stage choreography, and performance.
311 Modern Dance II 1 (0-3) Prereq two years prior dance experience. Advanced modern dance techniques, stage choreography, and performance.

Theatre Arts Courses
Theat
145 [G] Contemporary World Theatre 3 Prereq access to email and the web. Examination of contemporary theatrical works illustrating the clash which occurs when people of one culture live in another. Access to email and Web required.
150 Film History 3 Survey of world cinema throughout the century; emphasis on cultural and historical conditions that influenced development of specific genres and practitioners.
160 [H] Introduction to Theatre 3 Drama as prepared and presented for cinema, television, and stage.
163 Theatre Technology: An Introduction 3 (2-3) Introduction to the technical support for theatrical productions: scenery, lighting, sound, costumes; instruction and practical application with WSU theatre productions.
260 Performance I: Acting 3 (0-6) The creative process of acting from experiential standpoint combined with exercises in interpersonal communication and critical thinking.
261 Performance I: Directing 3 (0-6) Study of the principles, procedures, and practices of stage direction; weekly performance exercises culminating in directing a ten-minute play.
264 Stage Makeup 2 (0-6) Basic techniques in the design and execution of makeup for the stage and television.
294 Stage Speech 2 (0-6) May be repeated for credit; cumulative maximum 4 hours. Techniques and exercises for development of the actor’s voice for the stage: voice production, articulation, and application.
313 Movement for Stage 3 (0-6) Prereq interview with instructor. Movement awareness skills for performers, public speakers, and broadcast personnel.

360 Performance II: Acting 3 (0-6) Prereq Theat 260, by interview only. Acting together with practical experience working with student directors and guiding the actor toward structuring a role for performance.

361 Performance II: Directing 3 (0-6) Prereq by interview only. Advanced work in stage direction; weekly exercises focusing on period drama and culminating in directing a one-act play.

362 Script Analysis 3 Prereq access to email and the web. For directors, designers, performers. Exploration of various methods available for analyzing stage and film scripts.

363 Lighting for Theatre and Television 3 (2-3) Prereq Theat 163 or by interview only. Stage lighting design and technology; lighting instruments, control systems, principles of optics, color and electricity; practical applications with WSU productions.

364 Scenery: Construction and Painting 3 (2-3) Prereq Theat 163. Constructing and painting scenery; advanced methods for shifting scenery and creating special effects; materials and techniques for the scenic artist.

365 [H] Theatre History I: Beginnings to 1700 3 Development of theatre and drama from its beginning to 1700; major trends, plays, playwrights, actors, architecture, scenery, and costumes.

366 [H,M] Theatre History II: 1700 to 1900 3 Development of theatre and drama from approximately 1700 to 1900; major developments in theatre arts and dramatic literature.

367 [H] Musical Theatre 3 Survey of musical theatre from Vienna to Broadway, lyric drama from Mozart to the present.

368 Illustration and Rendering Techniques 3 (0-6) Same as AMT 368.

370 Theatrical Costuming 3 (0-6) Same as AMT 370.

401 Dramaturgy 3 Prereq by interview only. Strategies for collaborating with directors, designers, and playwrights; investigating theatrical contexts; adapting and/or updating scripts; communicating effectively with audiences.

402 Production Analysis 1 (0-3) May be repeated for credit; cumulative maximum 6 hours. Analysis and comparison of theatre productions through discussion and written evaluation. Credit not granted for both Theat 402 and 502.

418 Topics—Study Abroad 3

419 Topics—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

450 Performance III: Acting 3 (0-6) May be repeated for credit; cumulative maximum 6 hours. Prereq Theat 360 or by interview only. Creative process of acting together with practical experience working with student directors; acting in an alternative or non-realistic context.

460 Technical Theatre Management 3 Prereq Theat 163. Organization and management of theatrical productions; the role of the stage manager, backstage crews; coordination of designers and directors.

461 Performance III: Directing 3 (0-6) Prereq by interview only. Advanced work in stage direction; weekly exercises focusing on modern, non-realistic theatrical forms and culminating in directing a one-act play. Credit not granted for both Theat 461 and 561.

462 Visual Communication in Theatre, Film and Television 3 Analysis of the visual aspects of theatre, film and television applying research in perceptual psychology.

463 Seminar in Theatre Design 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq Theat 163. Sketching, mechanical drawing, watercolors, model building, and use of theatrical materials and techniques.

464 Creative Drama 3 Philosophy and techniques of informal drama; practical experience integrated into the curriculum; emphasis on application to educational setting. Credit not granted for both Theat 464 and 564. Cooperative course taught by WSU, open to UI students (ThA 381).

465 Dramatic Theory and Criticism 3 Prereq Theat 362, 365, 366, or by interview only. Undergraduate seminar exploring the major developments in dramatic theory, concentrating particularly on the scope and boundaries of postmodern critical methodologies.

467 Topics in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Individual study and discussion of drama and performance theory from different historical eras and social contexts.

480 Playwriting 3 Prereq Engl 351. Practical experience in the creative process of playwriting.

490 Internship in Professional Theatre V 2-15 Prereq Theat 163, 264; 360 or 361; 362; 363 or 366. Off-campus experience with Seattle area professional theatres in all aspects of production excluding performance. S, F grading.

494 Acting: Rehearsal and Performance V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. By interview only. Practical application of acting techniques during the production of plays.

496 Applied Theatre Studies V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 12 hours. Practical application of acting, scenery construction and painting, costumes, properties, box office and other projects connected with University Theatre productions.

498 Repertory Theatre 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Rehearsal, performance and related technical and management work in Summer Palace Theatre.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Research Methods and Dramaturgy 3 Prereq graduate standing. Theory, methods, and practice of graduate-level research as applied to both scholarship and theatre productions.

502 Production Analysis 1 (0-3) May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of Theat 402; additional requirements. Credit not granted for both Theat 402 and 502.

504 Instructional Practicum 1 May be repeated for credit; cumulative maximum 4 hours. Instruction and guidance in teaching theatre arts and drama. S, F grading.

541 History of the Theatre I 3 Major developments of all aspects of theatre arts from prehistoric times to 1650.

542 History of the Theatre II 3 Major developments of all aspects of theatre arts from 1650 to 1800.

561 Performance III: Directing 3 (0-6) Graduate-level counterpart of Theat 461; additional requirements. Credit not granted for both Theat 461 and 561.

563 Scene Design: Art and Practice 3 (0-6) Prereq graduate standing. The art of scene design, conceptualization and actualization; design analysis, research, and technical skills needed to execute renderings and models.

564 Creative Drama 3 Prereq graduate standing. Graduate-level counterpart of Theat 464; additional requirements. Credit not granted for both Theat 464 and 564.

565 Seminar in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Seminar in various periods, movements, and phases of drama.

568 Theatre for Young Audiences 3 Prereq Theat 260; graduate standing. Study in evolution of dramatic literature and production demands of Theatre for Young Audiences (TYA).

570 Theory and Practice of Puppetry Arts 3 Prereq Theat 163. Puppetry arts with emphasis in drama, education, and therapy; practical and theoretical application.

571 Applied Puppetry Arts 2 (1-3) Prereq c// in Theat 470 or 570. Applications of puppetry arts theory to specific emphases: production, education and therapy.

572 Drama Therapy 3 Prereq current knowledge in psychology/ counseling theory. Balanced theoretic and experiential approach toward understanding therapeutic applications of drama and theatre.
590 Graduate Internship in Professional Theatre V 2-15 Prereq Theat S01; completion of one academic year of master's level course work in Theatre Arts and Drama at WSU. Internship position at upper levels of administration or production requiring expertise in specific areas; theories/practical application. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Department of Natural Resource Sciences

natural-resources.wsu.edu/

Johnson Hall 115

509-335-6166


Natural resources are the ultimate basis for much of the environmental quality, social well being, and economic status in the state of Washington and the world. Issues and concerns surrounding natural resources are of extraordinary importance to society. In the Department of Natural Resource Sciences, we offer disciplines and fields of study which help students develop the critical thinking skills and capabilities necessary to pursue successful careers in the natural resource professions. In addition to its traditional disciplines and fields of study, the Department has developed a professional program that will meet individual career goals. For example, students interested in the business aspects of forestry may complete a business minor under the auspices of the directed studies option; students interested in wildlife may take additional courses in wildlife ecology or complete a minor in wildlife ecology.

Natural Resource Major

The natural resource major is offered for students interested in biological, physical, or socioeconomic aspects of natural sciences that either extend beyond traditional disciplinary boundaries or which represent areas of specialization not encompassed by our other majors. This is the most flexible of our majors, offering exceptional opportunities for tailoring (in consultation with academic advisors) of courses/curricula to match individual student interests and needs within the realm of natural resource sciences. In addition to University GERs, basic science requirements, and natural resource core, takes a core of forestry classes in such areas as forest measurements/remote sensing, silviculture, harvesting, soils, watershed, and range management. Each student also selects a professional option. The two forestry options are forest management and directed studies. The forest management option provides a student with an understanding of the underlying principles and techniques used in forest management. Students completing the forest management option meet the qualifications of the US Office of Personnel Management for forester. The directed studies option provides a student with the opportunity to develop a professional program that will meet individual career goals. For example, students interested in the business aspects of forestry may complete a business minor under the auspices of the directed studies option; students interested in wildlife may take additional courses in wildlife ecology or complete a minor in wildlife ecology.

Natural Resource Core

Students pursuing the BS in natural resource sciences must major in one (or more) of these areas: forestry, wildlife ecology, and natural resources. All majors share a set of basic science and General Education Requirements and a core of natural resource courses. The natural resource core is composed of a broad spectrum of courses designed to expose students to a variety of natural resource disciplines, concepts, and philosophies. It contains coursework in the areas of measurements, social and economic dimensions of natural resources, natural resource policy/social science, wetland/aquatic resources, and directed studies which allow students to recognize problems and formulate alternative actions; (3) have the ability to communicate effectively to a variety of audiences; (4) have an appreciation of the scientific and historic pressures that have contributed to today's attitudes and status of natural resources; and (7) have an appreciation of the basic stewardship ethic that is inherent in the natural resource professions. In addition to its traditional focus on undergraduate and graduate education, the department is focused on basic and applied research, extension, and continuing education. The research, extension, and continuing education programs promote the responsible stewardship of Washington's natural resources (sustained supply of natural resources such as fiber, and other products and values that promote the quality of life of Washington's rural and urban populations).

There are a variety of career options such as work with state/federal land management or regulatory agencies, municipal or county government, public interest groups, natural resource industries, private land management, the consulting industry, and research/development in either the private or public sectors. Graduates may work as foresters, wildlife biologists, information specialists, game managers, consultants, and researchers in a variety of roles in developing countries. In addition, further education our graduates are involved in environmental education in grade schools and high schools, in the legal professions, and in natural resource law enforcement.

The structure of the graduate curriculum is such that it is very flexible (with some additional time) to pursue either dual natural resource major or a major in one field and minor in another natural resource field. The department offers disciplinary minors in forestry and wildlife available to all students, plus a general natural resource minor available to non-majors.

Student chapters of professional societies (Society of American Foresters and The Wildlife Society) provide out-of-class opportunities for students to interact with each other socially, and professionally with the faculty and other professionals. Faculty contacts with many of the employing organizations and interaction with career services on campus help students obtain summer and permanent employment, as well as internship and cooperative education opportunities in their chosen field.

Facilities such as the department’s undergraduate project laboratory; various teaching and research laboratories; bear research facility; animal holding facilities; greenhouses and grasslands/woodlands at the E.H. Steffen Center; the Hudson Biological Reserve at Smoot Hill; the Kramer/Palouse Natural Area; the Ownbey Herbarium; and the 12,000-acre Coloukum multiple-use area provide students with access to the facilities and technologies needed to develop competence in their chosen professions. These facilities and the close proximity of natural forest, rangeland, and aquatic ecosystems to the Pullman campus provide significant opportunities for field and experiential learning to natural resource science students.

Majors in Natural Resource Sciences

Students pursuing the BS in natural resource sciences must major in one (or more) of these areas: forestry, wildlife ecology, and natural resources. All majors share a set of basic science and General Education Requirements and a core of natural resource courses. The natural resource core is composed of a broad spectrum of courses designed to expose students to a variety of natural resource disciplines, concepts, and philosophies. It contains coursework in the areas of measurements, social and economic dimensions of natural resources, natural resource policy/social science, wetland/aquatic resources, and directed studies which allow students to recognize problems and formulate alternative actions; (3) have the ability to communicate effectively to a variety of audiences; (4) have an appreciation of the scientific and historic pressures that have contributed to today's attitudes and status of natural resources; and (7) have an appreciation of the basic stewardship ethic that is inherent in the natural resource professions. In addition to its traditional focus on undergraduate and graduate education, the department is focused on basic and applied research, extension, and continuing education. The research, extension, and continuing education programs promote the responsible stewardship of Washington's natural resources (sustained supply of natural resources such as fiber, and other products and values that promote the quality of life of Washington's rural and urban populations).

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There are a variety of career options such as work with state/federal land management or regulatory agencies, municipal or county government, public interest groups, natural resource industries, private land management, the consulting industry, and research/development in either the private or public sectors. Graduates may work as foresters, wildlife biologists, information specialists, game managers, consultants, and researchers in a variety of roles in developing countries. In addition, further education our graduates are involved in environmental education in grade schools and high schools, in the legal professions, and in natural resource law enforcement.

The structure of the undergraduate curriculum is such that it is very flexible (with some additional time) to pursue either dual natural resource major or a major in one field and minor in another natural resource field. The department offers disciplinary minors in forestry and wildlife available to all students, plus a general natural resource minor available to non-majors.

Student chapters of professional societies (Society of American Foresters and The Wildlife Society) provide out-of-class opportunities for students to interact with each other socially, and professionally with the faculty and other professionals. Faculty contacts with many of the employing organizations and interaction with career services on campus help students obtain summer and permanent employment, as well as internship and cooperative education opportunities in their chosen field.

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lows students working with their advisors to select courses that focus on an aspect of natural resource sciences not represented by the other options. Lists of approved electives for each of these options are available from the department.

Wildlife Ecology Major

The wildlife ecology major provides students with a basic background in the sciences plus additional courses emphasizing the management and scientific aspects of wildlife ecology. Students are therefore prepared to pursue a variety of careers focusing upon either/bboth wildlife biology or wildlife management. The core requirements plus proper selection of approved wildlife electives may allow majors to meet the US Office of Personnel Management requirements for wildlife biologist, wildlife refuge manager, general biologist, and zoologist. Through judicious use of electives a student can also meet additional civil service requirements for fish biologist and range conservationist. Wildlife students can further individualize and often enhance their professional credentials by minoring in another subject such as criminal justice, computer science, or forestry. Students with a primary interest in veterinary sciences and wildlife may jointly pursue their interests via the pre-vet school option.

In addition to University GERs, basic science courses and the natural resource common core, students in this major complete a core of wildlife classes emphasizing wildlife ecology, management, nutrition, population ecology, and conservation biology. Opportunities for specialization and pursuit of individual student interests beyond the wildlife core are provided through completing either the pre-vet school option, or a directed studies option wherein students may select approved electives in the areas of habitat ecology, aquatic ecology, animal ecology, and conservation biology.

Pre-Vet Option in Wildlife Ecology

The pre-veterinary bachelors program in natural resource sciences (NRS) with a major in wildlife ecology offers students the opportunity to combine an interest in individual animal health with the challenge of managing wild animal populations and environments. The curriculum provides a background in chemistry through introductory biochemistry, genetics and cell biology, and introductory courses in physics and the quantitative sciences. The natural resource core curriculum and the wildlife ecology curriculum provide a basic foundation for the management of wildlife species and their environment. Elective courses in ornithology, mammalogy, toxicology, reptiles and amphibians, and fisheries provide students with the ability to focus their attention on selected biological topics. The NRS program provides students with the necessary academic background and GPA to be academically competitive in obtaining admission to the Veterinary program at the completion of the junior or senior year.

Natural Resource Sciences Honors Students

The Honors College and the natural resource science curricula provide students with an opportunity to acquire an exceptional breadth of knowledge and technical skills. The oral and written skills, in particular, provide graduates of the Honors College and the natural resource sciences with the communication skills that are highly prized in the public and private sector. The synergism of knowledge associated with the Honors and the NRS curricula provide students not only with the ability to view natural resource problems in the context of social and historical processes, but also to seek technical solutions that may be more socially and culturally compatible in the modern world.

Transfer Students

Transfer students should plan to complete the basic required courses in English composition, chemistry, speech, biological sciences, mathematics, microeconomics, social sciences, and arts and humanities by the end of their sophomore year. Students may be granted credit for equivalent technical courses taken at other academic institutions. Refer to WSU Transfer Guides for Community Colleges, available through community college advisors and the Web, for details. It is suggested that students planning on transferring contact the department regarding priority of transfer courses.

Graduate Programs

Graduate programs provide students not only with an increased knowledge of the scientific basis of their profession but also with a more complete understanding of the holistic nature of successful natural resource management and science. The department offers the MS in natural resource sciences (thesis-based) and the MS in natural resources (non-thesis). The department, in conjunction with the environmental science and regional planning program, offers a PhD in environmental and natural resource sciences. Under the broad rubric of each graduate degree, students may specialize in a variety of biological, physical, or social science aspects of natural resources by virtue of advanced coursework or graduate research. Graduate curricular requirements are flexible; hence, students with preceding education in both natural science and related fields are encouraged to apply. To be accepted to graduate study in natural resource sciences, applicants must (1) meet the Graduate School's minimum admission requirements, 2) complete the department's supplemental application form, 3) have three letters of reference and GRE scores submitted to the department, and 4) have at least one member of the department's faculty willing to serve as the student's major advisor. Students interested in graduate study in natural resource sciences should consult the WSU Graduate Bulletin and directly contact the department for further information on opportunities and requirements.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

FORESTRY—BUSINESS MANAGEMENT OPTION

(121 HOURS)  ⚫ FYDA

This forest business option (with business minor) provides students with a basic understanding of principles needed in the business aspects of forestry in the public and private sectors. Completion of the forest business option satisfies all the requirements for a minor in business administration.

First Year

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<th>Term</th>
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<td>First Term</td>
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<td>Biol 106 [BI] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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Second Year

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Third Year

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Fourth Year

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Notes:

- FYDA: This option is designed for students planning to transfer to a business administration program.
- GER: General Education Requirement
- D: Diversity Requirement
- S: Social Science Requirement
- K: Basic Skills Requirement
- T: Tier III Requirement

Department of Natural Resource Sciences
FORESTRY—DIRECTED STUDIES OPTION (131 HOURS) EE FYDA

This directed studies option provides a student with the opportunity to develop a professional program that will meet individual career goals.

**First Year**

**First Term**
- Biol 106 or Biol 120 [B] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 107 4
- NATRS 100 1

**Second Term**
- Ag Ec 201 [S] or Econ 101 [S] (GER) 3
- Biol 106 [B] or 107 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Intercultural [I,G,K] (GER) 3

**Second Year**

**First Term**
- Biol 120 or 106 [B] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 107 4
- NATRS 100 1

**Second Term**
- Ag Ec 201 [S] or Econ 101 [S] (GER) 3
- Biol 106 [B] or 107 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Intercultural [I,G,K] (GER) 3

**Third Year**

**First Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Directed Studies Option courses 1
- NATRS 410 or 321 3
- Stat 212 4
- Elective 3

**Second Term**
- Arts & Humanities [H,G] (GER) 3
- Directed Studies Option Course 1
- NATRS 450 [M] 3
- NATRS 460 3

**Fourth Year**

**First Term**
- Directed Studies Option course 1
- NATRS 305 3

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1 For the Business Management option, take Econ 101.
3 At least 16 credits of approved electives. One course selected from Acctg 230, 231, B Law 210, MgtOp 215, 340, Econ 102, Mgt 101. Three courses selected from Fin 325, Bus 380, Ins 320, Mgt 301, Mktg 360, Mktg 350, 372, Re 305.
4 One from: Ag Ec 409; Math 140, 201, 202; Stat 410, 411, 422.

FORESTRY—FOREST MANAGEMENT OPTION (129 HOURS) EE FYDA

This forest management option provides a student with an understanding of the underlying principles and techniques used in forest management. Students completing the forest management option meet the qualifications of the US Office of Personnel Management for forester.

**First Year**

**First Term**
- Biol 120 or 106 [B] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 107 4
- NATRS 100 1

**Second Term**
- Ag Ec 201 [S] or Econ 101 [S] (GER) 3
- Biol 106 [B] or 107 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Intercultural [I,G,K] (GER) 3

**Second Year**

**First Term**
- NATRS 204 2
- NATRS 280 4
- NATRS 300 4
- NATRS 301 3
- Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER) 3

**Second Term**
- NATRS 302 3
- NATRS 311 3
- NATRS 312 2
- NATRS 313 3
- NATRS 374 or SoilS 474 3
- Complete Writing Portfolio

**Third Year**

**First Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Directed Studies Option courses 1
- NATRS 410 or 321 3
- Stat 212 4
- Elective 3

**Second Term**
- Arts & Humanities [H,G] (GER) 3
- Directed Studies Option Course 1
- NATRS 450 [M] 3
- NATRS 460 3
- Restricted Math Elective 2

**Fourth Year**

**First Term**
- Directed Studies Option course 1
- NATRS 305 3

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1 In the Directed Studies Option, students in consultation with their advisor, select 12 additional hours, 9 of which must be at the 300-400 level. Students interested in business should consult the College of Business and Economics.
2 One from: Ag Ec 409; Math 140, 171, 202; Stat 410, 412, 422.

FORESTRY—WILDLIFE HABITAT OPTION (126 HOURS) EE FYDA

This forest wildlife option produces forestry professionals sensitive to the needs of wildlife, and who are able to bridge the gap between the traditional forester and the wildlife biologist. With careful selection of courses, students in the forest wildlife option will meet the federal qualifications for wildlife biologist.

**First Year**

**First Term**
- Biol 106 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- Math 107 4
- NATRS 100 1

**Second Term**
- Ag Ec 201 [S] or Econ 101 [S] (GER) 3
- Biol 106 [B] or 107 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Intercultural [I,G,K] (GER) 3

**Third Year**

**First Term**
- NATRS 204 2
- NATRS 280 4
- NATRS 300 4
- NATRS 301 3
- Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER) 3

**Second Term**
- NATRS 302 3
- NATRS 311 3
- NATRS 312 2
- NATRS 313 3
- NATRS 374 or SoilS 474 3
- Complete Writing Portfolio

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1 Restricted math electives include Math 140, 171, 202, Stat 410, 412, 422, Ag Ec 409.

Department of Natural Resource Sciences
NATURAL RESOURCE MAJOR (120 HOURS) ☉ FYDA

Eight options are designed to provide specialization in specific areas of natural resource sciences, and include natural resource policy, natural resource social science, wetland/aquatic resources, plant resources (applied ecology or ecophysiology), landscape ecology, and fire science/management. Lists of approved electives for each of these options are available from the department. A ninth option, directed studies, allows students working with their advisers to select courses that either increase their general knowledge of natural resources, or focus upon an aspect of natural resource sciences not represented by the other eight options.

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WILDLIFE ECOLGY—DIRECTED STUDIES OPTION (120 HOURS) ☉ FYDA

This directed studies option allows students to select approved electives in the areas of habitat ecology, aquatic ecology, animal ecology, and conservation biology.

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WILDLIFE ECOLGY—PRE-VETERINARY OPTION (120 HOURS) ☉ FYDA

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Second Term  
Arts & Humanities [H,G] (GER) 3  
Biol 107 [B] (GER) 4  
Chem 106 [P] or 116 [P] (GER) 4  
Engl 201 [W], HD 205 [C], or ComSt 102 [C] (GER) 3  
GenEd 110 [A] (GER) 3

Second Year  
First Term  
Ag Ec 201 [S] or Econ 101 [S] (GER) 3  
Chem 345 4  
GenEd 111 [A] (GER) 3  
NATRS 280 4  
Restricted Math Elective\(^1\) 4  
Second Term  
Intercultural [I,G,K] (GER) 3  
MBioS 303 4  
NATRS 311 3  
NATRS 312 2  
Stat 412 3  
Third Year  
First Term  
MBioS 301 4  
NATRS 204 3 or 4  
NATRS 300 or Biol 372 2  
NATRS 301 3  
NATRS 435 4  
Second Term  
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3  
NATRS 302 [M] 3  
NATRS 436 [M] 4  
Phys 101 [P] or 201 [P] (GER) 4  
TIER III Course [T] (GER) 3  
Complete Writing Portfolio

Fourth Year  
First Term  
Animal Systematics Elective\(^2\) 3-4  
NATRS 450 [M] 3  
Electives 6  
Second Term  
Animal Systematics Elective\(^2\) 4  
NATRS 431 3  
NATRS 438 3  
NATRS 441 4  
NATRS 470 2

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\(^1\) Restricted Math electives include: Math 140, 171, 202, and Stat 212. Math 140 is the preferred elective.

\(^2\) Each student is required to choose two animal systematics courses from list shown below: Biol 412, 423, 428, or 432.

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Minors

Forestry  
Minimum of 16 credit hours. Required courses: NATRS 204, 301, 305. Restricted electives: at least 8 credit hours selected from NATRS 331, 348, 406, 420, 430, or 460.

Natural Resources  
Minimum of 16 credit hours of courses approved by department. For non-natural resource sciences majors only. Required courses: at least 9 credit hours of NATRS courses, as least 9 credit hours of courses numbered 300 or higher, and at least one course in each of the following areas (three courses total); individual courses may be used to satisfy only one area: 1) Basic principles of natural resource sciences/management: recommended electives: NATRS 100, 101, 303; others upon departmental approval; 2) Socioeconomic aspects of natural resource sciences/management: recommended electives: NATRS 303, 311, 312, 403, 419, 438; others upon departmental approval; 3) Ecological aspects of natural resource sciences/management: recommended electives: NATRS 280, 301, 302, 303, 351, 371, 419, 450, 460, 470; others upon departmental approval.

Rangeland Ecology and Management  
Minimum of 20-23 credit hours. Required courses: NATRS 455, 460, 468, and SoilS 201. One from NATRS 459 or Biol 462. One from NATRS 428, 430, or ES/RP 444. One from A S 101 or 174.

Wildlife  
Minimum of 19 credit hours. Required courses: NATRS 280, 435. Restricted electives: at least 11 credit hours from NATRS 431, 436, 450, 460; no more than one from Biol 423, 428, 432.

Description of Courses

Natural Resource Sciences Courses

NATRS 100 Introduction to Natural Resource Management 1 1 Nature and significance of natural resources; types of renewable natural resource systems; goals and principles of natural resource management.

204 Introduction to Measurements and Computers in Natural Resources 2 (1-3) Prereq Math 107, sophomore standing. Introduction to basic concepts, field techniques and the use of spread sheets in natural resources. Field trips required.

280 Introductory Wildlife Management 4 (3-3) Prereq Biol 106 or 120. An introductory course in the principles of wildlife management. Field trip required.


301 Forest Plants and Ecosystems 3 (2-3) Prereq NATRS 300 or c/. Identification and ecology of forest plants with emphasis on trees and the ecosystems in which they occur. Field trips required.

302 Arid Land Plants and Ecosystems 3 (2-3) Prereq NATRS 301. Identification and ecology of arid land plants (trees, shrubs, grasses, forbs) and the ecosystems in which they occur. Field trips required.

305 Silviculture 3 Prereq NATRS 204, 300, 302. Stand dynamics, natural regeneration methods, intermediate stand treatment, relationships of natural resource management to silvicultural practice. Field trips required.

311 Natural Resource Economics 3 Rec Ag Ec 201 or Econ 101. Same as Ag Ec 311.

312 [S,D] Natural Resource and Society 3 Social views of natural resources; processes by which these views are developed and expressed; social conflict over natural resources.

313 Forest Measurements 2 (1-3) Prereq NATRS 204. Theory and application of forest measurements. Field trips required. Cooperative course taught jointly by WSU and UI (For 374).

320 Timber Harvesting 3 Prereq NATRS 204. Current practices and problems; planning and coordinating timber harvesting with forest management. Field trips required. Cooperative course taught by UI (ForP 430), open to WSU students.

321 Introduction to Wood Technology 3 Prereq Biol 107. Anatomy of woody plants, identifying characteristics and properties of woods; relation of wood properties to processing and use. Field trips required. Cooperative course taught by UI (ForP 277), open to WSU students.

331 Forest Pathology 2 (0-6) Same as PI P 331.

348 Forest Insects 1 Classification and biology of insects injurious to forests and forest products.

349 Forest Pest Management 1 Prereq NATRS/Entom 348 or 343. Principles and practice of forest pest management.

374 Remote Sensing and Airphoto Interpretation 3 (2-3) Same as SoilS 374.

410 Forest Finance and Valuation 3 Prereq Ag Ec 201 or Econ 101; Math 107; NATRS 204. Economic and finance principles applied to forest management and appraisals.

411 [M] Limnology and Aquatic Ecosystem Management 3 (2-3) Prereq Biol 102 or 120; Chem 101. Introduction to the science and management of aquatic ecosystems, emphasizing lakes.

414 [M] Ecosystem Surveys and Inventories 3 (2-3) Prereq MgtOp 215, Stat 212 or 412; NATRS 313 or 57. The application of sampling theory in natural resource inventories and surveys.
416 Fisheries Management 4 (3-3) Techniques employed in sampling and application of principles toward managing recreational and commercial aquatic resources. Cooperative course taught jointly by WSU and UI (Fish 418). Prereq UI Fish 314, 411, Stat 251.

417 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

418 Forest Growth and Yield 2 Prereq Mgt/Pol 215, Stat or 212 or 412. Factors influencing forest yields, traditional prediction methods; development and application of growth and yield simulators. Credit not granted for both NATRS 418 and 518.

419 Topics in Natural Resource Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Topical issues in natural resource sciences.

420 Wood and Wood Products 2 Wood science and its role in the manufacturing and marketing of forest products. Credit not granted for NATRS 420 and 520.

421 Fish Health Management 3 (2-3) Prereq MBioS 101. Epidemiology, prevention, diagnostics, and treatment of infectious and non-infectious diseases of free-living and confined finfish and shellfish. Cooperative course taught by UI (Fish 424), open to WSU students.

423 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq junior standing or by interview only. Topical issues in natural resource sciences.

424 Concepts in Aquaculture 2 Prereq NATRS 421, or permission of instructor. Concepts and methods of extensive and intensive aquaculture in warm water and cold water systems. One 1-day field trip. Cooperative course taught by UI (Fish 422), open to WSU students.

425 Concepts in Aquaculture Laboratory 1 (0-3) Prereq NATRS 421, or permission of instructor. Laboratory for NATRS 424. Concepts and methods of extensive and intensive aquaculture in warm and cold water systems. One-day field trip required. Cooperative course taught by UI (Fish 422), open to WSU students.

428 Resolving Environmental Conflicts 4 (3-3) Prereq junior standing, two social science courses. Same as CRS 435. Credit not granted for both NATRS 428 and 528.

430 Introduction to Wildland Fire 3 Prereq NATRS 300. Physical nature and behavior of wildland fire; the fire environment; fire ecology; practice of wildland fire management. Field trip required.

431 Wildlife Nutrition 3 (2-3) Nutritional requirements and interactions of wildlife populations. Credit not granted for both NATRS 431 and 531. Cooperative course taught by WSU, open to UI students (WLF 431).

432 Low-volume Forest Roads 3 Prereq NATRS 320. Road classification; design of forest roads; construction techniques; costing, environmental considerations, design project. Three days of field trips. Cooperative course taught by UI (ForP 432), open to WSU students.

433 Forest Tractor System Analysis 3 Prereq NATRS 320. Planning, layout, and cost analysis of forest tractor systems, production estimating, machine capabilities, and options; layout project. Three days of field trips. Cooperative course taught by UI (ForP 433), open to WSU students.

434 Cable Systems Analysis 3 Prereq NATRS 320. Layout, planning, and design for cable logging systems; analysis of forces involved in cable logging; crew and terrain requirements; layout and design project; cost and equipment analysis. Three one-day field trips. Cooperative course taught by UI (ForP 434), open to WSU students.


437 Wildland Fire Management Laboratory 1 (0-3) Prereq NATRS 430. Wildland fuel combustion; fire behavior; fuel evaluation; fire effects; application to fire management. Field trips required. Credit not granted for both 437 and 537.

438 Natural Resource and Environmental Policy and Law 3 Prereq junior standing or permission of instructor. Development, content and implementation of natural resources and environmental policy and law in the U.S. Emphasis on both historical development and current issues in this field. Credit not granted for both NATRS 438 and 538.

439 Production and Cost Control in Forest Industry 3 Prereq NATRS 420. Production planning and cost control for timber harvesting and forest products processing operations; development and application of machine rates and system production rates; break-even analysis; machine replacement; cash flow in investment decisions; use of microcomputers in analysis. Cooperative course taught by UI (ForP 431), open to WSU students.

440 Integrated Forest Management Models 3 (2-3) Prereq NATRS 313; 410 or 510. Mathematical programming techniques for decisions in forest planning; coordinate site projects, area analysis, strategic forest plans, and regional forest resource policies. Credit not granted for both NATRS 440 and 540. Cooperative course taught by UI (ForP 441), open to WSU students.


445 Nongame Management 2 Same as Biol 445.

450 [M] Conservation Biology 3 Prereq by interview only. Patterns of biological diversity, factors producing changes in diversity, values of diversity, management principles applied to small populations, protected areas, landscape linkages, biotic integrity, restoration, legal issues and funding sources. Credit not granted for both NATRS 450 and 550.

452 Range Development and Improvements 3 (2-3) Prereq NATRS 351. Developing and improving rangeland forage resources; ecological considerations, plant control, seeding, fertilization, fire, facilitating animal use. Field trips required. Credit not granted for both NATRS 452 and 552.

453 Range Livestock Management 3 Rec NATRS 351. Range livestock management, nutrition and behavior; plant responses to grazing; grazing systems; stocking variables. Field trip required. Credit not granted for both NATRS 453 and 553.

454 Restoration Ecology 3 (2-3) Prereq senior standing. Ecological principles used to restore biological communities; ecological processes and species on degraded landscapes. Credit not granted for both NATRS 454 and 554.

455 Elements of Range Management Sciences 3 Prereq Biol 107. Systems science, ecology, wildlife, livestock, social science, concept design, and their contributions to a management science involving rangelands.

459 Rangeland Ecology 3 Prereq NATRS 302. Application of ecological principles in rangeland management; stressing response and behavior of range ecosystems to various kinds and intensities of disturbance and management practice. Field trips required. Cooperative course taught by UI (Rgge 459), open to WSU students.

460 Watershed Management 3 Prereq NATRS 204, completion of department requirement in biology, chemistry, and physical science, mathematics and statistics; or by interview. Principles and practices of management of forest and rangelands for protection, maintenance, and improvement of water resource values. Field trip required. Credit not granted for both NATRS 460 and 560.

468 ArcGIS and Geospatial Analysis 4 (2-6) Same as Soils 468.

470 Topics in Resource Planning 2 Prereq junior standing; permission of instructor. Topics in resource planning on federal, state, industrial/non-industrial private forest and rangelands in Pacific Northwest region.

479 Natural Resource Management Internship V 2-12 May be repeated for credit, cumulative maximum 12 credit hours. An elective opportunity for select students to supplement their academic training with practical field experience.

488 [M] Senior Thesis in Natural Resources V 3-6 May be repeated for credit; cumulative maximum 6 hours. Prereq senior in natural resource sciences.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.
515 Aquatic Restoration Ecology 3 Review of the response of impacted lake, stream, and wetland systems to rehabilitation and restoration; theory and working examples of each will be addressed. Cooperative course taught by UI (Fish 519), open to WSU students.

518 Forest Growth and Yield 2 Graduate-level counterpart of NATRS 418; additional requirements. Credit not granted for both NATRS 418 and 518.

519 Advanced Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

520 Wood and Wood Products 2 Graduate-level counterpart of NATRS 420; additional requirements. Credit not granted for both NATRS 420 and 520.

521 Human Dimensions of Wildlife Management 2 Prereq NATRS 435. An exploration of the elements involved in the management of wildlife for non-consumptive activities, the impacts of such activities on wildlife, the role of national parks and protected areas in providing wildlife viewing opportunities, and public attitudes toward wildlife species. Cooperative course taught by UI (WLF 520), open to WSU students.

524 Plant Ecophysiology 3 Prereq course in general ecology or botany. Adaptations of individual plant species to their environment, emphasizing ecophysiological mechanisms that influence plant establishment, below and above ground productivity. Field trips required. Cooperative course taught by UI (Rnge 560), open to WSU students.

525 Experimental Plant Ecology 1 (0-3) Experimental techniques in plant ecology with orientation toward environmental and physiological measurement in field and laboratory research. Cooperative course taught by WSU, open to UI students (Rnge 525).


527 Forest Gene Resource Management 3 Prereq graduate standing. Genetic principles applied to forest ecosystems management; origin and function of genetic diversity; implications of silvicultural practices on gene pools. Field trips required. Cooperative course taught by UI (For 528), open to WSU students.

528 Resolving Environmental Conflicts 4 (3-3) Prereq graduate standing, two social science courses. Same as CRS 535. Graduate-level counterpart of NATRS 428; additional requirements. Credit not granted for both NATRS 428 and 528.

529 Principles of Population Dynamics 1 Prereq general ecology. Development of the theory of population dynamics from Mathus to the present.

531 Wildlife Nutrition 3 (2-3) Graduate-level counterpart of NATRS 431; additional requirements.

535 Wildlife Ecology 4 (3-3) Graduate-level counterpart of NATRS 435; additional requirements. Credit not granted for both NATRS 435 and 535.

536 Advanced Wildlife Management 4 (3-3) Graduate-level counterpart of NATRS 436; additional requirements. Credit not granted for both NATRS 436 and 536.

538 Natural Resource Policy and Administration 3 Graduate-level counterpart of NATRS 438; additional requirements. Credit not granted for both NATRS 438 and 538.

540 Integrated Forest Management Models 3 (2-3) Graduate-level counterpart of NATRS 440; additional requirements. Credit not granted for both NATRS 440 and 540.

541 Population Ecology and Conservation 4 (3-3) Prereq graduate standing. Graduate-level counterpart of NATRS 441; additional requirements. Credit not granted for both NATRS 441 and 541.

545 Advanced Ecosystem and Landscape Management 2 Prereq enrollment in NRI or by interview only. Ecosystems and landscape management principles, assessments, monitoring, design, and practice, incorporating biological and socioeconomic perspectives.

546 Upland Game Ecology 2 Prereq NATRS 435. Ecology and management of wildlife species using forest and rangeland habitats; current management problems and procedures. Cooperative course taught by UI (WLF 546), open to WSU students.

550 Conservation Biology 3 Graduate-level counterpart of NATRS 450; additional requirements. Credit not granted for both NATRS 450 and 550.


554 Restoration Ecology 3 (2-3) Restoration Ecology 3 (2-3) Graduate-level counterpart of NATRS 454; additional requirements. Credit not granted for both NATRS 454 and 554.

556 Foraging Ecology of Herbivores 3 Prereq graduate student or by permission. Synthesis of foraging behavior concepts including nutritive quality of forages, digestive and metabolic constraints, and diet and habitat selection. Cooperative course taught jointly by WSU and UI (Rnge 556).

560 Watershed Management 3 Graduate-level counterpart of NATRS 460; additional requirements. Credit not granted for both NATRS 460 and 560.

575 Advanced Remote SensingRemote Sensing and Geospatial Analysis 3 (1-4) Same as SoilS 574.

588 Advanced Topics in Wildlife V 1-3 May be repeated for credit; cumulative maximum 10 hours. Biology and management of wildlife species. Cooperative course taught jointly by WSU and UI (WLF/For/FWR/Rnge/RRTT 500).

593 Special Topics Seminar 1 May be repeated for credit. Prereq 20 hours NATRS. Literature and problems.

594 Environmental and Natural Resources Issues and Ethics 3 Prereq senior standing. May be repeated for credit; cumulative maximum 7 hours. Ethical systems applied to natural resources; issues of professionalism and ethics in natural resource management. Cooperative course taught by WSU, open to UI students (RRTT 594).

595 Seminar in Natural Resource Sciences 1 May be repeated for credit. Literature review; preparation and presentation of reports in natural resource sciences.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Program in Naval Science

pc021025.navy.uidaho.edu/index.html

Navy Building, University of Idaho

208-885-6333

Professor of Naval Science, Colonel Barnes, CDR Rissky, Capt Van Airsdale, LT Desaulniers, LT Smith, LT Summer.

The Navy-Marine Corps Officer Education Program, administered and taught by the NROTC staff at the University of Idaho, is open to men and women and offers scholarships leading to reserve commissions in the Navy and Marine Corps and active duty as Navy or Marine Corps officers. Normally, students enter the program at the beginning of their junior year. Students take 20 hours of professional courses taught by the Navy and Marine Corps staff of the NROTC unit. In addition to the professional courses, students enrolled in the NROTC Program must also participate in Naval Science Drill (NS 100) each semester. Following graduation, the newly commissioned officer is offered a broad variety of duty assignments including duty on nuclear submarines and surface ships, in naval aviation, and ground or aviation assignments in the Marine Corps. All commissionees go on active duty at full pay and allowances immediately upon graduation.

College Program

Application for this program is made directly to the head of the Department of Naval Science. Students receive their uniforms and naval science
textbooks at no cost and begin receiving a monthly stipend of $350 per month at the beginning of their junior year. College program students may be nominated by the professor of Naval Science for a two- or three-year scholarship as freshmen, sophomores, or first-semester juniors, if their grades and military aptitude marks are sufficient to warrant such nomination. The program requires one training cruise during the summer following the junior year. It is an afloat cruise of the same type and with the same pay as described for the scholarship program. Graduates of this program are commissioned as reserve officers and are ordered to active duty upon graduation.

Scholarship Program

The scholarship benefits include tuition, fees, a book allowance, and a monthly stipend of up to $400.

Application for this program is normally made during the early fall of the student’s senior year of high school. Initial selections are based on college entrance examination scores (SAT or ACT) and high school academic performance.

A student on scholarship participates in three summer training cruises of four to six weeks duration. During the first cruise, students are introduced to the submarine, amphibious warfare (Marine Week), surface warfare, and aviation communities. The second and third cruises are aboard ships of the Pacific or Atlantic fleets and often include travel to Europe or the Far East.

During summer cruises, the students receive one-half the pay of an ensign, in addition to room and board. Graduates of this program are commissioned as reserve officers in the Navy or Marine Corps.

Marine Corps Option

Both male and female scholarship and college program students who desire a Marine Corps commission may apply for the Marine Corps option during their first two years in college. Students taking this option enroll in specialized classes on Marine Corps subjects during their junior year and participate in summer training at the Marine Corps Development and Education Center, Quantico, Virginia, during the summer following their junior year.

Naval Science Institute

Navy-Marine Corps scholarship and college program applicants entering the program after completion of their sophomore year will be required to attend the Naval Science Institute (NSI) during the summer between their sophomore and junior years. At the NSI they will study the material taken by the four-year candidates during their freshman and sophomore years. On completion of the NSI, candidates return to the University and complete their junior and senior years of the naval science curriculum with their peers. Candidates in the two-year program will participate in an afloat cruise between their junior and senior years. Applications must be submitted early in the second semester of the sophomore year. The top NSI graduates are awarded scholarships for their last two years of college. The remaining graduates enter the college program and receive those benefits.

Nursing Program

The NROTC program also offers scholarships leading to commissioning in the Navy Nurse Corps. Selected students attend one year of classes at WSU and then transfer to the Intercollegiate College of Nursing (ICN) in Spokane, Washington, for completion of the BS in nursing. Application for this program can be made during the freshman year. For more information concerning this program, please see the Intercollegiate Program in Nursing.

Field Trips

Field trips to Navy and Marine Corps facilities are arranged periodically in order to allow the Navy-Marine Corps Officer Education Program members the opportunity to learn more about the naval service.

Minors

Naval Science

NS 101, 102, 201, 202; four to six courses from the following: NS 301, 302, 311, 401, 402, 412.

Description of Courses

Naval Science Courses

NS 100 Drill Lab 1 (0-2) No credit. Required of all Navy-Marine Corps Officer Education Program students. Two hour lab per week. S, F grading. Cooperative course taught by UI (NS 100), open to WSU students.

101 Introduction to Naval Science 2 (NS 101), open to WSU students.

102 Ships Systems I 3 Introduction to damage control and propulsion systems of naval ships; nuclear and conventional power. Cooperative course taught by UI (NS 102), open to WSU students.

201 Ships Systems II 3 Naval weapons: ballistics, control, propulsion, components, systems analysis. Cooperative course taught by UI (NS 201), open to WSU students.

202 Seapower and Maritime Affairs 3 US Navy and merchant marine seapower, development, and policy. Cooperative course taught by UI (NS 202), open to WSU students.

299 Directed Study 1 or 2 May be repeated for credit; cumulative maximum 12 hours. By interview only. Cooperative course taught by UI (NS 299), open to WSU students.

301 Navigation 3 Theory, principles, and procedures of terrestrial and celestial navigation. Cooperative course taught by UI (NS 301), open to WSU students.

302 Naval Operations 3 Prereq NS 301. Naval operations and tactics, relative motion, rules of the nautical road. Cooperative course taught by UI (NS 302), open to WSU students.

311 Evolution of Warfare 3 Rec NS 101, 202. Evolution of war through tactics; strategy from Sun Tzu to J.E.C. Fuller. Cooperative course taught by UI (NS 311), open to WSU students.

401 Naval Organization and Management 3 Theories of management and management resources, motivational theories and leadership. Cooperative course taught by UI (NS 401), open to WSU students.

402 Naval Leadership 2 Rec NS 401. Principles and styles of leadership, personal attributes, and UCMJ. Cooperative course taught by UI (NS 402), open to WSU students.

412 Amphibious Operations 3 Rec NS 311. Amphibious doctrine from Gallipoli to Mayquesz. Cooperative course taught by UI (NS 412), open to WSU students.

419 Team Building 2 By interview only. Practical application of leadership and management techniques through athletics. Cooperative course taught by UI (NS 419), open to WSU students.

420 Basic Leadership 1 By interview only. Practical application of leadership and management techniques through the department head level. Cooperative course taught by UI (NS 499), open to WSU students.

421 Intermediate Leadership 2 By interview only. Practical application of leadership and management techniques through the branch and division officer level. Cooperative course taught by UI (NS 499), open to WSU students.

499 Directed Study V 1-4 May be repeated for credit. By interview only. S, F grading. Cooperative course taught by UI (NS 499), open to WSU students.

Program in Neuroscience


Wegner 205
509-335-0986

Neuroscience, the study of the brain and central nervous system, is a multidisciplinary program leading to the Bachelor of Science, Master of Science, and Doctor of Philosophy degrees, as well as to a minor at the undergraduate level. The neuroscience field plays an important role in both human and animal biomedical science. The undergraduate program for majors is designed for students interested in pre-medical, pre-veterinary, or other pre-health science studies to prepare for professional study in the health sciences (such as medical doctor or doctor of veterinary medicine), graduate school, or for those who wish to use their training in laboratory settings in universities, government organizations, or industry.

Computational neuroscience links the information processing features of the nervous system with information processing of computer systems. Accordingly, the computational neuroscience track supplements the neuroscience core curriculum with information technology courses. In this way students learn not only of the brain and its information processing mechanisms, but also of modern computer hardware and software technologies. Courses in science and engineering have been selected to give as broad an exposure as possible to subjects that underlie the basic neural and computational sciences with an emphasis on the organism and the machine as information processing entities. Upon completion of the four-year curriculum, a BS in neuroscience will be awarded. Furthermore, the program is designed to allow students to acquire breadth in computation subjects or, alternatively, to focus on either software or hardware aspects of computation. Students choosing to acquire breadth in computational subjects will be well prepared for graduate study in most areas of neural and biomedical science, including bioengineering. Students choosing a software or hardware focus may obtain a minor in either computer science or computer engineering. All subject requirements for entry into medical school are met by completion of the program of study in computational neuroscience.

The graduate program prepares students for careers in academia, research, and public service. Upon graduation, neuroscience students are credible experts in the areas of their thesis research. They can identify significant research problems and formulate logical, comprehensive strategies for solving these problems. Graduates have extensive knowledge of the scientific method and an appreciation for the demands that this method makes on the integrity of scientists.

Certification Requirements

Students may certify in general neuroscience (including premed and prevet) after completing Neuro 301 and a minimum of 24 semester hours with a 3.0 minimum gpa, 18 hours from Biol 106, 107, Chem 105, 106, Math 140 or 171, Phys 101, 102. No minimum gpa is required for Neuro 301.

Students may certify in computational neuroscience after completing Neuro 301, and a minimum of 24 semester hours with a 3.0 minimum gpa in Biol 106, Biol 107, Chem 105, Chem 106, Math 171, Math 172, and Phys 201.

Transfer Students

Transfer students must satisfy the program requirements for graduation. Science courses taken at other institutions will be evaluated and credits accepted where possible. Inquiries should be directed to the program coordinator.

Seven-Year Honors Neuroscience/Veterinary Medicine Degree Program

 Academically qualified undergraduate students who meet the highly selective criteria for admission to WSU’s Veterinary Medical Program may apply to the 7-year BS/DVM degree program in neuroscience after completion of one year of honors coursework at WSU. If accepted into the program, the student will work toward a bachelor of science in neuroscience in the first three years of the program and work toward the doctor of veterinary medicine degree in the following four years. The first three years are a combination of Honors College courses and regular University courses which fulfill the pre-veterinary requirements. The last four years are the traditional doctor of veterinary medicine program plus completion of an honors thesis. Prospective applicants must be admitted to the WSU Honors College and enrolled in Honors courses. See the Honors College for additional information.

Preparation for Graduate Study in Neuroscience

To be eligible for admission, candidates must meet general Washington State University requirements outlined in the Graduate Study Bulletin in effect at the time of their admission, as well as the current graduate neuroscience program requirements. Applicants for admission to the Graduate Program in Neuroscience must have a minimum gpa of 3.0 (A=4.0) either on the basis of the last 60 graded semester or 90 graded quarter hours of undergraduate study or the first 60 credit hours of a professional curriculum. Applicants generally will be expected to have completed courses in analytical chemistry, organic chemistry, calculus, physics, and a minimum of three courses in different areas of the biological sciences. It is advisable that applicants have a basic statistics course prior to entering the neuroscience program. Deficiencies in these areas must be cleared during the period of graduate study before the qualifying exam.

Applications for admission to the program must include GRE scores, transcripts for all college-level work, three letters of recommendation, and a description of career objectives. For students whose native language is not English, TOEFL scores are also required. Applications and inquiries should be directed to the Program in Neuroscience, Department of VCAPP, Washington State University, Pullman, WA 99164-6520 or e-mail grad_neuro@vetmed.wsu.edu. The application deadline for fall admission is December 31.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

NEUROSCIENCE—COMPUTATIONAL (BREADTH OF FIELD EMPHASIS) (128 HOURS)

First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
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</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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Second Term

<table>
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<tr>
<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biol 106 [B] (GER)</td>
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</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
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<tr>
<td>Cpt S 121</td>
<td>4</td>
</tr>
<tr>
<td>Math 172</td>
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Second Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td></td>
</tr>
<tr>
<td>Chem 345</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
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</tr>
<tr>
<td>Math 220</td>
<td>2</td>
</tr>
<tr>
<td>Math 273</td>
<td>2</td>
</tr>
<tr>
<td>Neuro 301</td>
<td>3</td>
</tr>
<tr>
<td>Phil 201 [H] (GER)</td>
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Second Term

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Biol 107 [B] (GER)</td>
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<tr>
<td>Cpt S 122</td>
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<tr>
<td>Engl 402 [C,W] (GER)</td>
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<tr>
<td>MBioS 303</td>
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Third Year

<table>
<thead>
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<th>Term</th>
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<tbody>
<tr>
<td>First Term</td>
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<tr>
<td>E E 214</td>
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</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Math 216</td>
<td>3</td>
</tr>
<tr>
<td>Math 315</td>
<td>3</td>
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<tr>
<td>Neuro 403 [M]</td>
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Second Term

<table>
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<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>MBioS 301</td>
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<tr>
<td>Neuro 404</td>
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<tr>
<td>Phys 202</td>
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Fourth Year

<table>
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<tbody>
<tr>
<td>First Term</td>
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<tr>
<td>Arts and Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>EE 261/262</td>
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<tr>
<td>Neuro 495</td>
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<tr>
<td>Program Electives (consult advisor)</td>
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Second Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biol 353</td>
<td>4</td>
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<tr>
<td>BE 340</td>
<td>4</td>
</tr>
<tr>
<td>Neuro 430 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Program Electives (consult advisor)</td>
<td>6</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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</tbody>
</table>

1 Satisfied course requirements for entrance into medical or veterinary school.
2 Prereq Chem 345, Neuro 301 and MBioS 303

Program in Neuroscience
### NEUROSCIENCE—COMPUTATIONAL (HARDWARE EMPHASIS) (127 HOURS)

#### First Year
- **First Term**
  - Psych 105 [S] (GER) 3
  - Chem 105 [P] (GER) 4
  - Eng 101 [W] (GER) 3
  - Math 171 [N] (GER) 4
  - GenEd 110 [A] (GER) 3
- **Second Term**
  - Biol 106 [B] (GER) 4
  - Chem 106 [P] (GER) 4
  - Cpt S 121
  - Math 172

#### Second Year
- **First Term**
  - GenEd 110 [A] (GER) 3
  - Chem 345
  - Math 220
  - Math 273
  - Neuro 301
  - Phil 201 [H] (GER) 3
- **Second Term**
  - Biol 106 [B] (GER) 4
  - Chem 106 [P] (GER) 4
  - Cpt S 121
  - Math 172

#### Third Year
- **First Term**
  - E E 214
  - Phys 201 [P] (GER) 4
  - Math 216
  - Math 315
  - Neuro 403 [M]
- **Second Term**
  - Arts and Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - Intercultural [I,G,K] (GER) 3
  - Phys 202
  - MBioS 301
  - Neuro 404

#### Fourth Year
- **First Term**
  - Arts and Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - EE 261
  - E E 262
  - E E 314
  - Neuro 495
  - Program Electives 300-400 EE/CptS 3
- **Second Term**
  - Biol 353
  - E E 324
  - Neuro 430 [M]
  - Program Electives (consult advisor) 2
  - Tier III Course [T] (GER) 3

---

### NEUROSCIENCE—COMPUTATIONAL (SOFTWARE EMPHASIS) (123 HOURS)

#### First Year
- **First Term**
  - Psych 105 [S] (GER) 3
  - Chem 105 [P] (GER) 4
  - Eng 101 [W] (GER) 3
  - Math 171 [N] (GER) 4
  - GenEd 110 [A] (GER) 3
- **Second Term**
  - Biol 106 [B] (GER) 4
  - Chem 106 [P] (GER) 4
  - Cpt S 121
  - Math 172

#### Second Year
- **First Term**
  - GenEd 111 [A] (GER) 3
  - Chem 345
  - Math 220
  - Math 315
  - Neuro 301
  - Phil 201 [H] (GER) 3
- **Second Term**
  - Phys 201 [P] (GER) 4
  - Math 216
  - Cpt S 122
  - MBioS 303

#### Third Year
- **First Term**
  - Engl 402 [C,W] (GER) 3
  - Cpt 440
  - E E 214
  - MBioS 301
  - Neuro 403 [M]
- **Second Term**
  - Arts and Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - Intercultural [I,G,K] (GER) 3
  - Phys 202
  - MBioS 301
  - Neuro 404

#### Fourth Year
- **First Term**
  - Arts and Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - EE 261
  - E E 262
  - E E 314
  - Neuro 495
  - Program Electives (consult advisor) 2
  - Tier III Course [T] (GER) 3
- **Second Term**
  - Biol 353
  - Cpt 322
  - Neuro 430 [M]

---

### NEUROSCIENCE—GENERAL OPTION (120 HOURS)

#### First Year
- **First Term**
  - Biol 106 [B] (GER) 4
  - Chem 105 [P] (GER) 4
  - Eng 101 [W] (GER) 3
  - GenEd 110 [A] (GER) 3
- **Second Term**
  - Biol 107 [B] (GER) 4
  - Chem 106 [P] (GER) 4
  - GenEd 111 [A] (GER) 3
  - Psych 105 [S] (GER) 3

#### Second Year
- **First Term**
  - Arts & Humanities [H,G] (GER) 3
  - Communication Proficiency [C,W] (GER) 3
  - Neuro 301
  - Phys 101 [P] or 201 [P] (GER) 4
- **Second Term**
  - Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - Chem 345
  - Math 140 [N] or 171 [N] (GER) 4
  - Phys 102 [P] or 202 [P] (GER) 4

#### Third Year
- **First Term**
  - Biol 315
  - Biol 438, Psych 384, or 390 3
  - Electives (consult advisor) 8
  - Complete Writing Portfolio
- **Second Term**
  - MBioS 303
  - Neuro 403 [M] 3
  - Electives (consult advisor) 8

#### Fourth Year
- **First Term**
  - Neuro Electives and/or Neuro 495, 499 5
  - Psych 311
  - Tier III Course [T] (GER) 3
- **Second Term**
  - Neuro 430
  - Neuro Electives and/or Neuro 495, 499 6
  - Electives (consult advisor) 5

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### NEUROSCIENCE—PRE-MEDICAL AND PRE-DENTAL OPTION (120 HOURS)

#### First Year
- **First Term**
  - Biol 106 [B] (GER) 4
  - Chem 105 [P] (GER) 4
  - Eng 101 [W] (GER) 3
  - GenEd 110 [A] (GER) 3
- **Second Term**
  - Biol 107 [B] (GER) 4
  - Chem 106 [P] (GER) 4
  - GenEd 111 [A] (GER) 3
  - Psych 105 [S] (GER) 3

---

1. Satisfied course requirements for entrance into medical or veterinary school.
2. Prereq Chem 345, Neuro 301 and MBioS 303
3. Or statistics course approved by advisor.
Program in Neuroscience

NEUROSCIENCE—PRE-VETERINARY OPTION (120 HOURS)

First Year

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
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</tr>
<tr>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 110 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Second Term</td>
<td></td>
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<tr>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
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Second Year

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
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</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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Minors

NEuro

138 Exploration of Neuroscience 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

301 Exploring the Brain 3 Structure and function of the nervous system from single neurons to behavior.

403 [M] Cellular Neurobiology 3 Prereq MBioS 303, Neuro 301, or by interview only. Cellular and molecular interactions occurring within the nervous system.

404 Neuroanatomy 4 (3-3) Prereq Neuro 301, or by interview only. Fundamental principles of the organization and plans of circuitry of the nervous system.

405 [M] Neuroscience of Behavior 3 Prereq Neuro 301, or by interview only. Neural control of feeding and drinking behavior, sociosexual behavior, sleep behavior, and learning and memory.

406 [M] Neuroscience Research Techniques 3 (2-3) Prereq Neuro 301, or by interview only. Historical development, theory and technical bases for contemporary laboratory methods in the neurosciences.

430 [M] Principles of Neuropsychology 4 (3-3) Prereq Neuro 301, or by interview only. Advanced exploration of the principles underlying cellular, sensory, motor and integrative functions of the nervous system.

436 Fundamentals of Synaptic Organization 3 Descriptions of how different circuits in the brain execute normal and pathological fundamentals.

461 Neurobiology 3 Prereq Phys 101; Chem 345 recommended. Study of the nervous system, with an emphasis on the basic mechanisms of neuronal signaling, the function of sensory systems, and neural development. Cooperative course taught by UI (Biol 461), open to WSU students.

480 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

495 Directed Research V 1 (0-3) to 3 (0-9) Prereq Neuro 301; certified major. May be repeated for credit. Introduction to neuroscience laboratory research and literature.

499 Special Problems V 1-4 May be repeated for credit. Prereq certified major. S, F grading.

501 Principles of Life Science Research 1 Prereq by permission only. Same as V Ph 501.

502 Faculty Research in Pharmacology/Toxicology 1 Same as P/T 502.

505 Principles and Methods of Toxicology 3 Same as P/T 505.
506 Principles of Pharmacology 3 Same as P/T 506.
507 Principles of Therapeutics 3 Same as P/T 507.

513 Advanced Neuroanatomy 4 Prereq anatomy or physiology course that included neuroanatomy. Same as V An 513.

520 Fundamentals of Neuroscience 4 (3-3) Prereq permission of instructor or graduate standing. Functional aspects of the brain from cell membrane to higher integrative processes. Cooperative course taught by WSU, open to UI students.

521 Mammalian Neuroscience 3 (2-3) Same as V M 521P.

526 Domestic and Exotic Animal Behavior 2 (1-3) Same as V M 526P.

529 Integrative Neuroscience 3 Prereq biochemistry course. Same as V Ph 529.

531 Neuroscience Laboratory Rotation 1 (0-3) Prereq graduate standing. Same as V Ph 531.

540 Special Topics in Integrative Neuroscience 3 May be repeated for credit; cumulative maximum 6 hours. Concepts and controversies in neuroscience involving integrative properties of cell systems.

541 Special Topics in Cellular and Molecular Neuroscience 3 May be repeated; cumulative maximum 6 hours. Concepts and controversies in neuroscience that involve nerve cell function and regulation.

542 Special Topics in Disciplinary Neuroscience 3 May be repeated; cumulative maximum 6 hours. Concepts and controversies in neuroscience that revolve around traditional approaches to nervous system study.

543 Special Topics in Behavioral/Clinical Neuroscience 3 May be repeated for credit; cumulative maximum 6 hours. Concepts and controversies in neuroscience that involve normal and pathological aspects of behavior.

553 Development and Plasticity of the Nervous System 2 Same as Biol 553. Cooperative course taught by UI (Biol 509), open to WSU students.

561 Biological Signal Processing 3 Development of quantitative models and analysis of neural systems. Cooperative course taught by UI (Neur 5231), open to WSU students.

577 Behavioral Pharmacology 3 Same as Psych 577.

584 Sensory Bases of Behavior 3 Same as Psych 584.

590 Seminar 1 Same as V Ph 590.

592 Research Seminar 2 Same as V Ph 592.

600 Special Projects or Independent Study Variable credit S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit S, F grading.

Intercollegiate College of Nursing
www.nursing.wsu.edu
ICN—Spokane
509-324-7373


BACCALAUREATE PROGRAM

The Intercollegiate College of Nursing was established July 1, 1968, and exists as a joint endeavor of Washington State University, Eastern Washington University, Gonzaga University, and Whitworth College. Its cooperative undergraduate program is the first of its kind among colleges and universities in the United States.

The program is designed for two types of students—those with no previous preparation in nursing, and registered nurses. The curriculum is four academic years of full-time study for the student with no previous preparation in nursing. The length of the program for the registered nurse (RN) is approximately one year of full-time study. The lower-division courses, for students with no previous preparation in nursing (freshman and sophomore years), are offered on the Pullman campus. They provide the student with a foundation in the natural and social sciences and the humanities.

The 300-400-level courses, junior and senior years, are offered at the Intercollegiate College of Nursing in Spokane, the Tri-Cities, and Yakima. They provide professional preparation in nursing. To apply for admission to the college, students must have at least 60 semester hours and all courses prerequisite to nursing completed the term prior to enrollment in the upper division.

The program of study leads to the degree of Bachelor of Science in Nursing. It is approved by the Washington State Nursing Care Quality Assurance Commission and the American Association of Colleges of Nursing and accredited by the National League for Nursing. Upon successful completion of the baccalaureate program, graduates are eligible to take the state examination for licensure as registered nurses.

Transfer Students

Students who plan to transfer to nursing at Washington State University from other institutions should discuss their program early with the nursing advisor on the Pullman campus to select courses that will be applicable to the degree requirements. Registered nurses who plan to obtain their baccalaureate degree in nursing from Washington State University may obtain admission and curriculum information from their nursing advisors on the Pullman, WSU Tri-Cities, and WSU Vancouver campuses.

We expect our graduating students will be able to:

- Provide competent nursing care to individuals, families, groups, and communities through promotion, maintenance, and restoration of health, prevention of illness, and physical, emotional, and spiritual support throughout the life span.
- Formulate nursing practice decisions using evolving knowledge and research from nursing science, the biological and behavioral sciences, and humanities.
- Use developmentally appropriate teaching-learning principles to assist clients to achieve their health goals and to assist colleagues to improve the quality of their nursing care.
- Provide compassionate, ethical care to individuals of diverse cultures, values, beliefs, and lifestyles.
- Demonstrate the values central to nursing practice including altruism, autonomy, human dignity, integrity, and social justice.
- Protect the rights of people to receive optimum care and make informed decisions affecting their health and welfare.
- Uphold the standards and values of the profession including accepting responsibility for learning and personal growth.
- Interpret professional nursing using perspectives gained from past, present, and future trends in nursing and society.
- Advocate for responsible, humane health care policies.
- Partner with clients, families, communities and interdisciplinary health care teams to design and provide quality health care.
- Participate in revision of health care policy and practice within a rapidly changing global environment.
- Demonstrate leadership skills and knowledge of the management process in designing, managing, and coordinating care.
- Use evolving information technology to monitor and improve the health care of clients.
- Demonstrate knowledge of fiscal dimensions with a variety of current and evolving health care systems.

MASTER OF NURSING PROGRAM

The program may be completed in two academic years. Provision is made for part-time matriculation over a longer period of time, subject to policies and requirements of Washington State University and the ICN. Candidates for the MN degree are required to demonstrate competency in relevant computer applications. A thesis or specified non-thesis option is required.

The graduate program in nursing at the Intercollegiate College of Nursing was established in 1983 and has been accredited by the National League for
Nursing (NLN) since 1986 and by the American Association of Colleges of Nursing. The program builds upon an undergraduate baccalaureate degree in nursing and provides a basis for further study at the doctoral level. The purpose is to prepare students for leadership positions in advanced nursing practice. Community-based/population-focused practitioners for leadership positions in advanced nursing practice. Community-based/population-focused practitioners for leadership positions in advanced nursing practice. Community-based/population-focused practitioners for leadership positions in advanced nursing practice.

The Master of Nursing program is open to students who hold a Bachelor of Science in Nursing degree from a nationally recognized accrediting agency. Admission is granted on the basis of the student's (1) undergraduate gpa, (2) skills in history taking and physical assessment, (3) completion of a course in basic descriptive and inferential statistics, (4) eligibility for licensure as a registered nurse in Washington state, and (5) recommendations relative to professional nursing competence and prediction of success as a graduate student. A written interview is required for family nurse practitioner applicants.

Students apply to the Graduate School office in Pullman and the Graduate Program office at the Intercollegiate College of Nursing. Program information, determination of student interests and goals, and assignment of a faculty advisor are provided by the Graduate Program office at the Intercollegiate College of Nursing. For further information, visit nursing.wsu.edu.

We expect that our graduating students:
- Collaborate in the conduct of research with faculty and the community of scholars.
- Provide leadership in planning, implementing, coordinating, and evaluating health care delivery.
- Participate in the formulation of health policy appropriate to a diverse and multicultural society.
- Model and influence the values of the profession of nursing.
- Assume responsibility and accountability for enacting the role of an advance practice nurse within the scope of legal, professional, and ethical standards.
- Integrate theories from nursing and other sciences to provide high quality nursing care.
- Provide evidence-based practice in a variety of settings through the promotion, maintenance, and restoration of health and the prevention of illness.
- Deliver culturally competent nursing and health care.
- Provide direct client care to individuals, families, and/or communities consistent with the knowledge and skills appropriate to advance practice nursing.

### Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

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<tr>
<th>Course</th>
<th>First Year</th>
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<tbody>
<tr>
<td>Nurs 308</td>
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<tr>
<td>Nurs 311</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Nurs 314</td>
<td>Biol 315</td>
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<tr>
<td>Nurs 315</td>
<td>Intercultural [L,G,K] (GER)</td>
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<tr>
<td>Nurs 328</td>
<td>Stat 212</td>
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<tr>
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<tr>
<td>Biol 251</td>
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<tr>
<td>FSHN 233</td>
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<tr>
<td>MBioS 101</td>
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<td>MBioS 102</td>
<td>Chem 102 [P] (GER)</td>
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<tr>
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<td>Communication Proficiency [C,W] (GER)</td>
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<td>MBioS 104</td>
<td>GenEd 111 [A] (GER)</td>
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<td>Nurs 318</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Nurs 322</td>
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<td>Nurs 414</td>
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<td>Nurs 415</td>
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<td>Nurs 416</td>
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<td>Nurs 417</td>
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<th>Course</th>
<th>Fourth Year</th>
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<tbody>
<tr>
<td>Nurs 409</td>
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<tr>
<td>Nurs 424</td>
<td>Hours</td>
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### NURSING (126 HOURS)

Fifty-nine semester hours are required in 300-400-level nursing major courses. Additional 300-400-level nursing or non-nursing electives may be required.

A grade of C or better is required in all prerequisite courses and nursing courses.

Criteria for admission to the 300-400-level nursing major include an overall cumulative gpa of 2.8 or higher and a cumulative gpa of 2.8 or higher in prerequisite courses. Responses to personal interview questions may be used as additional admission criteria. A part-time schedule of study is available; see advisor.

### First Year

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<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Psych 105 [S] (GER)</td>
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<td>Soc 101 [S] or 102 [S] (GER)</td>
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<td>Biol 102 or 103 [B] (GER)</td>
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<tr>
<td>Chem 102 [P] (GER)</td>
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<tr>
<td>MBioS 101 [B] (GER)</td>
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<td>Biol 251</td>
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<td>Nurs 314</td>
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<td>Nurs 315</td>
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<td>Nurs 328</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<td>Nurs 309</td>
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<td>Nurs 318</td>
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<td>Nurs 322</td>
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<td>Nurs 325</td>
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### Fourth Year

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<td>Nurs 414</td>
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<td>Nurs 415</td>
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<td>Nurs 416</td>
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<td>Nurs 417</td>
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<td>Tier III Course [T] (GER)</td>
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<td>Nurs 409</td>
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<td>Nurs 424</td>
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### NURSING—REGISTERED NURSES OPTION

#### BACHELOR OF SCIENCE


### Description of Courses

#### Nursing Courses

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Nurs 275</td>
<td>3</td>
</tr>
<tr>
<td>Special Topics: Study Abroad</td>
<td>1-15</td>
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<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>307 Assertiveness Training for Nurses</td>
<td>2</td>
</tr>
<tr>
<td>Junior standing; major in nursing. Assertion techniques and conflict management skills in personal and nursing situations; integrating theoretical concepts into practical situations.</td>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>308 Professional Development I: Research and Informatics</td>
<td>2</td>
</tr>
<tr>
<td>Prereq admission to nursing program or by permission. First of professional development series; focus on nursing and health care research, information management, informatics, and development of nursing research.</td>
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<tbody>
<tr>
<td>309 Professional Development II: Ethical Reasoning and Decision Making Processes in Nursing</td>
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<tr>
<td>Prereq Nurs 308; c// Nurs 315. Continuation of professional development series; moral/ethical reasoning models, decision processes, and philosophical basis of nursing as a discipline.</td>
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<th>Course</th>
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<tbody>
<tr>
<td>311 Pathophysiology and Pharmacology in Nursing</td>
<td>4</td>
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<tr>
<td>Prereq admission to nursing. Etiology, pathogenesis, clinical manifestations of common human dysfunction; nursing implications for prevention and therapeutic approaches including pharmacologic and nonpharmacologic therapies.</td>
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<tbody>
<tr>
<td>315 Nursing Practice: Health and Illness</td>
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<tr>
<td>(0-12) Prereq Nurs 308, 311, 314. Introduction to nursing practice and health assessment: professional values, core competencies, core knowledge and role development.</td>
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<td>S, F grading.</td>
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<th>Course</th>
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<tbody>
<tr>
<td>316 Introduction to Nursing Practice in Health and Illness: Theory</td>
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<tr>
<td>Prereq Nurs 308, 311, 317 or c//. Introduction to nursing concepts and holistic assessment including core professional values, knowledge and competencies for nursing practice.</td>
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<tr>
<td>317 Health Assessment</td>
<td>3</td>
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<tr>
<td>(2-2) Prereq Nurs 308, 311, 316 or c//. Systematic approach to health assessment of adults emphasizing and incorporating use of nursing process and scientific rationale.</td>
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</table>
318 Growth and Development Across the Life Span 3 Prereq admission to nursing or by permission. Theoretical and conceptual perspectives on human growth and development across the life span.

322 The Human Experience of Diversity and Health 2 Prereq admission to nursing or by permission. Explorations of regional, national, and global expressions of health and illness and implications for health care professionals.

324 Nursing Concepts in Acute and Chronic Illness in the Adult 4 Prereq Nurs 311, 314, 315. Theoretical concepts of acute and chronic illness in the adult as a basis for critical thinking and decision-making in nursing.

325 Nursing Practice in Acute and Chronic Illness in Adults 5 (0-15) Prereq Nurs 311, 314, 315; c// Nurs 324. Application of acute/chronic illness concepts in adults as a basis for critical thinking and decision-making in nursing. S, F grading.

326 Referral to Gerontological Nursing 2 Prereq c// Nurs 318. Professional values, communication, and functional assessment in care of elders; core knowledge and role development of the gerontological nurse.

360 Professional Nursing Concepts and Issues 2 Prereq certified in nursing or RN. Philosophical, historical, economic, legal/ethical, and professional issues designed for registered nurses to build upon previously acquired professional concepts.

365 Nursing Concepts: Assessment and Application of Physiological Concepts to Nursing Practice I 3 Prereq certified in nursing; registered nurse. Integration of pathophysiological, assessment, pharmacological nursing concepts with diverse client populations; emphasizing neurological, EENT, skin, musculoskeletal, endocrine, and respiratory systems.

366 Nursing Concepts: Assessment and Application of Physiological Concepts to Nursing Practice II 3 Prereq certified in nursing; registered nurse. Integration of pathophysiological, assessment, pharmacological nursing concepts with diverse client populations; emphasizing fluid/electrolytes, oncology, GI/GU; cardiovascular; immune system, renal.

390 Laboratory Value Analysis and Interpretation 2 Prereq Nurs 312. Analysis and interpretation of common laboratory values with nursing focused application in selected case scenarios. S, F grading.

391 Concepts of Caring 2 Explores nursing concept of caring using personal narratives, storytelling, and literary discussions to foster practices of mutuality, constructed knowing, and heightened sensitivity.

392 Therapeutic Touch: A Nursing Modality of Caring and Healing 3 (2-3) Prereq completion of one semester of nursing or by permission. Explores the broad arena of touch as a means of interpersonal communication and as a mechanism for healing using Krieger-Kunz method.

398 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

400 Nursing Research and Informatics 3 Prereq enrolled in WSU College of Nursing; registered nurse. Application of informatics skills and research processes to clinical practice; incorporates first level informatics concepts.

405 Nursing Leadership 2 Prereq certified in nursing; registered nurse. Application of group leadership and management theories to professional nursing practice.

406 Nursing Management 3 Prereq enrolled in WSU College of Nursing; registered nurse. Management, leadership, and group theories are utilized and applied to the management of nursing and health care.

408 Professional Development III: Leadership and Management 3 Prereq Nurs 309. Continuation of professional development series; focus on impact of leadership, management, and resource allocation on patient outcomes.

409 Professional Development IV: Transition to Practice 2 Prereq Nurs 408. Continuation of professional development series; focus on transition to practice and nursing across health care systems/delivery within global arena.

414 Child and Family Health: Theory 3 Prereq Nurs 324, 325; c// Nurs 318, 328. Analysis and evaluation of scientific and theory base for nursing care of children and families.

415 Children and Families as the Focus of Nursing Care 3 (1-6) Prereq Nurs 324, 325; c// Nurs 318, 328. Analysis and application of underlying science and nursing process with the unique population of children and families. S, F grading.

416 Childbearing Health of the Family 3 Prereq Nurs 324, 325; c// Nurs 318, 328. Care of childbearing families within the context of community; newborn health, and men's and women's reproductive health addressed.

417 Nursing Care of Childbearing Families 2 (0-6) Prereq Nurs 324, 325; c// Nurs 318, 328, 415, 416. Nursing care of families during the childbearing continuum and/or acute care settings; combination of clinical and seminar. S, F grading.

424 Psychiatric/Mental Health Nursing Concepts 3 Prereq Nurs 414, 415, 416, 417. Healthy to psychopathological states studied within a nursing framework; includes history, theories, legal/ethical issues of psychiatric/mental health nursing.

425 Nursing Practice: Psychiatric/Mental Health 2 (0-6) Prereq Nurs 414, 415, 416, 417; c// Nurs 424. Clinical application of the nursing process with clients experiencing acute and chronic psychiatric/mental health disorders. S, F grading.

426 Community Health Nursing Theory 2 Prereq Nurs 414, 415, 416, 417. Synthesis of nursing and public health concepts with emphasis on community as partner and population-focused practice.

427 Community Health Nursing Practice 3 (0-9) Prereq Nurs 414, 415, 416, 417; c// Nurs 426. Promoting the public's health through application of the public health functions; assessment, policy development, and assurance. S, F grading.


440 Nursing Concepts: Community Health 2 Synthesis of nursing and public health concepts with focus on community as partner, and population-based practice.

462 Selected Nursing Concepts: Psychiatric/Mental Health 2 Prereq nursing and public health concepts with focus on community as partner, and population-based practice.

465 Nursing Practice: Community and Psychiatric Mental Health 3 (0-9) Prereq Nurs 462 and 440 or c//. Application of community health, public health, and psychiatric/mental health nursing concepts to individuals, families, and communities with identified health needs.

477 Health Care Ethics 2 or 3 Ethical theories including deontology, teleology, virtue ethics and applicability to ethical dilemmas in nursing. Credit not granted for both Nurs 477 and 577.

478 Plateau Tribes: Culture and Health 3 (2-3) Prereq junior/senior in health care of human services/health professionals. History, culture, and health care needs of the Plateau Indian tribes; both classroom and practicum experience. Credit not granted for both Nurs 478 and 578.

479 Advanced Physiology for Clinical Practice 3 Prereq Admission to WSU nursing program. Cellular and system physiology foundational to advanced practice and understanding drug mechanisms of action.

480 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

490 Basic Dysrhythmia Interpretation/Advanced Cardiac Life Support 2 Prereq completion of Nurs 420 or c// or permission of instructor. Basic interpretation of common ECG rhythms, dysrhythmias, and application of ACLS dysrhythmia management guidelines.

491 Advanced Cardiac Life Support (ACLS)and Laboratory Value Analysis and Interpretation 3 Prereq Nurs 311, 324, 325 or by permission. Analysis/interpretation of common laboratory values; basic interpretation of common ECG rhythms, dysrhythmias, and application of ACLS dysrhythmias management guidelines.

495 Nursing Practice: Advanced Clinical Practicum 2 (0-6) Prereq certified in nursing. Application and integration of theoretical content in an area of nursing practice of special interest to the student.
V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Nurs 320 or by interview.

V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Nurs 320 or by interview.

V 1-4 May be repeated for credit. S, F grading.

Scientific Inquiry in Nursing 2 Prereq graduate standing in nursing or permission of the instructor. Scientific inquiry applied to theoretical and philosophical foundations in nursing.

Methods of Nursing Research 4 Prereq Nurs 503 or c/. Research process as foundational to both conduct of scientific inquiry and utilization of findings.

Health Care Policy Analysis V 2 or 3 Prereq graduate standing. Analysis of health care system policy; exploration of issues of clinical management and community resource utilization including advocacy techniques.

Innovative Leadership and Management V 3, 4 (3-3), or 5 (3-6) Prereq graduate standing in nursing. Key issues affecting nursing administration; nursing and management theories for application in nursing service settings.

Financial Management V 2 (2-0) or 3 (2-3) Prereq graduate student in nursing. Application of economic theory and principles of financial management to the role of nurse manager.

Teaching in the Information Age 3 Prereq basic computer skills; permission of instructor. Focus on educational paradigms consistent with distance education; development of a variety of multimedia materials for nursing education.

Nursing Education in a Multicultural Society V 3 (0-9) to 5 (0-15) Prereq permission of instructor. Application of learning theories and strategies useful in teaching diverse populations; taught in a distance degree format.

Teaching, Learning and Evaluation in Nursing V 3 (3-0) to 5 (3-6) Prereq graduate standing in nursing or permission. Explanation of concepts related to teaching-learning, assessment of diverse learning needs, instructional strategies and design, evaluation of performance outcomes.

Nursing Education: Past, Present, and Future V 3 (3-0) to 5 (3-6) Prereq graduate standing in nursing or permission. Exploration of curriculum history, development, future predictions; program evaluation, instructional resources, leadership, and policy development in academic and service settings.

Role Analysis: Advanced Practice 2 (1-3) Prereq graduate student in nursing. Emphasis on role analysis including interdisciplinary relationships, consultative skills, responsibility, activities, and functions of the advanced practice nurse.

Family and Partner Psychotherapy 4 (2-6) Prereq Nurs 541, 543; psych/mental health nursing major or permission of instructor. Introduction to theory and practice of family/partner therapy including role of therapist in treatment of family as a unit.

Psychiatric/Mental Health Nursing: Individuals 4 (3-3) Prereq graduate standing in nursing; Nurs 581 or c/. Theories of psychopathology and appropriate nursing interventions with individuals across the age continuum.

Role Development and Practice Management for the Psychiatric Mental Health Practitioner 2 Prereq admission to the PMHNP program or permission of instructor. Advanced practice role development, definition of scope and standards of independent and collaborative practice of the psychiatric nurse practitioner.

Psychiatric Mental Health Nursing 4 (3-3) Prereq Nurs 541, 581. Introduction to theory and practice of group psychotherapy; milieu and other selected theories studied and applied to nursing practice.

Advanced Concepts of Psychiatric/Mental Health Nursing: Children and Adolescents 5 (3-6) Prereq Nurs 541, 543 or permission of instructor. Advanced study of intervention models for psychopathologies evidenced during childhood and adolescence; practicum emphasizes assessment, psychiatric diagnosis, and psychotherapeutic intervention.

Practicum in Psychiatric/Mental Health Nursing 4 (1-9) or 5 (1-12) Prereq Nurs 541, 543, 562, 581; PharmP 525 or c/. Individualized clinical experience/seminar designed to provide advanced competency, accountability, leadership in psychiatric/mental health nursing.

Psychiatric Nurse Practitioner Internship V 1-9 Prereq Nurs 546, PharmP 525, by interview only. Application and integration of theory, research findings, and interventions in the primary care of clients with psychiatric disorders. May be repeated for credit; cumulative maximum 9 hours.

Addiction Perspectives 2 Prereq Graduate standing in nursing or permission of instructor. Overview of the theories, physiology, course and epidemiology of addictions; assessment, evaluation, prevention and treatment.

International, Interdisciplinary, and Transcultural Health Care 3 Prereq graduate standing in nursing or permission. Diverse health beliefs and practices of clients and members of the interdisciplinary health care team.

Family Nursing in the Community 2-4 Theoretical approaches to the analysis of normal and at-risk families; application of family assessment and intervention models when planning care.

Epidemiological Approaches to Community Health 3 Prereq graduate standing in Nurses. Epidemiological application to health; implications for health promotion, disease prevention; focus: knowledge and skills required to obtain and use databases.

Community-Based/Population-Focused Nursing Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq Nurs 530, 552, 554, 556, 564, or permission of instructor. Application and integration of theory, research findings, and community analyses/macro-level intervention strategies in performing community-based/population-focused nursing. S, F grading.

Community-Based/Population-Focused Role Practicum V 3 (2-3) to 6 (2-12) Prereq permission of instructor. Culminating analysis, development, and enactment of advanced practice roles in teaching, practice, or administration of community-based/population-focused nursing.

Care Management with At-Risk Infant and Young Child Populations 3 Prereq graduate standing in nursing or by permission. Analysis of biopsychosocial health risks of infants and young children using model of risk and resiliency in advanced nursing practice.

Care Management with At-Risk Older Child and Adolescent Populations 3 Prereq graduate standing in nursing or by permission. Analysis of biopsychosocial health risks of older children and adolescents using models of risk and resiliency in advanced nursing practice.

Advanced Nursing Practice with At-Risk Child and Youth Populations Practicum V 2-4 Prereq graduate standing in nursing or by permission; Nurs 557 and 558 or c/. Application of concepts/models of childhood risk and resiliency in advanced nursing practice with community-based-at-risk older children and adolescents.

Promoting Health of Community-Based Adults V 2 (2-0) to 4 (2-6). Analysis and evaluation of strategies, interventions, and programs to promote the health of at-risk adult community populations.

Advanced Assessment and Diagnosis for the Psychiatric Mental Health Practitioner 3 Prereq Admission to PMHNP program. Assessment and diagnosis of psychiatric illnesses; focus on physical and psychiatric history, mental status exam and strategies of psychometric evaluation.

Advanced Health Assessment and Differential Diagnoses 4 (3-3) Prereq graduate standing in nursing. Advanced holistic health assessment/differential diagnostic; analysis of data from biological, sociological, psychological, cultural, and spiritual dimensions.

Advanced Pharmacological Concepts and Practice 3 (2-3) Prereq graduate standing in nursing. Pharmacology for clinical practice including decision making, prescribing, drug monitoring, and patient education associated with prescriptive authority.
564 Health Promotion in Nursing Practice
2 or 3 Prereq graduate standing in nursing. Theoretical bases including cultural variations for selected health promotion strategies for neonates through elderly clients.

565 Information Management for Nursing Practice 3 (2-3) Prereq computer competency in word processing/spreadsheets. Application/evaluation of nursing informatics; use for management of patient care data in nursing practice and administration.

566 Community Analysis and Program Planning V 2 (1-3) or 3 (2-3) Prereq graduate standing in nursing. Application of core public health functions in community analysis, program development and program evaluation.

567 Primary Care: Adults and Elders 4 (2-9) Prereq Nurs 562, 563, 581. Assessment, differential diagnosis, and therapeutic intervention with adults; developmental changes; opportunities to provide diagnostic, maintenance, and follow-up care.


570 Clinical Decision Making 1 (0-3) Prereq Nurs S81, 562, 563; concurrent with first clinical course. Provides a framework for systematic collection, organization, interpretation, and communication of data for the development of differential diagnosis.

571 Adult and Elders: Inpatient Management of Chronic Problems 6 (3-9) Prereq Nurs 562, 563, 581, c/c in S75. Diagnosis and treatment of inpatient adults and elders with low to medium acuity.

572 Adult and Elders: Inpatient Management of Acute/Critical Problems 6 (3-9) Prereq Nurs 562, 563, 581; c/c in Nurs S75. Diagnosis and treatment of inpatient adults and elders with high to critical acuity.

573 Diagnostic Testing and Interpretation 3 (2-3) Prereq graduate standing in nursing. Analysis of diagnostic findings across the age continuum for clinical decision making; selected diagnostic and treatment skills for advanced practice.

574 Health Care Ethics 2 or 3 Graduate-level counterpart of Nurs 477; additional requirements. Credit not granted for both Nurs 477 and 577.

575 Plateau Tribes: Culture and Health 3 (2-3) Graduate-level counterpart of Nurs 478; additional requirements. Credit not granted for both 478 and 575.

576 Vulnerable Populations: The Homeless 3 Prereq graduate standing in nursing or by permission. Analysis of factors placing persons at risk for homelessness; proposal of policy changes based on research and experiential learning.

577 Advanced Pathophysiology 4 Prereq graduate standing in nursing or permission of instructor. Advanced cellular and system pathophysiology of individuals with neurological, endocrine, immune, hematologic, cardiopulmonary, renal, gastrointestinal, bone and skin disorders.

578 Promoting Health of Community-Based Elders V 2 (2-0) to 4 (2-6) Prereq graduate standing in nursing. Advanced practice role in assessment, nursing intervention and public policy regarding multidimensional physical, emotional, and social problems of community-based elderly.

579 Acute Care Internship V 1-10 Prereq Nurs 562, 563, 581; Nurs 571 or 572. Application and integration of theoretical content, research findings, and assessment and intervention strategies into acute care practice.

580 Nursing Care of Children in a School Setting 3 (2-3) Prereq graduate standing in nursing. Assessment of the school age population including high risk students; development, management, and evaluation of school health services.

581 Internship V 1-10 Prereq Nurs 562, 563, 581; one of Nurs 567, 568, 569, 571, or 572. Application and integration of theoretical content, research findings, and assessment and intervention strategies into primary care practice. S, F grading. May be repeated for credit; cumulative maximum 10 hours.

582 Post-Master’s Psychiatric Nurse Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq completion of course work for a clinical nurse specialist in psychiatric mental health nursing or psychiatric nurse practitioner, malpractice insurance as an ARNP with prescriptive authority, by interview only. Supervised performance of the ARNP role in psychiatric nursing care for patients presenting primary psychiatric disorders.

583 Advanced Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours.

584 Advanced Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours.

585 Independent Study Variable credit. S, F grading.

586 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

587 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

College of Pharmacy

www.pharmacy.wsu.edu/

COLLEGE OF PHARMACY
Acting Dean B. L. Pitcher; Associate Dean and Professor, C. A. Elstad; Associate Dean and Professor, D. E. Baker

DEPARTMENT OF PHARMACEUTICAL SCIENCES
Professor and Acting Chair, B. K. Slinker; Professors, G. G. Meadows, K. M. Meier, R. M. Quock; Associate Professors, M. E. Black, S. D. Davood, N. M. Davies, B. P. Lawrence; Clinical Associate Professors, S. L. Chambers, H. Chinichian, C. S. Elstad

DEPARTMENT OF PHARMACOTHERAPY

The College of Pharmacy offers a course of study leading to a Doctor of Pharmacy (PharmD) degree. The PharmD schedule of studies involves a six year commitment, consisting of two pre-pharmacy years and four professional years. The third professional year of the PharmD curriculum is delivered in the Health Sciences building located on the Washington State University Spokane Campus. The fourth professional year of the PharmD curriculum consists of experiential training, and is conducted away from the Pullman campus of Washington State University. The majority of students will complete their fourth professional year in either Spokane, Yakima, Vancouver, or the Tri-Cities. Students will gain experience in a variety of health care environments, including community, institutional, and long-term care settings. Ninety-four students are enrolled each fall in the first professional year of the PharmD program. To request an application packet or for additional information regarding the Doctor of Pharmacy curriculum, please see the College of Pharmacy home page at www.pharmacy.wsu.edu, or contact the College of Pharmacy Office of Student Services at 509-335-1402.

We expect our graduates to do the following:
1) Communication: The graduate shall read, write, speak, listen, and utilize appropriate methods and resources to communicate effectively and professionally.
2) Critical Thought: The graduate shall acquire, comprehend, apply, analyze, synthesize, and evaluate information and be able to integrate these abilities to identify, assess, resolve, and prevent problems and make appropriate decisions.
3) Professionalism: The graduate shall practice ethically within the boundaries of the laws of pharmacy, uphold professional values, and accept the responsibilities embodied in the principles of pharmacetical care.
4) Professional Development, Responsibility, and Leadership: The graduate shall assume responsibil-
ity for continuous professional development and
provide leadership, education, and influence for
improvement in the health and well-being of indi-
viduals and society.

5a) Pharmaceutical Care Basic Knowledge: The
graduate shall integrate basic medical and pharmacy
knowledge to evaluate, design, and implement pa-
tient-specific, evidence-based pharmacotherapeutic
regimens with the intent of identifying, preventing,
and resolving drug related problems.

5b) Patient Assessment: Recognize, collect, and
organize patient information that is pertinent to
identifying, preventing, and resolving drug related
problems.

5c) Pharmacotherapy Assessment: Interpret and
evaluate medical and drug therapy data in order to
assess the appropriateness of a patient’s pharma-
cotherapy to identify, prevent, and resolve drug
related problems and/or answer drug information
requests.

5d) Care Plan Development: Formulate a phar-
macutical care plan based on successful prior collection
and evaluation of patient information.

5e) Medication Provision and Patient Education:
Prepare/compound prescriptions from medication
orders, dispense or administer medications, assess
the level of patient medication knowledge, provide
information that empowers patients to effectively
manage their medication-related health care, and
monitor the effectiveness of the care plan.

5f) Care Plan Management: Monitor the care plan
for therapeutic efficacy, cost effectiveness, adverse
events, and recommend changes when necessary.

6) Systems Management: The graduate shall develop,
implement, and monitor medication distribu-
tion, control, quality management, and pharmacy
management activities, processes, and systems.

6a) Medication Distribution and Control: Develop,
implement, and/or manage systems for preparation,
dispensing, distribution, and administration of med-
ications, while documenting and maximizing the
prevention of medication errors.

6b) Pharmacy Management: Understand the de-
velopment, implementation, and management of
administrative processes for the pharmacy practice
site.

6c) Quality Management: Manage the systematic
and continuous process of evaluating and improving
the utilization of medications in a patient population
in order to enhance the quality and cost effective-
ness of care.

PROFESSIONAL CURRICULUM
(192 HOURS)

First Year

First Term

Biol 315 4
Biol 352 3
PharP 450 3
PharP 451 1
PharS 332 1
PharS 437 1
PharS 531P 3
Complete Writing Portfolio

Hours

Second Term

Biol 353 4
PharP 456 1
PharP 572P 1
PharS 532P 3

Hours

Second Year

First Term

PharP 457 1
Pharp 573P 1
Pharp 581P 3
Pharp 533P 3
Pharp 542P 4
Pharp 546P 3
Pharp 556P 3

Hours

Second Term

Pharp 552P 5
Pharp 574P 2
Pharp 534P 2
Pharp 543P 4
Pharp 544P 2
Elective 3

Third Year

First Term

Pharp 541P 2
Pharp 553P 5
Pharp 557P 2
Pharp 558P 2
Pharp 575P 2
Electives 6

Hours

Second Term

Pharp 538P 2
Pharp 542P 3
Pharp 554P 5
Pharp 576P 2
Pharp 582P 2
Elective 3

Electives 6

Fourth Year

Fourth Term

Pharp 561P 5
Pharp 562P 5
Pharp 563P 5
Pharp 564P 5
Pharp 565P 5
Pharp 566P 5
Pharp 567P 5

Hours

The fourth professional year begins in May im-
mEDIATELY following the end of the spring semester
of the third professional year. Students must complete
5 credits of each advanced practice experience
listed below for a total of 42 weeks during the fourth
professional year of the program.

Description of Courses

Pharmacy Practice Courses

Pharp 217 Drugs in Our Society 2 For nonmajors.
Major the use and abuse of illicit substances.
450 Wellness and Preventive Medicine 3 Prin-
ciples and techniques of health education and preventive
medicne.
451 Pharmacy Practice 1 Basic clinical skills, in-
terpretation of patient data, problem-solving
skills, professional communications, profes-
sionalism and pharmacy ethics.

456 Early Practice Experience I 1 (0-3) Prereq
Pharp 450. Practical experience which intro-
duces knowledge and skills related to patient
education, disease management, and medical self-care.
For Pharm.D. students only. S, F grading.

457 Early Practice Experience II 1 (0-3) Prereq
Pharp 450, 456. Continued practical experience in
using knowledge and skills related to patient
education, disease management, and medical self-care as well as one-on-one mentoring of
other students. For Pharm.D. students only. S, F grading.

499 Special Problems V 1-4 May be repeated for
credit. S, F grading.

511 P Advanced Pharmacotherapeutics I 1

512 P Advanced Pharmacotherapeutics II 1
Pharmacotherapy of cardiovascular disorders.
S, F grading.

513 P Advanced Pharmacotherapeutics III 1
Pharmacotherapy of musculoskeletal disorders.
S, F grading.

514 P Advanced Pharmacotherapeutics IV 1

515 P Advanced Pharmacotherapeutics V 1

516 P Advanced Pharmacotherapeutics VI 1
Pharmacotherapy of hematology and oncology
diseases. S, F grading.

517 P Advanced Pharmacotherapeutics VII 1

518 P Advanced Pharmacotherapeutics VIII 1
Pharmacotherapy of gastrointestinal disor-
ders. S, F grading.

519 P Advanced Pharmacotherapeutics IX 1
Pharmacotherapy of neuropsychiatric disor-
ders. S, F grading.

525 P Practical Psychiatric Drug Therapy
for Clinicians 3 Review of practical psychi-
atriatric drug therapy for physicians, pharmacists,
mental health professionals and others working
in the mental health field.

531 P Clinical Research Methods I: Phar-
macoconomics 2 Prereq PharS 533P, PharP
552P. Pharmacoeconomics and biostatistics.

532 P Clinical Research Methods II: Phar-
macoepidemiology 3 Prereq PharP 531P, 557P.
Pharmacepidemiology and biostatistics.

533 P Pediatric Pharmacotherapy 1 Prereq
Pharp 553P or c//. Pharmacotherapy of pediatric
medicine.

534 P Critical Care Pharmacotherapy 1 Prereq
Pharp 553 or c//. Pharmacotherapy of critical
care medicine.

535 P Medication Errors 1 Prereq third profes-
sional year student. Identifying and preventing
medication errors and misadventures.
538 P Parenteral Products 2 (1-3) Prereq PharS 437, 533P. Preparation of intravenous admixtures, parenteral nutrition; pharmacotherapy of fluid/electrolyte disorders, parenteral nutrition, and emergency medications.


542 P Nonprescription/Herbal Products 3 Prereq PharP 533P, 558P. Pharmacotherapy of nonprescription medications and herbal products.

552 P Pharmacotherapy I 5 Prereq PharS 533P, 542P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases.

553 P Pharmacotherapy II 5 Prereq PharP 552P, PharS 543P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases.

554 P Pharmacotherapy III 5 Prereq PharP 552P, PharS 543P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases.

555 P Special Topics 2 Contemporary issues in pharmacy.

557 P Clinical Pharmacokinetics 1 (0-3) to 2 (1-3) May be repeated for credit; cumulative maximum 2 hours. Prereq PharS 533P. Applications of pharmacokinetic principles to safe and effective therapeutic management of individual patients in a clinical setting.

558 P Literature Evaluation 1 or 2 May be repeated for credit; cumulative maximum 2 hours. Prereq PharP 553P or c/. An overview of the biomedical literature emphasizing how to evaluate the pharmaceutical and biomedical literature to provide better patient care.

561 P Acute Care Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharM.D. didactic coursework complete. Advanced practice experience in acute care settings.

562 P Ambulatory Care Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharM.D. didactic coursework complete. Advanced practice experience in ambulatory care settings.

563 P Elective I Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharM.D. didactic coursework complete. Advanced practice experience in acute or ambulatory patient care settings.

564 P Elective II Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharM.D. didactic coursework complete. Advanced practice experience in acute, ambulatory, or non-traditional patient care.

565 P Elective III Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharM.D. didactic coursework complete. Advanced practice experience in various health care settings.

566 P Community Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharM.D. didactic coursework complete. Advanced practice experience in a community pharmacy setting.

567 P Institutional Advanced Practice Experience V 1 (0-3) to 5 (0-15) Prereq Pharm. D. didactic coursework complete. Advanced practice experience in an institutional pharmacy setting.

568 P Extended Degree Advanced Practice Experience V 1 (0-3)-20 (0-60) May be repeated for credit, cumulative maximum 20 hours. Prereq five pharmacotherapeutic weekend workshops complete. Advanced practice experience in various health care settings.

572 P Pharmaceutical Care Laboratory I 1 (0-3) Prereq PharP 451 or c/. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

573 P Pharmaceutical Care Laboratory II 1 (0-3) Prereq PharP 551P or c/, PharP 572P. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

574 P [M] Pharmaceutical Care Laboratory III 2 (0-6) Prereq PharP 552P or c/, PharP 573P. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

575 P Pharmaceutical Care Laboratory IV 2 (0-6) Prereq PharP 553P or c/, PharP 574P. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

581 P [M] Pharmacy Management 3 Management principles applied to pharmacy practice; health systems; patient care strategies.

582 P Pharmacy Law 2 Prereq PharP 554P or c/. Laws relating to the practice of pharmacy.

590 Advanced Topics in Infectious Disease 1 Topics in infectious disease.

591 P Medication Error Prevention 2 Prereq junior standing; certified health sciences major. Interdisciplinary responsibilities and approaches to detection and prevention of medication errors; practice in developing risk management plans in specific cases.

592 P Medical Devices for Home Health Care 2 Prereq third professional year student. Review of medical devices used by patients for home care or self care and providing recommendations to patients concerning these devices.

599 P Special Projects 2 May be repeated for credit; cumulative maximum 4 hours. Laboratory research, clinical research, or comprehensive review of selected subjects. S, F grading.

531 P [M] Pharmaceutics 3 Prereq Chem 345, 346, Math 140. Physiochemical principles underlying the design of dosage forms; survey of materials and methods used in the manufacture of dosage forms.

532 P Pharmaceutics II 3 Prereq PharS 531P. The study of the interaction between dosage forms and various biological systems.

533 P Pharmaceutics III 3 Prereq PharS 332, 531P, 532P. Pharmacokinetics of medication absorption, distribution, and elimination; medication regimen design.

534 P Pharmaceutical Biotechnology 2 Prereq PharS 543P. Pharmacological and pharmaceutical properties of medications derived from biotechnology.


541 P Pharmacological Basis of Therapeutics I 3 Prereq c/ PharS 540P. Molecular pharmacology and drug action; drug development; genetic factors and biochemical processes involved in drug disposition; drug interactions; and micronutrients.

542 P Pharmacological Basis of Therapeutics II 4 Prereq PharS 541P. Structure activity relationship, mechanism of action, medication-related effects, therapeutic uses, adverse reactions, and drug interactions of peripheral nervous system and cardiovascular medications.

543 P Pharmacological Basis of Therapeutics III 4 Prereq PharS 542P. Structure activity relationship, mechanism of action, medication-related effects, therapeutic uses, adverse reactions, and drug interactions of endocrine and central nervous system medications.

544 P Toxicology 2 Prereq PharS 542P, 556P. Mammalian toxicology emphasizing basic concepts, target organ toxicity, carcinogenesis, clinical toxicology, and the toxicology of natural products and dietary supplements.
to understand their adverse effects and their useful interaction of chemicals with biological systems.


Program in Pharmacology and Toxicology

www.pharmacy.wsu.edu/PharmTox/

Wegner Hall 340F

509-335-7598


The sciences of pharmacology and toxicology are important to maintenance of human and animal health, food resources, and environmental quality. Pharmacologists and toxicologists study the interaction of chemicals with biological systems to understand their adverse effects and their useful effects for the treatment of disease. The pharmacology/toxicology program consolidates the research and teaching expertise of faculty primarily in the Colleges of Pharmacy (Pharmaceutical Sciences Department) and Veterinary Medicine (neuroscience faculty). Because this program involves interdisciplinary studies, we have affiliate graduate faculty members from the following academic units at WSU: chemistry, entomology, biological sciences, and molecular biosciences. We also have adjunct faculty from the food science and toxicology department at the University of Idaho in Moscow, Idaho, as well as faculty at the Pacific Northwest National Laboratory (PNNL) in Richland, Washington.

Students entering the program should have completed undergraduate work in biology, chemistry (including organic chemistry and biochemistry), mathematics (through calculus), a 300-level organ/mammalian physiology course, and an undergraduate statistics course. We also welcome applications from applicants who have a bachelor's or professional doctorate in pharmacy. Deficiencies may be rectified during the first year of graduate study, but this may hinder the student's ability to take core P/T courses in the first year. Students in both the MS and PhD programs are expected to develop an area of emphasis that is consistent with the research capabilities and interests of the faculty.

Each student in the program is required to complete the core curriculum: MBiSoS 513/514 (514-PhD only), P/T 501, P/T 502, P/T 505, P/T 506, P/T 507, P/T 555 (PhD only), P/T 597, and V Ph 505 (stats). In addition, elective graded coursework (currently 6 credits for MS students; 12 credits for PhD students) from advanced courses in pharmacology, toxicology, or related subjects are required. The student, in consultation with his/her advisor, selects elective course work that complements each student's research and career interests. Each student is required to write a thesis based upon original laboratory research. The research interests of the faculty span a broad spectrum, including animal models of disease (colitis, ulceration, hyperlipidemia, colorectal cancer, hepatitis), behavioral and neuropharmacology, cancer biology, cardiovascular pharmacology, drug metabolism, endocrinology, immunopharmacology and -toxicology, medicinal chemistry, molecular biology (including gene therapy, epitope tags, and site-directed mutagenesis), pharmacokinetics, enzyme assays (radioactive and fluorescent), reproductive biology, and signal transduction.

Our program is housed in Wegner Hall on the main campus in Pullman. Research methods being employed by the faculty include: amino acid analysis, animal pharmacokinetics, behavioral (anxiety and pain) testing, cFos immunocytochemistry, cell culturing and sorting, cell transfections (including siRNA), DNA sequencing, flow cytometry, immunoblotting and -precipitation, lipid analyses, mitochondrial DNA-PCR, mouse tumorigenesis testing, oligonucleotide and peptide synthesis, Phase I and Phase II in vitro metabolism, phospholipase assays (radioactive and fluorescent), radioligand binding assay, radioimmunoassay, and signal transduction analyses.

Laboratories of individual faculty members in the pharmacology and toxicology program are well equipped with 2-D protein electrophoresis equipment, beta and gamma_counters, BioRad Gel Doc imaging system (visible and UV), Cartesian and Kopf stereotaxic headholders (custom-built for behavioral studies), cell electrophorator, Cytofluor fluorescence machine, gas and high performance liquid chromatographs (HPLC), fluorescence and UV/visible microplate readers, flow cytometer, densitometer, liquid scintillation spectrometer, Molecular Dynamics STORM system (fluorescence and UV imaging), PCR and real-time PCR instrumentation, triple-quad mass spectrometer and HPLC, and other instruments to perform their research projects. Wegner Hall is home to WSU's Health Sciences Library. Also located on campus is an Electron Microscopy Center, facilities for NMR, and imaging equipment. Graduate faculty have access to accredited animal care facilities.

Applications for admission to the program must include official GRE scores, official transcripts for all college level work, three letters of recommendation, and a letter discussing career goals and research interests. For students whose native language is not English, TOEFL scores above 600 (paper-based test) or 250 (computer-based TOEFL) are required. Applications and inquiries should be directed to: Admissions Committee, Pharmacology/Toxicology Graduate Program, WSU, PO Box 646534, Pullman, WA 99164-6534 or e-mail: pharmtox@wsu.edu.

Description of Courses

Pharmacology and Toxicology Courses

P/T

501 Fundamentals of Graduate Research in the Life Sciences 1 Prereq by permission only. Same as V Ph 501.

502 Faculty Research in Pharmacology/Toxicology 1 Prereq graduate standing. Introduction to faculty research for incoming graduate students. S, F grading.

505 Principles and Methods of Toxicology 3 Prereq MBiSoS 513 or c//; 300-level organ/mammalian physiology or permission of instructor. Basic concepts in mammalian toxicology and the methodology currently employed for toxicological investigations. Cooperative course taught by WSU, open to UI students (FST 505).

506 Principles of Pharmacology 3 Prereq MBiSoS 513 or c//. Mechanisms of drug action and the factors that modify drug responses; drug design and development. Cooperative course taught by WSU, open to UI students (FST 506).

507 Principles of Therapeutics 3 Prereq 300-level organ/mammalian physiology; P/T 506. Organ systems pharmacology, including drug actions, effects, side effects, and interaction of medications used in therapeutics.


512 Topics in Pharmacology V 1-4 May be repeated for credit; cumulative maximum 12 hours. By interview only. Topics of current interest in pharmacology and closely related disciplines. Cooperative course taught by WSU, open to UI students (VS 512).

532 Metabolism of Drugs and Toxins 2 Prereq MBiSoS 513/564; Rec P/T 506. Pathways, enzymology and mechanisms of metabolism of drugs, environmental contaminants and other xenobiotics; pharmacological and toxicological impact of metabolism. Cooperative course taught by WSU, open to UI students (FST 532).

543 Scientific Writing 1 Prereq two semesters of graduate work in the biomedical sciences, with lab rotations. A highly personalized course designed to help graduate students develop writing skills for biomedical science careers.

555 General and Cellular Physiology 4 (3-3) Prereq cell physiology or genetics course. Same as V Ph 555.

556 Insecticides: Toxicology and Mode of Action 1 Same as Entom 556.

557 Herbicides: Toxicology and Mode of Action 1 Same as Entom 557.

558 Pesticide Topics 1 Same as Entom 558.
Department of Philosophy

libarts.wsu.edu/philo
Bryan Hall 316
509-335-4249

Associate Professor and Department Chair, D. L. Shier; Professors, M. W. Myers, H. S. Silverstein; Associate Professors, M. K. Bloodworth-Lugo, J. K. Campbell, D. M. Holbrook, M. R. Neville.

The Department of Philosophy offers courses which provide the student with an introduction to fundamental intellectual problems and both classical and contemporary attempts at their solutions. Students are encouraged to develop their own critical faculties.

The department offers a course of study leading to the degree of Bachelor of Arts in Philosophy.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

PHILOSOPHY—PRELAW OPTION (120 HOURS)   FYDA

No course with a grade of D+ or less will be counted toward the major, no course taken pass, fail may be counted toward the major, and the overall GPA for courses in the major must be at least a C (2.0).

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Degree Program Course 1</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<tr>
<td>Communication Proficiency C,W (GER)</td>
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<tr>
<td>Phil 201</td>
<td>3</td>
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<tr>
<td>Science Elective (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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Second Year

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<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Degree Program Course 1</td>
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<td>Foreign Language, if necessary, or Elective</td>
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<td>Elective</td>
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<tr>
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</tr>
<tr>
<td>Degree Program Course 1</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>4</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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Third Year

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Science [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Phil 360, 365, or 370</td>
<td>3</td>
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<tr>
<td>Pol S 300</td>
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<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>Complete Writing Portfolio</td>
<td>3</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Science [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Elective</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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Fourth Year

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<th>Course</th>
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<tr>
<td>Phil Electives</td>
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<td>Phil Electives</td>
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<tr>
<td>Electives</td>
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</tbody>
</table>

Philosophy

The minor in philosophy consists of 16 hours of course work, at least 8 of which must be in 300-400-level courses. Courses are chosen by the student, in consultation with the department, but will normally include Phil 101 and will always include Phil 201.

Minors

Ethics

The minor in ethics consists of 18 credit hours, of which at least 15 must be from ethics courses within the department of philosophy, such as Phil 260, 360, 365, 370, 460, 462, and 472. Three credit hours may, with approval of the department of philosophy, be from an ethics course in the student's major or in another department. Nine of the 18 hours must, in accord with University policies, be in upper-division course work.

Philosophy

The minor in philosophy consists of 16 hours of course work, at least 8 of which must be in 300-400-level courses. Courses are chosen by the student, in consultation with the department, but will normally include Phil 101 and will always include Phil 201.
Description of Courses

Philosophy Courses

Phil

101 [H] Introduction to Philosophy 3 Nature and place of philosophy in human thought; problems and achievements.

198 [H] Philosophy Honors 3 Open only to students in the Honors College.

200 [W] Writing and Reasoning 3 Application of critical thinking skills to essay writing.

201 [H] Elementary Logic 3 Analysis and evaluation of deductive and non-deductive arguments.

205 Debating Social/Political/Philosophical Issues 2 (0-4) Introduction to and practice in debate techniques applied to current issues.

207 [H] Philosophy of Religion 3 Critical inquiry into the existence and nature of God; the problem of evil; the relation of faith and reason; immortality and miracles. Cooperative course taught jointly by WSU and UI (Phil 207).

210 [H] Philosophy in Film 3 The use of film as "philosophical text", discussing philosophical theories and debates presented in films, both old and new. Cooperative course taught by WSU, open to UI students (Phil 210).

220 [H] Aesthetics 3 Analysis of aesthetic experience; applications to art and nature; criteria of art criticism. Cooperative course taught by WSU, open to UI students (Phil 220).

240 Philosophy of Sport 3 Philosophical issues in sports (e.g. sports ethics, the role of sports in society, and the aesthetics of sports).

260 [H] Introduction to Ethics 3 Ethics through analysis of contemporary moral and social issues.


315 [G,M] Philosophies and Religions of China and Japan 3 Prereq 3 hours Phil. The philosophies and religions of China and Japan, and their metaphysical, epistemological, ethical, social, and political positions and views of God and gods.

320 [H] History of Ancient and Medieval Philosophy 3 Prereq 3 hours Phil. Pre-Socrates, Plato, Aristotle: post-Aristotelian philosophy to the Renaissance. Cooperative course taught jointly by WSU and UI (Phil 320).

321 [H] History of Modern Philosophy 3 Prereq 3 hours in Phil. Renaissance, 17th and 18th century philosophers. Cooperative course taught jointly by WSU and UI (Phil 321).

322 [H] Nineteenth-century Philosophy 3 Prereq 3 hours in Phil. The Continental, post-Kantian tradition, with emphasis on thinkers such as Hegel, Schopenhauer, Kierkegaard and Nietzsche. Cooperative course taught by WSU, open to UI students (Phil 322).

325 [M] History of Analytic Philosophy 3 Prereq 3 hours Phil. Selected major philosophers, issues, and trends in analytic philosophy.

350 [H] Philosophy of Science 3 Purpose and logical structure of science; human implications. Cooperative course taught jointly by WSU and UI (Phil 250).

360 [H] Business Ethics 3 The principles of ethics as applied to specific problems in business faced by individuals and corporate institutions.

365 [H] Biomedical Ethics 3 Ethical problems in medicine and biological research.

370 [H] Environmental Ethics 3 The place of humans in nature and human obligations to nature, if any.

390 Topics in Philosophy 3 May be repeated for credit; cumulative maximum 6 hours.

401 Advanced Logic 3 Prereq Phil 201. First-order predicate logic plus some metatheory, applications and/or extensions. Credit not granted for both Phil 401 and 501. Cooperative course taught by WSU, open to UI students (Phil 401).

407 Seminar in Philosophy of Religion 3 May be repeated for credit; cumulative maximum 6 hours. Senior seminar for majors in religious studies. Advanced topic-driven seminar. Critical analysis of traditional and contemporary religions and religious phenomena. Cooperative course taught by WSU, open to UI students (Phil 407).

413 [T] Mind of God and the Book of Nature: Science and Religion 3 Prereq completion of science General Education Requirements, completion of one Tier I and two Tier II courses. Methodological comparison; cutting edge issues in science as they impact theology; guest lectures from professors in the natural sciences.

415 [T] The Experience of Illness in Society: Moral Problems in Health Care 3 Prereq completion of one Tier I and three Tier II courses; senior standing. Synthesis of learning from life experience, humanities, and professional courses to address moral problems in health care.

420 Contemporary Continental Philosophy 3 Prereq 3 hours Phil. Twentieth-century European movements in philosophy; phenomenology, existentialism, structuralism, deconstruction, and others. Cooperative course taught by WSU, open to UI students (Phil 420).

425 [T,D] Philosophy and Feminism 3 Prereq 3 hours Phil or W St 200. Feminist philosophy as critique of Western philosophical tradition and as alternate framework for thought. Cooperative course taught jointly by WSU and UI (Phil 425).

431 [T] Philosophy of Art 3 Prereq completion of one Tier I and three Tier II courses. Philosophical exploration of any or all of the arts, emphasis on value considerations and comparisons of differing media. Cooperative course taught jointly by WSU and UI (Phil 431).

435 [T] East/West Philosophy of Architecture 3 Prereq completion of one Tier I and three Tier II courses. East/West philosophies and their impact on understanding of nature and architecture.

442 [M] Analytic Philosophy of Mind 3 Prereq 3 hours Phil. Theories of mind, self, mental acts, psychological states and artificial intelligence. Cooperative course taught jointly by WSU and UI (Phil 442).

443 Philosophy of Language 3 Prereq 3 hours Phil. Investigation of philosophical issues concerning meaning, reference, truth, the nature of language, and the relation between language and thought. Cooperative course taught jointly by WSU and UI (Phil 443).

446 Metaphysics 3 Prereq 3 hours Phil. Issues and theories concerning free will and determinism, the nature of truth, the existence of God, space, time and identity. Cooperative course taught jointly by WSU and UI (Phil 446).

447 Theory of Knowledge 3 Prereq 3 hours Phil. Problems and theories concerning skepticism, the nature and scope of knowledge, a priori knowledge, and induction. Cooperative course taught jointly by WSU and UI (Phil 447).

451 Philosophy of Biology 3 Prereq 3 hours Phil, 3 hours Biol. Conceptual problems and value questions in defining biology as a human endeavor and in defining its scope and its aims. Cooperative course taught by UI (Phil 451), open to WSU students.

460 [M] Ethical Theory 3 Prereq 3 hours Phil. Problems of ethical theory as treated by historical and contemporary philosophers. Cooperative course taught jointly by WSU and UI (Phil 460).

462 [M] Women and Ethics 3 Prereq Phil 101 or W St 200. Same as W St 462. Cooperative course taught by WSU, open to UI students (Phil 462).

470 Philosophy of Law 3 Prereq 3 hours Phil. Selected topics pertaining to moral and philosophical evaluation of law. Cooperative course taught jointly by WSU and UI (Phil 470).

472 [M] Social and Political Philosophy 3 Prereq 3 hours Phil. Problems of normative social and political theories; historical and contemporary philosophers. Cooperative course taught jointly by WSU and UI (Phil 472).

490 INPC Seminar 2 Prereq 6 hours philosophy or by permission. Focused study of the topic of the annual Inland Northwest Philosophy Conference with guest instruction by scholars from the conference.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.
501 Advanced Logic  3 Graduate-level counterpart of Phil 401; additional requirements. Credit not granted for both Phil 401 and 501. Cooperative course taught by WSU, open to UI students (Phil 501).

504 Special Topics in Philosophy  3 Prereq graduate standing. Intensive study of a special topic not otherwise covered in depth in the curriculum. Cooperative course taught jointly by WSU and UI (Phil 504). May be repeated for credit; cumulative maximum 12 hours.

510 Seminar in the History of Philosophy  3 Prereq graduate standing. Systematic exploration of the central works of an individual philosopher or philosophical movement. Cooperative course taught jointly by WSU and UI (Phil 510). May be repeated for credit; cumulative maximum 6 hours.

520 Seminar in Ethical Theory  3 Prereq graduate standing. The major issues, views, and figures of ethical theory from ancient Greece to the present. Cooperative course taught by WSU, open to UI students (Phil 520).

522 Seminar in Metaphysics  3 Prereq graduate standing. The nature of reality, through study of key concepts such as God, personhood, free will, causation, space, time, and identity. Cooperative course taught jointly by WSU and UI (Phil 522).

524 Seminar in Epistemology  3 Prereq graduate standing. Classical problems, questions, and theories involving the concept of knowledge. Cooperative course taught jointly by WSU and UI (Phil 524).

530 Bioethics  2 Prereq graduate standing. Professional ethics for scientists; ethical implications of new technologies; obligations to human and non-human research subjects. Cooperative course taught by WSU, open to UI students (Phil 530).

532 Seminar in Business Ethics  3 Prereq graduate standing. The major issues in business ethics, both domestic and international, from general principles to specific cases. Cooperative course taught by WSU, open to UI students (Phil 532).

535 Advanced Biomedical Ethics  3 Prereq graduate standing. Current ethical issues in medical practice, medical research and public policy relating to health issues. Cooperative course taught by WSU, open to UI students (Phil 535).

552 Environmental Philosophy  3 Prereq graduate standing. Philosophical examination of various ethical, metaphysical and legal issues concerning humans, nature and the environment. Cooperative course taught by UI (Phil 552), open to WSU students.

556 Religion and Environment  3 Concepts of the sacred, the human and nature and their interrelationships with religious traditions and how they relate to ecology and environmental ethics. Cooperative course taught by UI (Phil 556), open to WSU students.

571 Ecological Jurisprudence  3 Prereq graduate standing. Nature of law at the intersection of nature and culture including influences from the philosophy of pragmatism. Cooperative course taught by UI (Phil 571), open to WSU students.

600 Special Projects or Independent Study  Variable credit S, F grading.

700 Master’s Research, Thesis, and/or Examination  Variable credit. S, F grading.

### Physical Education Activity

**PEB 101**

**509-335-1309**

### Description of Courses

**Physical Education Activity (PEACT) Courses**

These courses are open to all students. PEACT courses numbered 100 through 174 are for beginners. Those numbered 177 and above are for intermediate or advanced students. PEACT course credit is granted on the basis of 1 credit per hour. These courses may not be repeated for credit, with the exception of PEACT 200 Special Topics (1 credit, repeatable to a maximum of 4 hours). Only 8 hours of PEACT credit may be applied toward graduation credit.

Courses are graded A, S, or F, except as noted.

**PEACT**

101 Beginning Conditioning  S, F grading.
102 Beginning Conditioning ROTC  S, F grading.
106 Self Defense  S, F grading.
107 Beginning Judo  S, F grading.
108 Karate  S, F grading.
112 Weight Training  S, F grading.
114 Beginning Gym Tumbling  S, F grading.
116 Gymnastics  S, F grading.
119 Aerobic Dance  S, F grading.
120 American Social Dance Men  S, F grading.
121 American Social Dance Women  S, F grading.
122 Beginning Ballet  S, F grading.
124 Tap Dancing  S, F grading.
126 Beginning Mod Dance  S, F grading.
127 Beginning Jazz Dance  S, F grading.
128 Beginning Swimming  S, F grading.
131 Scuba Diving  S, F grading.
132 Conditioning Swimming  S, F grading.
133 Water Aerobics  S, F grading.
140 Jogging  S, F grading.
141 Beginning Golf  S, F grading.
143 Beginning Bowling  S, F grading.
145 Beginning Fencing Men  S, F grading.
146 Beginning Fencing Women  S, F grading.

### Physical Science Courses

**Description of Courses**

**Physical Science Courses**

**Ph S**

298 [P] Physical Science Honors  4 (3-3) Concepts from cosmology, astronomy, physics, chemistry, and biochemistry; how matter evolved from the Big Bang to intelligent life forms.

430 Methods of Teaching Physical Science  3 (2-3) Prereq T & L 303; 12 hours science. Methods, philosophy, and structure of science; application in teaching middle/secondary school physical science courses.
Department of Physics and Astronomy

www.physics.wsu.edu
Webster 1245
509-335-9532


Physics is the study of nature at its most fundamental level. It is the science upon whose principles all other sciences and technologies are based. A major in physics is ideal preparation for further study in physics or for advanced study in biology, medicine, astrophysics, geophysics, chemical physics, engineering, meteorology, and computer science. These same areas also offer careers for the physics major.

Courses offered by the physics department introduce the student to the major physical theories: mechanics, thermodynamics and statistical physics, electricity and magnetism, and quantum physics. Additional undergraduate courses cover optics, atomic physics, nuclear physics, solid state physics, and astrophysics. Students test the theories in laboratories and learn experimental techniques needed to work with modern apparatus such as computers, high-vacuum equipment, lasers, and electronic and optical devices.

Active research programs supported by federal grants and contracts are pursued in the following fields: acoustics (scattering, nonlinear processes, and levitation); astronomy (luminosity calibration, spectroscopy, statistics); astrophysical generation gravitational waves, gravitational wave data analysis, cosmology; optical properties of semiconductors; biophysics; clusters physics; optical physics (femtosecond laser spectroscopy, scattering from doped polymers, nonlinear optics, quantum electronics, Fourier spectroscopy, diffraction catastrophes); physics education (use of microcomputers in teaching and labs); nuclear solid state physics (Mössbauer effect, perturbed angular correlation, positron annihilation studies of defects in solids); shock wave and high pressure physics (chemical and structural response of condensed materials to high dynamic pressures, time-resolved optical spectroscopy, shock and detonation wave propagation, chemical reactions, dynamic mechanical failure); surface and chemical physics (synchrotron SAFS, diamond films, molecular interactions with surfaces, reactive etching of surfaces, photoelectric and thermal emission microscopy); and theory (quantum chaos, nonlinear dynamics, mesoscopic systems, phase transitions and critical phenomena, quantum liquids and gases, atomic and molecular physics, classical and quantum gravity, black hole thermodynamics, and low-temperature physics). These research groups offer graduate students the opportunity to pursue original investigations required for advanced degrees. Undergraduate physics majors are encouraged to participate in research through the special-project course (Phys 499) and through part-time jobs that are sometimes available.

The department offers courses of study leading to the degrees of Bachelor of Science in Physics, Master of Science in Physics, and Doctor of Philosophy (Physics). Astronomy courses at both the undergraduate and graduate levels are administered by the department. Instruction in astronomy is enhanced by the use of a 12-inch refractor at the Jewett Observatory and a Spitz planetarium. Opportunities are available for students to collaborate with faculty to do research projects.

The Department of Physics is a major participant in the Materials Science Program and offers courses and research opportunities leading to advanced degrees in this interdisciplinary program.

The Department of Physics, in collaboration with the School of Electrical Engineering and Computer Science, offers a specialized Master of Science in Physics in the multidisciplinary area of Optoelectronics.

The Department of Physics has developed a variety of options for students seeking a major in physics. For most of these options, the program in the first two years is the same. The program is appropriate for students who have had a good experience with calculus and wish to start physics in their second semester at WSU. Students who have placed into Math 172 can accelerate the math sequence. Upon consultation with the departmental advisor, modifications can be made in the list of required courses to fit the needs of individual students.

Certification Requirements

A student may certify as a physics major after completing 30 credits (preferably including Phys 201 and Math 171) with a cumulative GPA of 2.0 or better. A research experience is required of all students as a 499 project; however, to gain valuable work experience outside the University, students are strongly encouraged to participate in an internship or research experience in industry or a government lab outside of WSU. The summer after the junior year is the most appropriate time for this experience. All students are required to submit an undergraduate thesis to a committee of two physics faculty members in the senior year. Phys 490 will give credit for this effort. The student must earn a C (2.0) or better grade in each of the required physics courses.

Transfer Students

Transfer students receive credit for equivalent courses taken elsewhere, but must meet the requirements for graduation listed.

Preparation for Graduate Study

Undergraduate students contemplating graduate work in physics should consider enrolling in Phys 443, 521, 571, and additional math courses. At least one year of German, Russian, or French is also recommended.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

PHYSICS—FIRST AND SECOND YEAR REQUIREMENTS

The first year requirements are common to all physics degree programs:

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 105 [P] (GER) or 115</td>
<td>4</td>
</tr>
<tr>
<td>Degree program course, if necessary</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 A or 111 A (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
</tr>
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Second Term

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<tr>
<td>Chem 106 [P] (GER) or 116</td>
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</tr>
<tr>
<td>GenEd 110 A or 111 A (GER)</td>
</tr>
<tr>
<td>Math 172</td>
</tr>
<tr>
<td>Phys 201 or 205</td>
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Second Year

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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
</tr>
<tr>
<td>Degree program course, if necessary</td>
</tr>
<tr>
<td>Math 220</td>
</tr>
<tr>
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<td>Math 315</td>
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<tr>
<td>Phys 303</td>
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<tr>
<td>Phys 330</td>
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<tr>
<td>Social Sciences [S, K] (GER)</td>
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</tbody>
</table>

Note: the minors listed require that the student apply to the respective department before graduation. The minors are never automatically issued. In some degree programs, the course work is close to that required for a minor, but the student must negotiate with the relevant department to finalize that minor program; these degree programs are listed as possibly offering the minor.

Consult the physics department to determine when classes should be taken.

The third/fourth year options are:

Standard Four-Year Degree Option

This program yields a Bachelor of Science in Physics degree with a minor in mathematics.

Art & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [L,G,K] (GER); Social Sciences [S,K] (GER); Engl 402 [W,M]; Tier III Humanities or Social Sciences Course (GER); Math Electives (6 hours) selected from Math 340, 360, 375, 401, 402, 415, 420, 440, 441, 443, 448; Phys 304, 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M], 499 (One hour of 499 in an appropriate
department or physics required. Additional hours may be taken for credit.

**Standard Option**

This program yields a Bachelor of Science in Physics degree with a minor in mathematics.

**Astrophysics Option**

This program yields a Bachelor of Science in Physics degree with a minor in mathematics and astronomy.

**Biophysics Option**

This program yields a Bachelor of Science in Physics degree with a minor in mathematics and possibly biochemistry.

**Computational Physics Option**

This program yields a Bachelor of Science in Physics degree with a minor in mathematics and possibly in computer science.

**Continuum Physics and Acoustics Option**

This program yields a Bachelor of Science in Physics degree with a minor in mathematics.

**Optics and Electronics Option**

This program yields a Bachelor of Science in Physics degree with a minor in mathematics and possibly in electrical engineering.

**Physics**

This program yields a Bachelor of Science in Physics degree with a minor in mathematics and a primary endorsement to teach physics and a supporting endorsement to teach mathematics.

**Minors**

**Astronomy**

The program in astronomy offers a 19-hour minor in astronomy consisting of Astr 345, 435, 436, at least two hours from Astr 390, 490, or 499, and at least 3 hours from Geol 103, ASTR 135, or Hist 381. The minor also requires Math 273 and Phys 303. These courses have as prerequisites Math 220, 171, 172 and Phys 201, 202. These prerequisites are often required as part of physical science major programs (Chemistry, Computer Science, Engineering, Geology, and Physics) so that students in these fields will find the astronomy minor more accessible than students in other fields.

**Description of Courses**

**Astronomy Courses**

**Astr**

135 [P] Astronomy 4 (3-2) Overview of the solar system, stars, galaxies, cosmology, and the history of astronomy. Includes a lab component with occasional evening meetings. Credit not granted for both Astr 135 and 150.

150 [Q] Science and the Universe 3 Basic structure and history of science and science reasoning with emphasis on astronomy, observational practice, and data analysis. Credit not granted for both Astr 135 and 150.

188 Freshman Seminar I 1 Same as Phys 188.

189 Freshman Seminar II 1 Same as Phys 189.

345 [P] Principles of Astronomy 3 Prereq Phys 102 or 202. Planets, the sun, stars, and galaxies; current topics in astrophysics and planetary research.


435 Astronomy and Astrophysics I 3 Prereq Math 172, Phys 202. Planets, solar systems, and stars. May be repeated for credit; cumulative maximum 6 hours.


450 [T] Life in the Universe 3 Prereq completion of one Tier I and three Tier II courses and mathematics proficiency. The natural history of life on Earth and prospects for life elsewhere; includes chemistry, biology, geology, physics, and astronomy.

490 [M] Undergraduate Thesis 1 Same as Phys 490.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Graduate Seminar 1 Same as Phys 501.

538 Topics in Modern Astrophysics 3 May be repeated for credit; cumulative maximum 9 hours. Same as Astr 538.

581 Advanced Topics in Modern Astrophysics 3 Same as Phys 581.

595 Seminar in Astronomy/Astrophysics 1 Same as Phys 595.

600 Special Projects or Independent Study Variable credit. S, F grading.

Physics Courses

Phys

101 [P] General Physics 4 (3-3) Prereq Math 107 with a grade of C or better or placement into Math 140 or higher. Algebra/trigonometry-based physics; topics in mechanics, wave phenomena, temperature, and heat; oriented toward non-physical science majors.

102 [P] General Physics 4 (3-3) Prereq Phys 101 with a grade of C or better. Algebra/trigonometry-based physics; topics in electricity, magnetism, optical phenomena, relativity, and quantum theory; oriented toward non-physical science majors.

103 Problem Solving for Physics 101 1 Prereq c// enrollment in Phys 101. Small class environment for students who desire focused attention on problem solving skills as applied to Phys 101 materials. S, F grading.

104 Problem Solving for Physics 102 1 Prereq c// enrollment in Phys 102. Small class environment for students who desire focused attention on problem solving skills as applied to Phys 102 materials. S, F grading.


150 [Q] Physics and Your World 3 (2-2) Survey of physics as found in everyday phenomena; including many hands-on activities and home experiments. Field trips required.

188 freshman Seminar I 1 Faculty will present current research interests and opportunities in physics; questions and discussion. Taught annually each fall. S, F grading.

189 freshman Seminar II 1 Faculty will present current research interests and opportunities in physics; questions and discussion. Taught annually in the spring. S, F grading.

201 [P] Physics for Scientists and Engineers I 4 (3-3) Prereq Math 171 with a grade of C or better or placement into Math 172 or higher. Calculus-based physics; topics in motion and dynamics of particles and rigid bodies, vibrations, wave phenomena, and the laws of thermodynamics.

202 [P] Physics for Scientists and Engineers II 4 (3-3) Prereq Math 172 with a grade of C or better or placement into Math 273 or higher. Calculus-based physics; topics in electricity, magnetism, electromagnetics, D/C and A/C circuits, optics, reflection, refraction, interference, diffraction, polarization.

203 Problem Solving for Physics 201 1 Prereq c// enrollment in Phys 201. Small class environment for students who desire focused attention on problem solving skills as applied to Phys 201 materials. S, F grading.


206 [P] Physics for Scientists and Engineers II—Honors 5 (3-4) Prereq Math 172; Phys 201 or 205. Calculus-based physics, honors section; electricity, magnetism, light, topics in modern physics.

303 Modern Physics 1 3 Prereq Math 220 or c//; Phys 202. Quantum and relativity theories with applications to atomic, solid state, nuclear and elementary particle physics.


320 Mechanics 3 Prereq Math 315 or c//; Phys 102 or 202. Particle motion in one-, two-, and three-dimensions; motions of systems of particles; rigid body motion; Lagrange's equations.

330 Thermal Physics 3 Prereq Math 273; Phys 202. Thermal behavior of systems; energy and entropy; equations of state; changes of phase; elements of continuum and statistical approaches.

341 Electricity and Magnetism I 3 Prereq Math 315 or c//; Phys 202. Electrostatic fields, magnetic fields, dielectric and magnetic media.


380 [P] Physics and Society 3 Interactions of physics with society; energy; air and water pollution; recycling; communications and computers; physics and war; physics and art.

410 Electronics 3 (1-6) Prereq Phys 102 or 202. Laboratory construction and investigation of electronic circuits employed in research instruments.

412 Modern Optics Laboratory 3 (2-3) Prereq Phys 443 or c//. Fundamentals of experimental modern optics and applications in science and engineering.


435 Astronomy and Astrophysics 3 Prereq Math 172; Phys 202. Same as Astr 435.

436 Astronomy and Astrophysics II 3 Math 172; Phys 202. Same as Astr 436.

443 Optics 3 Prereq Phys 341 or c//. Polarization, interference, coherence, and diffraction phenomena of the electromagnetic spectrum; optics of solids; laser resonators; gaussian beams; ABCD matrices.

450 Introduction to Quantum Mechanics 3 Prereq Math 315; Phys 303. Introduction to quantum theory with applications to atomic physics. Cooperative course taught jointly by WSU and UI (Phys 450).

461 Introduction to Atomic and Molecular Physics 3 Prereq Phys 304. Introduction to atomic and molecular physics; spectroscopy.
463 Introduction to Solid State and Materials Physics 3 Prereq Phys 304. Introduction to the physics of solids; crystal structures, lattice vibrations, and electron theory. Cooperative course taught jointly by WSU and UI (Phys 463).


490 [M] Undergraduate Thesis 1 Preliminary thesis draft of a laboratory or library research experience, oral presentation, and final draft. Variable credit. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Graduate Seminar 1 Introduction to graduate and interdisciplinary research. S, F grading.

514 Optoelectronics Lab I V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 3 hours. Prereq graduate standing. Experiments with optical systems: Imaging, interference, coherence, information storage/processing, gas and solid state lasers, optical fibers, and communications systems.

515 Optoelectronics Lab II V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 3 hours. Prereq graduate standing. Experiments in optical physics, physical properties of light, laser physics, waveguides, quantum confined semiconductor structures and ultrafast dynamics and nonlinear optics.

521 Classical Mechanics I 3 Prereq Phys 320; 571 or c//. Laws of motion as developed by Newton, d’Alembert, Lagrange, and Hamilton; dynamics of particles and rigid bodies. Cooperative course taught jointly by WSU and UI (Phys 521).


533 Thermal and Statistical Physics I 3 Prereq Math 440; Phys 330. Thermodynamic laws and potentials, kinetic theory, hydrodynamics and transport coefficients; introduction to statistical mechanics, ensembles, partition functions. Cooperative course taught jointly by WSU and UI (Phys 533).


541 Electromagnetic Theory 3 Prereq Phys 342, 571 or c//. Special relativity and the classical electromagnetic field; emission, propagation, and absorption of electromagnetic waves. Cooperative course taught jointly by WSU and UI (Phys 541).

542 Electrodynamics 3 Prereq Phys 541. Interaction of matter and electromagnetic radiation; classical and quantum electrodynamics. Cooperative course taught jointly by WSU and UI (Phys 542).

545 Nonlinear Optics 3 Prereq Phys 534, 542, 551. Nonlinear wave propagation theory applied to several nonlinear-optical phenomena; experimental techniques that probe a material’s nonlinearity.

546 Quantum Electronics 3 Prereq Phys 541, 551 or c//. The physics of lasers and of coherent optical radiation generation and propagation.

550 Quantum Theory I 3 Prereq Math 440, 441; Phys 450. Introduction to quantum theory; physical and mathematical foundations; application to atomic systems. Cooperative course taught jointly by WSU and UI (Phys 551).

551 Quantum Theory II 3 Prereq Phys 550, 571. Symmetry and invariance; angular momentum theory; approximation methods. Cooperative course taught jointly by WSU and UI (Phys 552).

552 Quantum Theory III 3 Prereq Phys 551. Scattering theory; relativistic wave mechanics; quantum field theory. Cooperative course taught jointly by WSU and UI (Phys 553).


563 Physics of the Solid State 3 Prereq Phys 534, 551. Lattice vibrations and defects; ionic and electronic conductivities; band theory; magnetic properties; luminescence. Cooperative course taught jointly by WSU and UI (Phys 563).

565 Nuclear Physics 3 Prereq Phys 465, 551. Nuclei and nuclear interactions from theoretical and experimental viewpoint, properties of nuclei, two-body problems, complex nuclei, nuclear spectroscopy, reactions, models. Cooperative course taught jointly by WSU and UI (Phys 566).

571 Methods of Theoretical Physics 3 Prereq Math 440, 441. Mathematical methods for theoretical physics; linear algebra, tensor analysis, complex variables, differential equations, integral equations, variational calculus, and group theory. Cooperative course taught jointly by WSU and UI (Phys 571).

573 Physical Applications of Group Theory 3 Prereq Phys 551. Introduction to group theory with application to atoms, molecules, solids, and elementary particles; no previous knowledge of group theory assumed. Cooperative course taught by UI (Phys 573), open to WSU students.

575 Advanced Solid State Physics 3 Prereq Phys 534, 542, 552 or c//, 563, 571. Quantum theory of solids; Green’s functions, correlation functions and other field-theoretic methods; magnetism, superconductivity and transport properties.

581 Advanced Topics 3 May be repeated for credit; cumulative maximum 12 hours. Topics of current interest in advanced physics. Cooperative course taught jointly by WSU and UI (Phys 581).

590 Seminar 1 May be repeated for credit. S, F grading.

592 Wave Propagation Seminar 2 Prereq Math 440, 441. May be repeated for credit; cumulative maximum 4 hours. Waves in the continuum; elastic, plastic, and hydrodynamic waves; shock waves. S, F grading.

594 Seminar in Solid-State Physics 1 May be repeated for credit; cumulative maximum 4 hours. Topics in the physics of solids; the experimental and theoretical study of the electronic and atomic structure of materials. S, F grading.

595 Seminar in Astronomy/Astrophysics 1 May be repeated for credit; cumulative maximum 4 hours. Prereq graduate standing. Current topics in theoretical and observational aspects of modern astrophysics. S, F grading.

596 Seminar in Optical Physics 1 May be repeated for credit; cumulative maximum 3 hours. Current topics in experimental and theoretical aspects of optical physics. S, F grading.

598 Teaching Undergraduate Physics Laboratories 1 May be repeated for credit; cumulative maximum 4 hours. Principles and practices of teaching, planning and management of undergraduate physics laboratories; choice and care of equipment. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
Plant pathology is the study of plant diseases, including causes, economic consequences, epidemiology, and control. Opportunities for graduates in plant pathology include positions in research and development, teaching, extension, and sales. Plant pathologists are employed throughout the world by industries, governments, educational institutions, and private foundations.

A limited undergraduate program is designed to provide a broad background in the biological, physical, and agricultural sciences. However, most opportunities in plant pathology require advanced degrees. Students who intend to terminate University training with a baccalaureate degree are encouraged to enroll in the Integrated Pest Management curriculum.

The courses offered in this department are designed both to train students expecting to make plant pathology or mycology their professional field of specialization and to provide supplementary training for students in other biological and agricultural fields, particularly botany, crop science, genetics, horticulture, forestry, and entomology. Students who expect to become professional plant pathologists are advised to include in their undergraduate studies fundamental courses in bacteriology, botany, chemistry, genetics, physics, and zoology.

A professional career in plant pathology requires graduate training, and the four-year course outlined under the schedule of studies is basic for such later specialization. Students often enter advanced work in plant pathology following a major in biology, botany, crop science, genetics, horticulture, molecular biology, or similar areas as well as in plant pathology. Specialized areas of advanced study include mycology, nematology, virology, epidemiology, disease physiology, molecular biology of host-parasite relationships, ecology of disease development, biochemistry of pathogenicity, disease resistance, chemical control, and biological control. Research is conducted on diseases of grain crops, forage crops, forest trees, fruit, vegetables, ornamentals, and turf.

The department offers courses of study leading to the degrees of Bachelor of Science in Agriculture, Master of Science in Plant Pathology, and Doctor of Philosophy.

An interdisciplinary curriculum in Integrated Pest Management is available to those whose interests span the areas of plant pathology and pest management. The curriculum is described under the Entomology section of this catalog.

**Preparation for Graduate Study**

As preparation for work toward an advanced degree a student should have completed a bachelor's degree; at least one year each of general inorganic chemistry, botany, zoology, physics; one semester each of systematic botany, plant pathology, bacteriology, general plant pathology, entomology, precalculus, organic chemistry, genetics, and report writing or advanced composition.

**Schedules of Studies**

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

### PLANT PATHOLOGY DEGREE PROGRAM (130 HOURS)

**First Year**

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<tr>
<th>Course Code</th>
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<tr>
<td>Biol 106 [B] (GER)</td>
<td>General Zoology</td>
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<tr>
<td>Chem 105 [P] (GER)</td>
<td>General Chemistry</td>
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<tr>
<td>Math 107</td>
<td>General Mathematics</td>
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**Second Term**

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<th>Hours</th>
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</thead>
<tbody>
<tr>
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<td>General Botany</td>
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</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>General Education</td>
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<tr>
<td>Math 107</td>
<td>General Mathematics</td>
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**Third Year**

**First Term**

<table>
<thead>
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<td>Chem 345</td>
<td>General Chemistry</td>
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<tr>
<td>Phys 101 [P] (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or</td>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td>Biol 372</td>
<td>General Biology</td>
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<tr>
<td>CropS 101</td>
<td>General Crop Science</td>
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**Fourth Year**

**First Term**

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<td>Entom 340</td>
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<td>Intercultural [I,G,K] (GER)</td>
<td>Intercultural Education</td>
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<tr>
<td>MBioS 301</td>
<td>Microbiology</td>
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<tr>
<td>PI P 429</td>
<td>Plant Pathology</td>
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**Second Term**

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<tbody>
<tr>
<td>Ag Elective</td>
<td>Agriculture Electives</td>
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</table>

**Plant Pathology Courses**

**PI P**

- **150 [Q]** Molds, Mildews, Mushrooms: The Fifth Kingdom A mycocentric approach to natural and anthropological history including the diverse niches occupied by molds, mildews and mushrooms.
- **331 Forest Pathology** 2 (0-6) Rec Biol 107. Parasitic and nonparasitic diseases of forest and shade trees; life histories of fungi as related to diseases.
- **403 Advance Cropping Systems** 3 Same as CropS 403. Credit not granted for both PI P 403 and 503.
- **421 General Mycology** 4 (2-6) Rec Biol 107 or 120. The structure, life histories, classification, and economic importance of the fungi. Credit not granted for both PI P 421 and 521. Cooperative course taught by WSU, open to UI students (PlSc 421).
- **429 General Plant Pathology** 3 (2-3) Rec Biol 107 or 120. Classification, symptoms, causes, epidemiology, and control of plant diseases. Credit not granted for both PI P 429 and 529.

**Special Topics: Study Abroad**

- **490 Special Topics** V 1-15 May be repeated for credit. S, F grading.
- **499 Special Problems** V 1-4 May be repeated for credit. S, F grading.

**Advance Cropping Systems** 3 Graduate-level counterpart of PI P 403; additional requirements. Credit not granted for both PI P 403 and 503.

**Viruses and Virus Diseases of Plants** 4 (3-3) Prereq course in biochemistry or advanced genetics. Nature of plant viruses, vector-virus relationships and virus diseases of plants. Cooperative course taught jointly by WSU and UI (PlSc 511).

**Nematodes and Nematode Diseases of Plants** 2 (1-3) Prereq PI P 429. Anatomy, identity, and diseases caused by nematodes; techniques and control.

**Phytophthora** 4 (3-3) Prereq MBioS 302, 303. Isolation and characterization of bacteria having a saprophytic, symbiotic or pathogenic association with plants, molecular structure, function, and genetics. Cooperative course taught by WSU, open UI students (PlSc 514).

**Seminar** 1 May be repeated for credit.

**General Mycology** 4 (2-6) Graduate-level counterpart of PI P 421; additional requirements. Credit not granted for both PI P 421 and 521.
Field Plant Pathology and Mycology

1 (0-3) or 2 (0-6) May be repeated for credit; cumulative maximum 4 hours. Rec plant pathology and/or mycology course; by interview only. Field trips, forays, and demonstrations dealing with various aspects of plant pathology and mycology.

Advanced Fungal Biology

4 (2-4) Prereq BI P 421, 521 and graduate standing. Advanced topics in fungal biology, ecology, systematics, evolution and coevolution via discussions of literature and special laboratory projects. Cooperative course taught by WSU, open to UI students.

General Plant Pathology

3 (2-3) Graduate-level counterpart of PI P 429; additional requirements. Credit not granted for both PI P 429 and 529.

Fungal Genetics

4 (3-3) Prereq MBioS 301. Classical and molecular approaches to genetic analyses in fungi.

Molecular Genetics of Plant and Pathogen Interactions

2 Prereq MBioS 301, 303. Genetic and molecular biological aspects of host-pathogen interactions. Cooperative course taught by WSU, open to UI students (PIsc 535).

Epidemiology and Management of Plant Diseases

3 Prereq PI P 429 or 529. Principles of plant disease epidemiology, control and ecology of pathogens. Cooperative course taught by WSU, open to UI students (PIsc 506).

Special Projects or Independent Study

Variable credit. S, F grading.

Master’s Research, Thesis, and/or Examination

Variable credit. S, F grading.

Doctoral Research, Dissertation, and/or Examination

Variable credit. S, F grading.

Department of Political Science

www.libarts.wsu.edu/polisci
Johnson Twr 801
509-335-2544

Associate Professor and Department Chair, S. Stehr; Professors, C. Clayton, T. Cook, M. Cottam, L. DeLaup, N. Lovrich, O. Marenin, D. Nice, B. Vila; Associate Professors, A. Appleton, D. Brody, F. Lutze, A. Mazur, T. Pratt (Criminal Justice Director), T. Preston, E. Weber; Assistant Professors, N. Fearn, M. Pickerill, T. Ridout; Instructor, M. Erp.

Courses in political science are offered in political institutions (presidency, congress, the courts, political parties, mass media), public policy formation and evaluation, public law, civil liberties, international relations (foreign policy, strategic policy, conflict resolution), comparative government (area studies, post-industrial societies, cross-national comparisons), political philosophy, and methodology.

The department offers courses of study leading to the degrees of Bachelor of Arts in Political Science, Master of Arts in Political Science, and Doctor of Philosophy.

The department is the locus of the Criminal Justice Program, which offers courses of study leading to the Bachelor of Arts in Criminal Justice and the Master of Arts in Criminal Justice. For details, see the criminal justice section of this catalog.

The undergraduate programs in the Department of Political Science are designed to prepare students to be more thoughtful consumers and producers of information related to political phenomenon in the United States and in other nations. More specifically, the department’s programs aim to: (1) develop the ability to think critically about social and political values; (2) produce graduates with an understanding of the importance of a global perspective on political issues; (3) understand the fundamental theories and frameworks currently used to explain a wide range of political behaviors; and (4) develop and cultivate the ability to write, read, and think critically and effectively.

Prelaw Studies

No specific major is required to be eligible for law school. The department’s Prelaw Advising Center assists all students interested in law school regardless of their intended major.

Through its prelaw curriculum, the department offers a selection of courses designed to prepare students adequately for law school and eventual careers in law. This curriculum reflects recommendations of the Association of American Law Schools. Students choosing other departmental options are also eligible to attend law school if they meet admission requirements.

Public Service

Government is the nation’s largest employer. Many public officials are political science graduates. Public Service Program, which offers courses of study leading to graduate study in political science. Undergraduates who complete Honors requirements in place of GEN ED courses.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

POLITICAL SCIENCE—GENERAL OPTION

(123 HOURS)

Students wishing to enroll in Pol S 499 must have at least junior standing and consent of the instructor; no more than 3 hours of 499 or 3 hours of 497 may be counted towards the departmental requirements.

First Year

First Term

Arts & Humanities [H,G] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Pol S 101 [S] (GER) 3
Social Sciences [S,K] (GER) 3

Second Term

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Communication Proficiency [C,W] (GER) 3
Intercultural [I,G,K] (GER) 3
Pol S 102 [S] (GER) 3

Second Year

First Term

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Foreign Language, if necessary, or Elective 3 or 4
Math Proficiency [N] (GER) 3
Pol S 103 [S] (GER) 3
Science Elective (GER) 4

Second Term

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Biological Sciences [B] (GER) 4
Foreign Language, if necessary, or Elective 3 or 4
Pol S Electives12 6

Third Year

First Term

300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Pol S Elective [M] 3
Physical [P] Sciences (GER) 4
Pol S Electives 6
Complete Writing Portfolio

Second Term

Hours
300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Pol S Elective [M] 3
Cpt S or Stat Elective 1 3
Engl 201 [W], 301 [W], or 402 [W] (GER) 3
Pol S Elective 3

**Fourth Year**

**First Term**

<table>
<thead>
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<td>Minor Field Elective or Foreign Language 1</td>
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<tr>
<td>Pol S [M]</td>
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<tr>
<td>Pol S 333 or 438</td>
<td>3</td>
</tr>
<tr>
<td>Pol S Comparative Elective 1</td>
<td>3</td>
</tr>
<tr>
<td>Pol S IR Elective 3</td>
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**Second Term**

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<tr>
<th>Course</th>
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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Science [S,K] (GER)</td>
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<tr>
<td>Pol S [M]</td>
<td>3</td>
</tr>
<tr>
<td>Pol S Comparative Elective 1</td>
<td>3</td>
</tr>
<tr>
<td>Pol S IR Elective 3</td>
<td>3</td>
</tr>
<tr>
<td>Minor Field Elective or Foreign Language 2</td>
<td>3 or 4</td>
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**Fourth Year**

**First Term**

<table>
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<tbody>
<tr>
<td>Minor Field Elective</td>
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<tr>
<td>Political Science Comparative Elective (if necessary) 1</td>
<td>3</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<td>Electives</td>
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**Second Term**

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<th>Course</th>
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<tr>
<td>Minor Field Elective 1</td>
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<tr>
<td>Electives</td>
<td>12</td>
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</table>

1 American politics, see department
2 Comparative or International Relations, see department
3 Policy and public administration, see department
4 Recommended

**POLITICAL SCIENCE—GLOBAL POLITICS**

**OPTION (120 HOURS)**  

 bells FYDA

33 hours in Pol S are required, at least 15 of which must be earned at WSU.

Consult advisor on study abroad in junior year.

**First Year**

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>Pol S 101 [S] (GER)</td>
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<td>Science Elective [Q,B,P] (GER)</td>
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**Second Term**

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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biological Science [B] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<td>Pol S 102 [S] (GER)</td>
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**Second Term**

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<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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<td>Physical Science [P] (GER)</td>
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<td>Pol S 103 [S] (GER)</td>
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<td>Pol S Comparative Elective or Minor Field Elective 12</td>
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<tr>
<td>Social Science [S,K] (GER)</td>
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<tr>
<td>Pol S IR Elective 1</td>
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<td>Minor Field Elective</td>
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<tr>
<td>Complete Writing Portfolio</td>
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**POLITICAL SCIENCE—PRELAW OPTION (120 HOURS)**  

 bells FYDA

24 hours in Pol S required. 21 of the 24 required hours of course work must be earned at WSU.

**First Year**

**First Term**

<table>
<thead>
<tr>
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<th>Hours</th>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<td>Pol S 101</td>
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<tr>
<td>Science Elective (GER)</td>
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**Second Term**

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<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Econ 101 [S] or 102 [S] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>Pol S 102</td>
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**Second Year**

**First Term**

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<td>Crm J 101</td>
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<td>Phil 201</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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**Second Term**

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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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</table>

1 Comparative Politics Electives: Pol S 305, 314, 405 [M], 413, 428, 432, 435, 447, 472 [M], 474, 476 (courses cannot be counted for both Comparative Politics and International Relations).
2 May choose from a minor in a Foreign Language or Global Studies.
3 International Relations Electives: 314, 424 [M], 427 [M], 428, 429 (courses cannot be counted for both Comparative Politics and International Relations).

**Minors**

**Political Science**

18 semester hours of political science coursework is required for the minor, half of which must be in 300-400-level courses. See the department for information about requirements for the major. The courses may not be taken pass, fail. Students must successfully complete Pol S 101, 102, and 103. At least 12 semester hours of political science must be earned at Washington State University. Three hours of Pol S 497 or 499 may be applied to the minor. A minimum gpa of 2.0 in the political science courses is required.

**Description of Courses**

**Political Science Courses**

**Pol S**

101 [S] American National Government 3 Introducing to American politics exploring the constitution, political institutions and actors, the policy making process, and various public policies.

102 [S] Introduction to Comparative Politics 3 Nature of the state; fundamental problems of government and politics; ideological and institutional comparison of democracies and dictatorships.

103 [S] International Politics 3 Creation and operation of national, international, and supranational communities; major world problems since 1945.

198 [S] Political Science Honors 3 Open only to students in the Honors College.
<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Prerequisites</th>
<th>Credit Hours</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>206</td>
<td>State and Local Government</td>
<td>Prereq Pol S 101.</td>
<td>3</td>
<td>Institutions, processes, and problems, with special reference to the state of Washington.</td>
</tr>
<tr>
<td>275</td>
<td>Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.</td>
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<td>276</td>
<td>Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.</td>
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<tr>
<td>277</td>
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<tr>
<td>278</td>
<td>Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.</td>
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<tr>
<td>300</td>
<td>The American Constitution 3 Prereq Pol S 101. Constitutional principles as established by the Supreme Court and related political developments.</td>
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<tr>
<td>301</td>
<td>Political Simulations 3 Prereq Pol S 101. Preparation for and participation in political simulations.</td>
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<tr>
<td>305</td>
<td>[S] Gender and Politics 3 Role of gender in political behavior; voting and participation; women as subjects and objects of political systems.</td>
<td></td>
<td>3</td>
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<tr>
<td>314</td>
<td>National States and Global Challenges 3 Comprehensive introduction to the processes of the economic and political integration of the European Union.</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>316</td>
<td>American Public Policy 3 Institutions, processes, and substantive issues of American public policy and policy formation.</td>
<td></td>
<td>3</td>
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</tr>
<tr>
<td>317</td>
<td>Media and Politics 3 Relationship between the media and American political institutions and the public.</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>324</td>
<td>[I] Black Politics 3 Political culture, roles, and strategies of Black people in the United States; impact upon public policy.</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>333</td>
<td>[S] Development of Marxist Thought 3 Marxist theory from the original writing of Marx and Engels to contemporary developments.</td>
<td></td>
<td>3</td>
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<tr>
<td>339</td>
<td>Introduction to Public Administration 3 Prereq Pol S 101. Basic theories of administrative organization, relationships, and behavior.</td>
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<td>3</td>
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<tr>
<td>375</td>
<td>Chicano/Latino Politics 3 Same as CES 359.</td>
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<td>3</td>
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<tr>
<td>381</td>
<td>Crime and Justice in the Movies 3 (2-2) Same as Crm J 381.</td>
<td></td>
<td>3</td>
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<tr>
<td>400</td>
<td>Political Science Issues 3 Prereq Pol S 101. May be repeated for credit; cumulative maximum 6 hours. Current issues in political science. Cooperative course taught by WSU, open to UI students (PolSc 404).</td>
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<tr>
<td>401</td>
<td>Topics—Study Abroad 3</td>
<td></td>
<td>3</td>
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<tr>
<td>402</td>
<td>Civil Liberties 3 Prereq Pol S 101. Origin and development of civil liberties; responsibility of the branches of government and the people for their maintenance.</td>
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<td></td>
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<tr>
<td>404</td>
<td>[M] The Judicial Process 3 Prereq Pol S 101. Relationship of judicial behavior to structure, politics and the behavior of other participants in the judicial process.</td>
<td></td>
<td>3</td>
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<tr>
<td>405</td>
<td>[M] Comparative Criminal Justice Systems 3 Same as Crm J 405.</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>408</td>
<td>Topics—Study Abroad 3</td>
<td></td>
<td>3</td>
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<tr>
<td>410</td>
<td>History of American Indian Sovereignty and Federal Indian Law 3 Same as Hist 410.</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>412</td>
<td>[M] Russian Politics: Past, Problems, and Policies 3 Institutions and political processes of the former Soviet Union.</td>
<td></td>
<td>3</td>
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<tr>
<td>413</td>
<td>Latin American Governments 3 Institutions and political processes of selected Latin American republics.</td>
<td></td>
<td>3</td>
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<tr>
<td>416</td>
<td>Policy Analysis 3 Analysis of public policy formation, evaluation and implementation.</td>
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<tr>
<td>417</td>
<td>Voting and Elections 3 Analysis of voting behavior and elections; turnout, influences on voter choice, congressional and presidential elections, campaign finance, and polling.</td>
<td></td>
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<tr>
<td>418</td>
<td>Human Issues in International Development 3 Human Issues in International Development 3 Same as Anth 418. Cooperative course taught by WSU, open to UI students (PolSc 462).</td>
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<td>3</td>
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<tr>
<td>420</td>
<td>Political Parties and Interest Groups 3 Roles, characteristics, and theories of political parties; organization, behavior, and impact of interest groups.</td>
<td></td>
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</tr>
<tr>
<td>424</td>
<td>[M] US National Security Policy 3 Prereq Pol S 103. Substantive and theoretical research on issues relevant to formulation and requirements of post-Cold War, US national security and defense policy.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>427</td>
<td>United States Foreign Relations 3 Ends and means in foreign policy; organization, management, control, and current policy issues.</td>
<td></td>
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<tr>
<td>428</td>
<td>[T] Issues in Political Psychology 3 Prereq Pol S 101 or Psych 105; completion of one Tier I and three Tier II courses. Introduction to the ways in which psychological factors influence political phenomena.</td>
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<tr>
<td>430</td>
<td>[T] The Politics of Natural Resource and Environmental Policy 3 Prereq completion of one Tier I and three Tier II courses. Issues and problems of natural resource and environmental policy.</td>
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<td>3</td>
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<tr>
<td>432</td>
<td>Comparative Public Policy 3 Processes of public policy formation and outcomes in post-industrial democracies, and how to analyze it in a comparative perspective.</td>
<td></td>
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<tr>
<td>435</td>
<td>Politics of Developing Nations 3 Issues and problems of political development and modernization common among developing nations. Cooperative course taught by WSU, open to UI students (PolS 501).</td>
<td></td>
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<tr>
<td>437</td>
<td>Classical Political Thought 3 The development of political philosophy from the pre-Socratics to Machiavelli.</td>
<td></td>
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<tr>
<td>438</td>
<td>Recent Political Thought 3 The development of political thought since Machiavelli.</td>
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<tr>
<td>442</td>
<td>[M] Leadership Skills for the Public Sector 3 Prereq Pol S 101 or 102; Psych 105 or Soc 101. Leadership, motivation, team-building, group dynamics, interpersonal and group conflict and job design for the public sector.</td>
<td></td>
<td>3</td>
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<tr>
<td>443</td>
<td>Administrative Jurisprudence 3 Study of the origins, nature, and practice of justice and law in public administration.</td>
<td></td>
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<tr>
<td>445</td>
<td>Personal Administration 3 Development of American civil service systems and concepts; problems and techniques involved in selection and management of public employees. Cooperative course taught by WSU, open to UI students (PolSc 445).</td>
<td></td>
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<tr>
<td>446</td>
<td>[M] Public Budgeting 3 The government budget as an instrument of politics, planning and control; organizing for democratic accountability.</td>
<td></td>
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<tr>
<td>447</td>
<td>Comparative Public Administration 3 Public administration systems in Europe, Japan, Socialist and developing countries; origins and development.</td>
<td></td>
<td>3</td>
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</tr>
<tr>
<td>448</td>
<td>Urban Politics and Policy 3 Urban political processes and policies; intergovernmental relationships; impact of urban reform.</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>450</td>
<td>[M] The Legislative Process 3 Role of legislatures in a democratic system; problems of representation; election and tenure of lawmakers; legislative organization and procedures.</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>455</td>
<td>The Presidency 3 Organization and processes of executive institutions at the national level; uses and limits of executive power.</td>
<td></td>
<td>3</td>
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<tr>
<td>456</td>
<td>Political Leadership 3 An analysis of political leadership, including different conceptions of leadership, recruitment, leader-follower relations, tactics, and evaluation of leaders.</td>
<td></td>
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<tr>
<td>460</td>
<td>[M] Politics of the Third World 3 Issues and problems of political development and international relations common among developing nations.</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>472</td>
<td>[M] European Politics 3 Government and politics of postindustrial societies, including West Europe and Japan.</td>
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<td>3</td>
<td></td>
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<tr>
<td>474</td>
<td>[T,M] African Politics 3 Prereq completion of one Tier I and three Tier II courses. Historical, economic, and social factors that shape contemporary African political systems and problems of nation-building.</td>
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<td>3</td>
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<tr>
<td>475</td>
<td>Mao to Deng: The People’s Republic of China, 1949—1989 3 Same as Hist 475.</td>
<td></td>
<td>3</td>
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</tr>
<tr>
<td>476</td>
<td>[M] Revolutionary China: 1800 to Present 3 Same as Hist 476.</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>479</td>
<td>Mainframe and microcomputer applications for political science research; practical application. S, F grading.</td>
<td></td>
<td>3</td>
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</tbody>
</table>
Prelaw Curriculum

Students interested in legal education may prepare for admission to law school from any major in any college at the University. The American Bar Association recommends completing baccalaureate degrees before entering law school, attaining as rich an undergraduate education as possible, and developing skills in reading, writing, critical thinking, oral communication, research, and task management. Admission to law school is based in most cases on a student’s Law School Admissions Test (LSAT) score, grade point average, personal statement, letters of recommendation, quality of the institution where undergraduate work is completed, and difficulty and range of course work. The ABA recommends completing a major, but double majors or minors have no effect on admission. Pre-law students are advised to pursue majors in a discipline that interests them: students are more likely to excel in majors they enjoy, and the process of exploring one subject in greater depth will provide valuable preparation for study of the law. No particular major is recommended and there are no minimum requirements with regard to course work, but the American Bar Association has identified knowledge of certain subjects as important groundwork for law school: history, especially American history; political thought and theory and the American political system; ethics and theories of justice; economics; basic math and finance; human behavior and social interaction; diverse cultures both within and outside the United States; and international and global issues. For best results students should work closely with their major advisors. Several departments at the University offer pre-law curricula: Communication (226 Murrow Hall), History (301 Wilson Hall), Philosophy (316 Bryan Hall), Political Science (801 Johnson Tower), and Sociology (204 Wilson Hall). Additional information can be obtained from Professor J. Mitchell Pickrell (Washington State University, 824 Johnson Tower, Pullman, WA 99164-4880).

Premedical Curriculum

Students interested in veterinary medicine may prepare for admission from any major in the University as long as they meet the minimum requirements for admission. The requirements for admission are listed in this catalog under the College of Veterinary Medicine. Admission to the veterinary program is highly competitive so students are encouraged to choose their major carefully. While there is no baccalaureate degree in pre-veterinary medicine offered, many departments have programs that allow students to prepare for admission to veterinary school and earn a baccalaureate degree simultaneously. See the individual departments for specific plans of study. Preparation for veterinary school requires a minimum of two years of college work; however, only a few exceptional students are accepted with this abbreviated background. A minimum of three years of college or completion of a baccalaureate degree is strongly recommended.

Program in Professional Development, WSU Spokane

www.spokane.wsu.edu/academic/profdev/
Spokane Campus, Administration Annex 509-358-7978

Professor F. Peterson, Associate Professor P. Schimpf, Associate Professor M. Mortz, Assistant Professor D. Stewart, Assistant Professor K. Daratha.

The Program in Professional Development at Washington State University Spokane offers the Bachelor of Arts in Professional Development degree programs that provide career enhancement opportunities and prepares students for the rigorous and demands of a complex workplace. This is an upper division degree-completion program with the junior and senior years completed at the Washington State University Spokane Riverpoint campus. Freshman and sophomore coursework must be completed at another institution or at Washington State University Pullman. Early advising will ease the transfer process.

Bachelor of Arts in Professional Development

This degree provides a liberal arts education with core coursework from the disciplines of human development, sociology, and psychology. Individual student career objectives are met by providing coursework within the following concentrations:

Liberal and Social Studies in Contemporary Life

This concentration prepares students for leadership roles in professional life through a broad-based and well-rounded education. This concentration allows students the opportunity to explore the ideas, concepts and constructs of the social sciences and liberal arts.

Strategic Studies in Life, Work, and Organizations

This concentration equips students with skills, concepts, and techniques that add value to organizations. This concentration allows students the opportunity to develop skills in leadership, marketing, finance, and management.

Certification

Students may apply for certification as soon as all lower-division (freshman and sophomore) requirements are complete. Qualification for certification will be based on overall GPA in those courses.

Transfer Students

An AA degree may be substituted for the Year 1 and Year 2 requirements of the BA Professional Development degree, as long as pre-requisites for upper division courses are satisfied. Early advising for either of these degrees is strongly recommended.
Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

BACHELOR OF ARTS IN PROFESSIONAL DEVELOPMENT
WSU SPOKANE (121 HOURS)

Students complete the first and second years at WSU Pullman and the third and fourth at WSU Spokane.

To prepare for the upper division concentration in Liberal and Social Studies in Contemporary Life students should be grounded in lower division content that cuts across subject matter from human development, sociology, art appreciation and art history, philosophy, and psychology.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>FA 101</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Soc 101 [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Second Term</td>
<td>Hours</td>
</tr>
<tr>
<td>Communication Proficiency [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>HD 101</td>
<td>3</td>
</tr>
<tr>
<td>Psych 105 [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Science [B,P,Q] (GER)</td>
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Second Year

<table>
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<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>HD 205</td>
<td>3</td>
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<tr>
<td>ID 211</td>
<td>3</td>
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<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Phil 260 [H] (GER)</td>
<td>3</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>AMT 220</td>
<td>3</td>
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<tr>
<td>Anth 201</td>
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<tr>
<td>ID 202</td>
<td>3</td>
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<tr>
<td>Soc 270</td>
<td>3</td>
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<tr>
<td>Third Year</td>
<td>Hours</td>
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<tr>
<td>First Term</td>
<td>Hours</td>
</tr>
<tr>
<td>Ed Ad 389</td>
<td>3</td>
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<tr>
<td>HD 320</td>
<td>3</td>
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<tr>
<td>Psych 306</td>
<td>3</td>
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<tr>
<td>Psych/Soc 350</td>
<td>3</td>
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<tr>
<td>Soc 351</td>
<td>3</td>
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<tr>
<td>Completion of Writing Portfolio</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
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<tr>
<td>Phil 360</td>
<td>3</td>
</tr>
<tr>
<td>Soc 343</td>
<td>3</td>
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<tr>
<td>Soc 373</td>
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<tr>
<td>General Elective</td>
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<td>Required Choice Course¹</td>
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Fourth Year

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<td>Ed Ad 440</td>
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<td>HD 409</td>
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<td>HD 412</td>
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<tr>
<td>HD 420</td>
<td>3</td>
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<tr>
<td>Soc 430</td>
<td>3</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
</tr>
<tr>
<td>English 402</td>
<td>3</td>
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<tr>
<td>HD 498 or Soc 495</td>
<td>3</td>
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<tr>
<td>Soc 424</td>
<td>3</td>
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<tr>
<td>Capstone Course [T] (Tier III GER)</td>
<td>3</td>
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<tr>
<td>Required Choice Course¹</td>
<td>3</td>
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</tbody>
</table>

¹ List of Choice Courses (6 credit hours required): Soc 321; Soc 331; Soc 340; Soc 384; Soc 480; RE 305; RE 405; RE 406; RE 407; Engl 355; Arch 425; ID 311/350; ID 411; Fin 323; Mktg 360; MgtOp 301

Department of Psychology

www.wsu.edu/psychology
Johnson Tower 233
509-335-2631


The bachelor's degree program provides for either a major or a minor in psychology. The program for majors is designed for those who wish to study psychology as part of a liberal education; for those who plan to use their training in related vocations such as the professions, governmental organizations, business and industry, and psychological services and for those who are preparing for graduate work in psychology. Course offerings are open to students in other departments who need a background in those aspects of psychology that are related to their respective fields. Also, it is possible to combine a major in psychology with the certificate programs in abnormal child psychology, and helping skills.

The department offers courses of study leading to the degrees of Bachelor of Arts in Psychology, Bachelor of Science in Psychology, Master of Science in Psychology, and Doctor of Philosophy.

Excellent facilities are available for instruction and research in psychology. There are specially designed facilities for research in learning, memory, sensory processes, perception, animal behavior, physiological psychology, social interaction, and behavior modification. Departmental facilities also include the Psychology Clinic, which is a training clinic, and the Student Psychophysiology Lab. In addition, cooperative arrangements with other units of the University and with outside agencies and institutions make it possible for students to gain first-hand experience in research and professional work. The University maintains a comprehensive library of books and journals in psychology and related fields.

Preparation for Graduate Study

Students who contemplate work leading to advanced degrees are urged to confer as early as possible with a psychology faculty mentor in psychology. Graduate programs require a solid background in mathematics, natural sciences, physics, philosophy, and social sciences as well as appropriate preparation in psychology itself.

Graduate Program

The graduate program leads to advanced degrees for qualified students who plan careers as psychologists. The course of study for the Doctor of Philosophy degree may be directed toward either a specialization in clinical or experimental psychology. The graduate training program in clinical psychology at Washington State University is accredited by the American Psychological Association.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

PSYCHOLOGY—BACHELOR OF ARTS (120 HOURS)

The Bachelor of Arts in Psychology requires a minimum of 30 credit hours in Psych, at least 15 hours of which must be in 300-400-level courses. The student must take at least 10 credit hours of psychology in residence at WSU and must maintain at least a C average in Psych courses. Students must have two years of one foreign language in high school or take one year in college of a modern foreign language before graduation. Beyond certain minimum requirements there is flexibility in the degree program, in accordance with the needs of the individual student. A student may certify as a BA major after completion of 24 semester hours and cumulative GPA of 2.0 or better.

For the BA degree in Psychology, the four learning goals are: (1) Students will understand basic
PSYCHOLOGY—BACHELOR OF SCIENCE (120 HOURS)  ⅌ FYDA

The Bachelor of Science in Psychology requires a minimum of 30 credit hours in Psych, at least 15 hours of which must be in 300-400-level courses. The student must take at least 10 credit hours of psychology in residence at WSU and must maintain at least a C average in Psych courses. Students must have two years of one foreign language in high school or take one year in college of a modern foreign language before graduation. Beyond certain minimum requirements there is flexibility in the degree program, in accordance with the needs of the individual student. A student may certify as a BS major after completion of 30 semester hours, Psych 311 with a C- or better, and cumulative GPA of 2.5 or better.

For the BS degree in Psychology, the four learning goals are: (1) Students will understand basic research design and analysis; (2) Students will be able to describe societal influences on individual behavior, and they will display an understanding of the cultural relativism inherent in defining what is normal and abnormal behavior; (3) Students will be able to critically evaluate psychological material published in popular media sources; (4) Students will demonstrate proficiency in the written communication of psychological concepts.

First Year

First Term

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<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>4</td>
<td>Biol 101 [B] and 105 [B] or Biol 102 [B] or higher (GER)</td>
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<tr>
<td>3</td>
<td>Psych 105 [S] (GER) or 198</td>
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<td>3</td>
<td>Engl 101 [W] (GER)</td>
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<td>3</td>
<td>Intercultural [L,G,K] (GER)</td>
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Second Term

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<tr>
<td>3</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Communication Proficiency [C,W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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<td>4</td>
<td>Stat or Math 212</td>
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Third Year

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Fourth Year

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<tr>
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<td>Tier III Humanities or Social Science [T] (GER)</td>
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<td>Track Psychology Elective</td>
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<td>6</td>
<td>300-400 level Electives</td>
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<td>3</td>
<td>Elective</td>
</tr>
<tr>
<td>4</td>
<td>300-400 level Psychology Electives</td>
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<tr>
<td>10-11</td>
<td>Electives</td>
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</tbody>
</table>


Recommended Courses:
One 3 hour course from Psych 445, 497, 498, and 499. Psych electives will be chosen in consultation with advisor.

Numerous electives during the first two years from mathematics, biology, physics, chemistry, literature, history, philosophy, sociology, and anthropology contribute substantially to the study of psychology. Again, consultation with a faculty advisor is recommended prior to selecting either Psych courses or supporting courses in other areas.

Students in the Honors Program and transfer students should ask about modifications in the above schedule for the Psych majors. Students interested in combining a psychology major with the certificate program in Helping Skills or Abnormal Child Psychology should inquire at the Department of Psychology main office, Johnson Tower 233.

Minors

Psychology
The minor in psychology may be certified after the completion of 60 semester hours. It requires 18 credit hours in Psych, of which at least 9 must be taken at WSU and at least 9 must be in graded 300-400-level courses. Psych 105 or 198 is required and a statistics or research methods course is strongly recommended.

Certificates

Abnormal Child Psychology
The certificate in abnormal child psychology requires a minimum of 21 hours. The 9 hour core is: Psych 361, 464, and 465. 12 hours of electives are selected from: H D 300, 301, 302, 482, Soc 362, SHS 371, 478, Psych 412, 444, and 445.

Helping Skills
The certificate in helping skills requires a minimum of 20 hours. The 8 hour core is: Psych 333, 440, and 444. 12 hours of electives are selected from: Psych 220, 230, 265, 321, 324, 363, 390, 412, 445, and 446.


3 Writing in the Major Courses: Psych 312, 328, 401, 440, 473.

1 Please note that if you take only 3 credits of science elective, you will need to take another 1-credit science elective (i.e. Biol 201).
### Description of Courses

#### Psychology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>[S] Introductory Psychology</td>
<td>3 Controversies in psychology; biological, social, and physical influences. Credit not granted for both Psych 105 and 198.</td>
</tr>
<tr>
<td>106</td>
<td>Psychology Applied to Daily Living: Dealing with Friends, Alcohol, and Sex</td>
<td>1 Prereq Psych 105 or c/. Application of psychological procedures to the problems of group living, alcohol use, sexual decision making and related social issues.</td>
</tr>
<tr>
<td>198</td>
<td>Psychology Honors</td>
<td>3 May substitute for Psych 105 as a prerequisite to later courses. Open only to students in the Honors College. Credit not granted for both Psych 105 and 198.</td>
</tr>
<tr>
<td>230</td>
<td>Human Sexuality</td>
<td>3 Prereq Psych 105. Sexuality in personal development; personal, cultural, biological influences on sexual identification and behavior; fertility, reproduction, sexual functioning, sexuality and personality.</td>
</tr>
<tr>
<td>265</td>
<td>Biopsychological Effects of Alcohol and Other Drugs</td>
<td>3 Prereq Biol 102 or 107; Psych 105. Biopsychological effects of the major classes of abused and psychotherapeutic drugs, including alcohol, stimulants, sedatives and hallucinogens.</td>
</tr>
<tr>
<td>275</td>
<td>Special Topics: Study Abroad</td>
<td>V 1-15 May be repeated for credit. S, F grading.</td>
</tr>
<tr>
<td>301</td>
<td>Seminar in Psychology</td>
<td>V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours Psych.</td>
</tr>
<tr>
<td>306</td>
<td>Industrial/Organizational Psychology</td>
<td>3 Prereq Psych 105. Individual and group goals; organizational structure and theory; leadership, design of jobs; personnel selection and training; engineering psychology.</td>
</tr>
<tr>
<td>307</td>
<td>Human Factors</td>
<td>3 Prereq Psych 105 or engineering major. Human limitations and capabilities in architectural and engineering design; system analysis.</td>
</tr>
<tr>
<td>309</td>
<td>Cultural Diversity in Organizations</td>
<td>3 Prereq Psych 105. Psychology applied to cultural diversity in organizations; interpersonal and intergroup relationships; diversity training; EEO legislation and affirmative action.</td>
</tr>
<tr>
<td>310</td>
<td>Pseudoscience and Human Behavior</td>
<td>3 Prereq Psych 105. Evaluation of scientific claims in the behavioral sciences and everyday life.</td>
</tr>
<tr>
<td>311</td>
<td>Elementary Statistics in Psychology</td>
<td>4 Prereq college level math course. Descriptive statistics, probability, and inference; design and interpretation of research.</td>
</tr>
<tr>
<td>312</td>
<td>Experimental Methods in Psychology</td>
<td>4 (3-3) Prereq Psych 105; Psych 311 or statistics course. Designing, conducting, and reporting research in selected areas of experimental psychology.</td>
</tr>
<tr>
<td>316</td>
<td>Applied Research in Psychology</td>
<td>3 (2-3) Prereq Stat 212. Experimental design and statistics; research; problem solving in small group situations.</td>
</tr>
<tr>
<td>320</td>
<td>Health Psychology</td>
<td>3 Prereq Psych 105. Psychological and physiological aspects of stress; health behavior and disease prevention; adjustment to chronic illness.</td>
</tr>
<tr>
<td>321</td>
<td>Introduction to Personality</td>
<td>3 Prereq Psych 105. Theories, concepts, methods, discoveries in psychology of personality.</td>
</tr>
<tr>
<td>324</td>
<td>[S,D] Psychology of Women</td>
<td>3 Prereq Psych 105. Socialization and sex roles of women; a psychological perspective.</td>
</tr>
<tr>
<td>328</td>
<td>[M] Self Control</td>
<td>3 Prereq Psych 105. Analysis of self-control problems; application of behavioral principles to student-conducted projects.</td>
</tr>
<tr>
<td>333</td>
<td>Abnormal Psychology</td>
<td>3 Prereq 6 hours Psych. Problems of abnormality from traditional and evolving points of view; types, therapies, outcomes, preventive techniques.</td>
</tr>
<tr>
<td>350</td>
<td>Social Psychology</td>
<td>3 Prereq Psych 105 or Soc 101. Attitude changes, conformity, interpersonal relations, groups and social influences explored to give a coherent view of social psychology.</td>
</tr>
<tr>
<td>361</td>
<td>Principles of Developmental Psychology</td>
<td>3 Prereq Psych 105. Introduction to biological and psychosocial influences on child development.</td>
</tr>
<tr>
<td>363</td>
<td>Psychology of Aging</td>
<td>3 Prereq Psych 105. Psychological processes of aging; changes in sensory motor, cognitive motivational and personality characteristics; research methodologies for the study of aging.</td>
</tr>
<tr>
<td>372</td>
<td>Introduction to Physiological Psychology</td>
<td>3 Prereq Biol 102 or 107; Psych 105. Functional relationship between nervous system and behavior; integrated organ systems; sensory processes, and investigative procedures. Occasional lab meetings required; see instructor for times.</td>
</tr>
<tr>
<td>384</td>
<td>Sensation and Perception</td>
<td>3 Prereq Psych 105. Perception of size, depth, form, shape; illusions, contrast; historical and modern theories and research; applications and demonstrations.</td>
</tr>
<tr>
<td>401</td>
<td>Historical Development of Psychology</td>
<td>3 Prereq Psych 312. Concepts, methods, theories, trends, and systems.</td>
</tr>
<tr>
<td>403</td>
<td>Cultural Issues in Psychology</td>
<td>Same as CES 403.</td>
</tr>
<tr>
<td>412</td>
<td>Psychological Testing and Measurement</td>
<td>3 Prereq Psych 311. Assessment of behavioral variables in humans; individual differences. Cooperative course taught by WSU, open to UI students (Psych 412).</td>
</tr>
<tr>
<td>440</td>
<td>[M] Clinical/Community Psychology</td>
<td>3 Prereq Psych 333. Professional problems; theory, training, relations with clients, institutions, public.</td>
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</table>

### Undergraduate Practicum

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>445</td>
<td>Undergraduate Practicum</td>
<td>V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours Psych; sophomore standing; by interview only. Supervised experience in local and county agencies; application of psychological principles to paraprofessional counseling. S, F grading.</td>
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</table>

### Behavior Disorders of Children and Adolescents

<table>
<thead>
<tr>
<th>Course Code</th>
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### Neuropsychology of Learning Disorders

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<tr>
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<tbody>
<tr>
<td>465</td>
<td>Neuropsychology of Learning Disorders</td>
<td>3 Prereq Psych 105, 361. Biological and cognitive aspects of learning disorders including etiology, common cognitive deficits, outcome and treatment of cognitive function.</td>
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</tbody>
</table>

### Environmental Psychology

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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>466</td>
<td>Environmental Psychology</td>
<td>3 Prereq Psych 105. Psychological concepts applied to the mixture of positive and negative interactions individuals have with their physical environment.</td>
</tr>
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</table>

### Motivation

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>470</td>
<td>Motivation</td>
<td>3 Prereq Psych 105. Different motivational systems; analysis of environmental and biological factors influencing motivation, with emphasis on human motivation.</td>
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### Advanced Physiological Psychology

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>473</td>
<td>Advanced Physiological Psychology</td>
<td>3 Prereq Psych 372. Neurophysiological, hormonal, and biochemical bases of regulatory behavior; theoretical and applied issues.</td>
</tr>
</tbody>
</table>

### Special Topics: Study Abroad

<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>480</td>
<td>Special Topics: Study Abroad</td>
<td>V 1-15 May be repeated for credit. S, F grading.</td>
</tr>
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</table>

### Cognition and Memory

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>490</td>
<td>Cognition and Memory</td>
<td>3 Prereq Psych 6 hours. Human information processing, memory, and cognition.</td>
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</table>

### Psychology of Language

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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>492</td>
<td>Psychology of Language</td>
<td>3 Prereq Psych 105; completion of one Tier I and three Tier II courses. The cognitive and neuropsychological processes involved in the acquisition and use of language; cross-cultural perspectives on language and thought.</td>
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</table>

### Field Experience in Personnel Psychology

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<thead>
<tr>
<th>Course Code</th>
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<th>Description</th>
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<tbody>
<tr>
<td>495</td>
<td>Field Experience in Personnel Psychology</td>
<td>V 2 (0-6) to 6 (0-18) May be repeated for credit; cumulative maximum 6 hours. MgtOp 450 or Psych 306. Supervised experience in local industries and organizations; application of personnel psychology and resource management principles to work environments. S, F grading.</td>
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</table>

### Cooperative Education Internship

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<thead>
<tr>
<th>Course Code</th>
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<th>Description</th>
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<tbody>
<tr>
<td>496</td>
<td>Cooperative Education Internship</td>
<td>V 2-6 May be repeated for credit; cumulative maximum 12 hours. Off-campus cooperative education internship with business, industry, or government unit coordinated through the Professional Experience Program. S, F grading.</td>
</tr>
</tbody>
</table>

### Instructional Practicum

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>497</td>
<td>Instructional Practicum</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 4 hours. S, F grading.</td>
</tr>
</tbody>
</table>

### Research Participation

<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>498</td>
<td>Research Participation</td>
<td>V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq 9 hours Psych including a lab course; by interview only. Participation in the current research of departmental faculty. S, F grading.</td>
</tr>
</tbody>
</table>

### Special Problems

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>499</td>
<td>Special Problems</td>
<td>V 1-4 May be repeated for credit. S, F grading.</td>
</tr>
</tbody>
</table>

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Department of Psychology
502 Research Design V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 16 hours. Research design, equipment, data collection, data analysis, and report writing. S, F grading.

504 History of Psychology: Theoretical and Scientific Foundations 3 Roots of scientific explanation in psychology traced through various philosophical schools and psychological movements.

505 Teaching Introductory Psychology V 1-3 May be repeated for credit; cumulative maximum 4 hours. Prereq graduate standing. Problems and techniques related to teaching introductory psychology. S, F grading.

506 Current Research in Psychology 1 Current research being conducted by psychology faculty and members of associated departments.

507 Topics in Psychology 3 May be repeated for credit.

508 Special Topics in Psychology V 1-3 May be repeated for credit.

511 Analysis of Variance and Experimental Design 4 Prereq Psych 311. Parametric, non-parametric, repeated-measures, and multivariate ANOVA; planned comparisons; confidence intervals and power analysis; experimental design and variants.

512 Correlation, Regression, and Quasi-Experimental Design 3 Prereq Psych 511. Simple and multiple correlation and regression; time-series analysis; factor analysis; field research and quasi-experimental design.

513 Seminar in Quantitative Methods and Research Design 3 May be repeated for credit. Prereq Psych 512. Advanced topics in specialized quantitative procedures and in design of research in psychology.

514 Psychometrics 3 Prereq Psych 512. Scientific construction of behavioral assessment instruments, including validation and reliability; types of scales and responses; statistical scaling; test theory issues.

515 Multilevel and Synthesized Data 3 Prereq Psych 512. Structural equation modeling, hierarchical linear modeling and meta-analysis and the software used to conduct these analyses.

520 Empirical Approaches to Psychotherapy 3 Major therapy systems, research on process and outcome of therapy.

521 Behavior Modification 3 (2-3) Prereq Psych 390, 520. Learning principles applied to modifying behavior of children and adults in institutions, clinics, and schools.

522 Applied Behavioral Research 3 Research theory and methodology on development of applied programs.

530 Professional, Ethical, and Legal Issues 3 Application of professional, ethical, and legal issues in clinical psychology to such topics as confidentiality, dual-relationships, research, assessment, and intervention.

533 Adult Psychopathology 3 Prereq by interview only. Theoretical and empirical approaches to diagnosis, etiology and treatment of mental disorders. Cooperative course taught by WSU, open to UI students (Psych 575).

534 Clinical Psychopharmacology 3 Prereq Psych 533, 574. Classification, clinical application, and mechanisms of psychotherapeutic drugs used in the treatment of mental disorders.

535 Clinical Assessment and Diagnosis 3 Diagnostic interviewing, conceptualization of clinical problems, case presentations, and treatment planning.

536 Measurement Theory and Personality Assessment 3 Prereq Psych 530, 539; admission to clinical psychology Ph.D program. Psychometric theory, theories of personality, objective and projective methods of assessing personality, development of testing and interpretive skills.

537 Psychology Clinic Assessment Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Prereq Psych 539 or by interview only. Supervised practice in psychological assessment in the Psychology Clinic. S, F grading.

538 Child Therapy Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Prereq 520, 530, 533, 535, 536, 539, 543, or by interview only. Supervised practice in the clinical application of psychology with children and families. S, F grading.

539 Measurement Theory and Intellectual Assessment 3 Prereq by interview only. Psychometric theory, theories of intelligence, methods of appraising intelligence in children and adults, and development of testing and interpretive skills.

541 Marriage and Marital Therapy 3 Prereq Psych 530, 535, graduate standing. Introduction to research on marital relationships, clinical models of marital dysfunction, and methods of intervention with distressed couples.

542 Community Psychology 3 Examination of community and its effects on health and behavior; organization of community-based mental health services.

543 Child Clinical Psychology: Empirical Approaches to Assessment and Therapy 3 Research on developmental psychopathology, child assessment, and child therapy.

544 Medical Psychology: Psychological and Pharmacological Interventions 3 Psychological factors and their influence upon the causes and/or course of medical illnesses as well as relevant clinical interventions. Cooperative course taught by WSU, open to UI students (Psych 544).

545 Psychology Clinic Adult Therapy Practicum 3 (0-9) May be repeated for credit; cumulative maximum 18 hours. Prereq Psych 520, 530, 533, 536, 539, or c/l; by interview only. Supervised practice in the clinical application of psychology with adults in the Psychology Clinic. S, F grading.

546 Counseling Service Practicum V 1-3 May be repeated for credit; cumulative maximum 12 hours. Prereq Psych 545 or c/l. By interview only. Supervised practice in the clinical application of psychology at the WSU Counseling Service. S, F grading.

547 Medical Psychology Practicum 3 Prereq by interview only. Supervised practice in the clinical application of psychology at the WSU Health and Wellness Service. May be repeated for credit; cumulative maximum 18 hours. S, F grading.

548 Clinical Externship V 1-3 Prereq by interview only. Supervised practice in the clinical application of psychology at approved hospitals and medical practices. S, F grading. May be repeated for credit; cumulative maximum 18 hours.

550 Attitudes and Social Cognition 3 Attitude structure, function, and change; social cognition and motivation, and attributions. Cooperative course taught by WSU, open to UI students (Psych 520).

551 Group and Interpersonal Processes 3 Theories and research in interpersonal dynamics; cognitive, learning, equity, and attributional concepts; group performance and interpersonal interaction, social influence, distributive and procedural justice, helping, and attraction.

552 Diversity Issues in Psychology 3 Research, theories, and controversies regarding the role of human diversity in psychotherapy, psychological assessment, and clinical research.

553 Theories of Personality 3 Classical (e.g., psychoanalytic, ego psychology) and contemporary (e.g., object relations social learning, psychological behaviorism) views of personality development.

574 Physiological Psychology 3 May be repeated for credit. Neuroanatomical, neurochemical, and other biological cases of human and animal behavior.

575 Foundations of Neuropsychology 3 Foundations in brain/behavior relationships and neuropathological syndromes; preparation for advanced training in neuropsychological assessment.

576 Neuropsychological Assessment 3 Prereq Psych 574, 575. Brain-behavior relationships in humans and the evaluation of cognitive, behavioral, and emotional changes accompanying a variety of neuropsychiatric syndromes.

577 Behavioral Pharmacology 3 Prereq Psych 574. Survey of drugs which affect brain function with emphasis on animal models and clinical applications.

579 Behavioral Neuroscience 3 Prereq Psych 574. Advanced topics in neurochemistry, neurophysiology, and neuroanatomy.

584 Sensory Bases of Behavior 3 Prereq Psych 384. Sensory and physiological aspects of vision, audition, and other senses.

591 Models of Learning 3 Historical and current theory and research in learning and cognition.
Cognition and Memory 3 Experimental approaches to human information processing, memory, and cognition.

Experimental Analysis of Behavior 3 Operant conditioning in relation to the experimental evidence currently available; examination of research strategies.

Clinical Internship in Psychology V 2-16 May be repeated for credit; cumulative maximum 16 hours. Prereq passing of preliminary exams and completion of course work for PhD. Clinical training in an internship approved by American Psychological Association or by WSU. S, F grading.

Special Projects or Independent Study Variable credit. S, F grading.

Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

Master's Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Sciences

Description of Courses

Science Courses

Sci 101 Careers, Experience, and Opportunities in the Sciences and Mathematics
1 Introduction to careers in the sciences and mathematics; weekly presentations by guest speakers, researchers, and industry personnel.

The Sciences for Honors Students I 1 (3-3) Prereq honors students only. Interdisciplinary approach to science in the modern world developed specifically for students not majoring in the sciences.

The Sciences for Honors Students II 3 Prereq honors students only. Interdisciplinary approach to science in the modern world developed specifically for students not majoring in the sciences.

Department of Sociology

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Wilson 204
509-335-4595

Professor and Department Chair, G. Hooks; Professors, M. Allen, D. Billman, L. Freese, L. Gray, G. Rosa, A. Wharton; Associate Professors, L. Catanzarite, C. Horne, L. McIntyre, C. Musher, T. Rovio; Assistant Professors, J. Beattie, M. Johnson, A. Jorgenson, J. Kme, M. Konty, K. Lloyd, J. Schwartz, N. Van Dyke; Instructors, C. Oakley.

Courses in sociology are designed to provide the student with a better understanding of what makes people and groups of people behave the way they do. Sociology studies the groups people form, the behavior and interaction of these groups, traces their origin and growth, and analyzes the influence of group activities on individual members. Some knowledge of sociology is widely regarded as a useful supplement to the course work in most fields. The course of study for majors is flexible enough to incorporate a variety of individual interests, such as deviance and criminology, the family, social welfare and social policy, and environmental sociology. Majors may select one of eight options for specialized study:

I. General Sociology
II. Social Research and Data Analysis
III. Law and Social Control
IV. Society, Environment, and Technology
V. Personnel and Human Relations
VI. Business and the Economy
VII. The Family as an Institution
VIII. Social Welfare: Social Casework or Community Organization.

The undergraduate sociology major provides excellent preparation for careers in a variety of occupations, including public relations, teaching, positions in government, social agencies, and industries; or as a foundation for careers in professions such as architecture and community planning, counseling, law, medicine, the ministry, politics, or public administration.

The department offers courses of study leading to the degrees of Bachelor of Arts in Sociology, Master of Arts in Sociology, and Doctor of Philosophy.

At the completion of the Bachelor of Arts degree in sociology, students will be able to 1) understand themselves in relationship to society, 2) understand the relationship between society and the physical world, 3) have a depth and breadth of sociological knowledge, 4) apply their sociological knowledge to “real world” situations, 5) reason symbolically and quantitatively, 6) conduct/evaluate empirical research, 7) think critically, 8) communicate effectively orally and in writing, 9) enhance life skills such as civility and cooperation, and 10) respect social diversity.

Sociology Requirements for Options I—VII

A bachelor’s degree in sociology requires a minimum of 31 hours in which students must maintain a C average. Students may choose one of the eight options, depending upon personal interests. All majors (except those selecting the social welfare option) must complete five required core courses in sociology, as well as five required and/or elective courses in their chosen option areas. Soc 366 cannot be counted for sociology credit. In addition to the required courses and recommended electives in sociology, students must earn 24 hours in related fields, half of which must be in 300-400-level courses. Selection of related fields from an approved list of courses in consultation with a faculty adviser makes possible the individualization of a student’s major program according to personal interests and career goals.

Required Core Courses

The following four courses are required of all majors selecting Options I-VII: Soc 101, Soc 320, Soc 321, and Soc 310.

Option I. General Sociology

This track introduces students to the study of society and its effect upon individual behavior. It provides a general background adaptable to a variety of interests and occupational goals. Students may complete their major within this track or begin here and switch to a different track should their interests change. Six additional Soc courses.

Option II. Social Research and Data Analysis

The courses in this track prepare students who wish to take jobs in research and data analysis or who intend to continue their education in graduate school. The track places special emphasis upon the methods used in data collection as well as the foundations for sociological theory and analysis. Students who complete this track will be able to work as research assistants and technicians or pursue graduate work in sociology or any of the related social sciences. Soc 420 is required and five from Soc 340, 343, 350, 361, 421, and 433 are recommended.

Option III. Law and Social Control

This track is designed for students who are interested in research, or other employment in public and private social control institutions. Examples might include community social action programs, correctional counseling, juvenile job programs and other youth programs, and programs aimed at alcoholism and drug abuse.

Sociology courses in this track examine theories, research, and data concerning a variety of social problems and forms of deviant behavior, such as crime, juvenile delinquent gangs, and youth subcultures, suicide, mental health, drug use and abuse, poverty, race and ethnic relations, and societal responses to these problems. Soc 360 is required and five from Soc 340, 361, 362, 364, 365, 424, 442, and 480 are recommended.

Option IV. Society, Environment, and Technology

This track is designed for students interested in the interrelationship between society and the natural and technological environments. Increasingly many social problems, political debates, and public policy issues are tied to concerns about the physical environment. The use of resources, the protection of species and habitats, the application of technologies for production and consumption, and the disposition of material wastes are environmental concerns important to sociology.

The continued rise of environmental concerns has resulted in the passage of many environmental laws and regulations, the establishment of many private and public environmental agencies, and the growth in community and public interest groups. Students completing this track will be prepared for employment in a wide variety of private and public agencies with an environmental mission; for example, local and state departments of ecology, community recycling programs, environmental action groups, consulting firms, and lobbying organizations.

The courses in this option, while focused on the environment and technology, are aimed at a balance between sociological theory, empirical research methods, and substantive investigations.
Two from Soc 331, 415, and 430 are required and four from Soc 331, 332, 364, 415, 424, 430, 433, and 474 are recommended.

**Option V. Personnel and Human Relations**

All kinds of organizations hire people who manage the utilization of human resources from initial recruiting, hiring, training, and development to separation or planning for retirement. These personnel managers help to determine company policies, the design of work situations, and methods of developing more efficient and desirable work environments. They need to understand the operation of large bureaucracies and the impact organizations have on people who work within them. A personnel manager is only one example of a human relations worker who must understand employees’ and employers’ points of view and work to meet the needs of both groups.

Sociological knowledge about people and how they interact in groups as well as how individuals and groups are affected by their social environment is necessary for anyone who works in the general area of human relations. Other important skills needed for this work are the abilities to observe, analyze, evaluate, and change behavior as well as the ability to communicate accurately in writing and speaking.

Soc 350 is required and five from Soc 270, 343, 351, 356, 365, 371, 384, 446, 455, and 480 are recommended.

**Option VI. Business and the Economy**

There are many jobs in the business world that sociology graduates can fill very successfully. They are found in banks, insurance companies, health care organizations, hospitals, commercial recreation, merchandising and sales, real estate, as well as local government.

Individuals who want to work in any of these areas will be interested in the business and economy track in sociology. They will gain essential knowledge about complex organizations and society, professions and occupations, public opinion, social inequality, population trends, and minority cultural groups. In addition to sociological knowledge, effective employees in business need good oral communication skills, an ability to write clearly, analytical and problem solving skills, the ability to relate to other people, and a broad understanding of how people interact in their social environments.

One of Soc 343 or 442 is required and five from Soc 331, 340, 343, 364, 373, 384, 418, 424, 430, 433, 442, 446, 474, and 480 are recommended.

**Option VII. The Family as an Institution**

This track focuses on the family as an institution and the social structure in which families are embedded. The information contained in the course work is designed to provide students with appropriate backgrounds to seek jobs in social service agencies. It also provides a foundation for further study in the areas of family counseling or social work. The recommended sociology courses provide knowledge related to marriage, family dynamics, gender issues, and societal changes and institutions.

Soc 150 and 351 are required and four from Soc 340, 350, 356, 384, and 455 are recommended.

### Schedules of Studies

**Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.**

**SOCILOGY—OPTION I–VII (121 HOURS)**

This is a prototype of one of many ways to complete the sociology degree program in four years. The programs has built-in flexibility, and students should consult their advisors regarding other acceptable course plans.

Students must meet the graduation requirements of the College of Liberal Arts. They are encouraged to make a broad and balanced sampling of GER courses to meet the University’s goal for a general education, as well as to explore or confirm possible major and career interests.

#### First Year

**First Term**

- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math Proficiency [N] (GER) 3
- Social Sciences [S,K] (GER) 3
- Elective 3

**Second Term**

- Arts & Humanities [H,G] (GER) 3
- Communication [C,W] (GER) 3
- GenEd 111 [A] (GER) 3
- Science Elective (GER) 4
- Elective 3

#### Second Year

**First Term**

- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 6
- Biological Sciences [B] (GER) 4
- Intercultural [I,G,K] (GER) 3
- Elective 3

**Second Term**

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Physical Sciences [P] (GER) 3
- Soc 101 [S] (GER) 3
- Soc Elective 3
- Elective 3

#### Third Year

**First Term**

- Related Field Electives 6
- Soc 310 3
- Soc 320 3
- Soc Elective 3
- Complete Writing Portfolio

**Second Term**

- Related Field Electives 6
- Soc 321 4
- Soc Elective 3

#### FYDA

- Fourth Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Term</td>
<td></td>
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<tr>
<td>Related Field Electives</td>
<td>9</td>
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<tr>
<td>Soc Electives</td>
<td>6</td>
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<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Related Field Electives</td>
<td>9</td>
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<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Minors

**Sociology**

The minor in sociology may be certified after completion of 60 semester hours. It requires a minimum of 18 credit hours in sociology, including Soc 101, 320, and at least 9 additional graded hours of 300-400-level courses. Any Soc or S W course may be counted toward the minor (subject to the above provisions) except S W 490 and Soc 366. Only 3 credits of Soc 495 may apply to the minor. A GPA of 2.0 is required for the minor.

### Description of Courses

**Social Welfare and Public Policy Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S W 390</td>
<td>Social Welfare History and Policy 3 Pre-req S W 190. Current social welfare programs; income maintenance, health services, criminal justice, public housing, child welfare; historical development of social welfare programs.</td>
</tr>
<tr>
<td>S W 395</td>
<td>Child Welfare 3 Pre-req S W 190. Social work practice in child welfare; adoption, foster homes, child protection, group homes, day care, children’s institutions, dependency, traditional and non-traditional family.</td>
</tr>
<tr>
<td>S W 396</td>
<td>Social Work with the Aging 3 Pre-req S W 190. The aging process; accessing community resources for the elderly; applying social work methods to the elderly and their family systems. Cooperative course taught by WSU, open to UI students (Soc 396).</td>
</tr>
<tr>
<td>S W 490</td>
<td>[M] Social Work Field Experience 10 or 15 Placement in social agency; knowledge in the helping relationship; decision making in applied settings. S, F grading.</td>
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<tr>
<td>S W 492</td>
<td>Social Work Senior Seminar 1 Practicum preparation; practical advice about social work careers, resume writing, interviewing skills. S, F grading.</td>
</tr>
<tr>
<td>S W 493</td>
<td>[M] Social Work Methods: Individual and Groups 3 Pre-req S W 190. Social work values, ethics; technical aspects of interviewing and working with client systems; communication; group work skills.</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>190</td>
<td>Social Work in Corrections</td>
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<tr>
<td>190</td>
<td>Social Work in Health and Mental Health</td>
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<tr>
<td>250</td>
<td>Special Topics in Sociology: Study Abroad</td>
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<tr>
<td>250</td>
<td>Special Problems</td>
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<tr>
<td>310</td>
<td>Rural Sociology</td>
</tr>
<tr>
<td>320</td>
<td>Introduction to Social Research</td>
</tr>
<tr>
<td>321</td>
<td>Quantitative Techniques in Sociology</td>
</tr>
<tr>
<td>331</td>
<td>Population, Resources, and the Future</td>
</tr>
<tr>
<td>332</td>
<td>Society and Environment</td>
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<tr>
<td>341</td>
<td>Sociology of Religion</td>
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<tr>
<td>343</td>
<td>Sociology of Professions and Occupations</td>
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<td>345</td>
<td>Sociology of Sport</td>
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<td>350</td>
<td>Social Psychology</td>
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<td>351</td>
<td>The Family</td>
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<td>352</td>
<td>Sociology of Emotions</td>
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<tr>
<td>356</td>
<td>Sociology of Aging</td>
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<tr>
<td>361</td>
<td>Criminology</td>
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<tr>
<td>362</td>
<td>Juvenile Delinquency</td>
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<td>363</td>
<td>The Social Organization of Hate Crimes</td>
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<td>364</td>
<td>Law and Society</td>
</tr>
<tr>
<td>367</td>
<td>Juvenile Justice and Corrections</td>
</tr>
<tr>
<td>371</td>
<td>Small Group Analysis</td>
</tr>
<tr>
<td>372</td>
<td>The Sociology of Film</td>
</tr>
<tr>
<td>373</td>
<td>Media, Culture and Society</td>
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<td>375</td>
<td>Aspects of Sustainable Development</td>
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<tr>
<td>391</td>
<td>Special Topics in Sociology</td>
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<tr>
<td>392</td>
<td>Special Topics</td>
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<tr>
<td>393</td>
<td>Special Topics</td>
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<tr>
<td>398</td>
<td>Special Topics in Sociology: Study Abroad</td>
</tr>
<tr>
<td>415</td>
<td>Ecology of Human Societies</td>
</tr>
<tr>
<td>420</td>
<td>Sociological Methods and Techniques</td>
</tr>
<tr>
<td>421</td>
<td>Quantitative Techniques in Sociology II</td>
</tr>
<tr>
<td>430</td>
<td>Society and Technology</td>
</tr>
<tr>
<td>433</td>
<td>Urbanization and Community Organization</td>
</tr>
</tbody>
</table>
442 [T] Political Sociology 3 Prereq completion of one Tier I and three Tier II courses. Sociological analysis of political institutions and power structures; social and cultural basis of political behavior.

446 Medical Sociology 3 Social factors related to health and illness; organization and change in health care; impacts of health care reform, rising costs, and aging.

455 [T] Beliefs, Norms, and Values 3 Prereq completion of one Tier I and three Tier II courses. General survey of theory and research on the common meanings—beliefs, norms, values—constructed by societies and held by individuals.


474 [T] Collective Behavior and Social Movements 3 Prereq completion of one Tier I and three Tier II courses; three 300-400-level Soc or Pol S courses. Processes of collective behavior and social movements in historical and contemporary societies.

480 Sociology of Race Relations 3 Basic understanding of race relations; major sociological concepts and theories regarding minority and majority group relations.

484 [T,D] Lesbian and Gay Studies 3 Same as W St 484.

490 [M] Senior Capstone 3 Prereq senior in sociology. Focused examination of advanced substantive topics in sociology, with opportunities for students to further develop and refine analytic and writing skills.

491 Advanced Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

495 Internship V 1-6 May be repeated for credit; cumulative maximum 6 hours. Prereq social science major; by interview only. Work experience related to undergraduate major and career interests. S, F grading.

498 Research Assistantship 3 Prereq Soc 101; 320; by interview only. Supervised experience in current research by departmental faculty. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

510 Development of Social Theory 3 Examination of the foundations of social theory.

511 Theories of Social Organization 3 Major theories of social organization in historical perspective.

512 Theory Construction and Formalization 3 Testing; formalization of theoretical systems; adaptation of general models to specific problems.

517 Seminar in Contemporary Sociological Theory 3 Recent developments in sociological theory, analysis, application and appraisal of specific theoretical systems.

519 International Development and Human Resources 3 Same as Anth 519.

520 Research Methods in Sociology 3 Methodology of social research at the professional level.

521 Regression Models 3 Prereq Soc 421. Simple and multiple regression, structural equation models, nonlinear applications, applications for discrete dependent variables.

522 Advanced Sociological Methodology 3 May be repeated for credit; cumulative maximum 12 hours. Prereq Soc 521. Scaling theory, sampling theory, experimental design, measurement of association, multivariate analysis, current methods and techniques.

523 Qualitative Methods Practicum 3 Prereq graduate standing. Introduction to qualitative research methods as used in social sciences; epistemological underpinnings and empirical techniques.

524 Sociology and Public Policy 3 Sociological theories used to consider the rationale for public policy; development of tools for policy analysis.

525 Practicum in Survey Research 3 Prereq Soc 520. Practical experience in design and implementation of telephone and mail surveys; participation in all aspects of conducting a survey.

530 Demography 3 Population studies; causes, effects, and measurement of changes in fertility, mortality, and migration; population estimation and projection.

531 Human Ecology 3 Ecosystem context of human life; change viewed ecologically; sociological use and misuse of ecological concepts; issues in theory and research.

532 Environmental Sociology 3 Societal-environmental interactions; impacts of human societies on the physical environment; environmental impacts on human behavior and social organization.

533 Social Impact Assessment 3 Sociology's contribution to environmental impact assessments; methods, contents, and contexts of assessing social impacts of proposed developments. Cooperative course taught by WSU, open to UI students (RRT 504).

534 Energy and Society 3 Energy and societal evolution; energy consumption patterns and quality of life; social impacts of energy shortages and alternative energy systems.

535 Technology and Society 3 Prereq graduate standing. Analysis of sociotechnical systems; effects of technology on society; the social shaping of technologies and their environmental impacts.

536 Special Topics in Environmental Sociology V 1-3 May be repeated for credit; cumulative maximum 9 hours. Special topics in environmental sociology.

542 Theories of Social Stratification 3 Marx, Dahrendorf, Weber, Sorokin, Mills, Pareto; problems of stratification research; social class and social policy.

544 Sociology of Religion 3 Role of religion in social structure, process and change; analysis of religious behavior.

545 Sociology of Community 3 Community stability and change; interaction processes; decision making; societal linkages; effects on well-being.

546 Medical Sociology 3 Social influence on the perceptions of health and illness; construction of health professionals; analysis of the health care system and current policy proposals.

548 Political Sociology 3 Systematic survey of theories and the major research literature in political sociology.

550 Survey of Social Psychology 3 Survey of theories, findings, and methods; self and identities, interaction processes, socialization, emotions, gender relations, group processes and network relations.

553 Social Organization and the Family 3 The family as a social institution; principles of social organization applied to family relationships; macro-level analyses of family structure.

554 Social Psychology of the Family 3 The family as an interacting group; social psychological theories and research applied to family relationships; effects of families on individuals.

555 Sociology of Gender 3 Sociological theory and research on gender and gender inequality in American society.

560 Problems of Deviance Theory 3 Development of theories of deviant behavior; new issues in the study of deviance.

561 Sociology of Law 3 Social factors affecting the development and maintenance of legal structures and the processes of administration of justice.

567 Seminar in Crime and Delinquency 3 Contemporary theory and research in crime and delinquency.

568 Adolescent Deviance 3 Contemporary sociological theory and research in adolescent deviance; action programs; and emerging issues.

572 Socialization 3 Theories of childhood and adult socialization; personality development; symbolic interaction; learning; agents of socialization.

573 Group Processes 3 Sociological research and theory dealing with overt behavior in human interaction settings and its cognitive antecedents.

580 Sociology of Race Relations 3 Analysis of race/ethnic relations; historical and current theoretical explanations of race/ethnic relations.

590 Special Topics in Sociology 3 May be repeated for credit; cumulative maximum 9 hours.
591 The Sociology Profession 1 May be repeated for credit; cumulative maximum 2 hours. Requirements, operations, problems, and possibilities of the sociology profession. S, F grading.

592 Special Topics in Sociology 3 May be repeated for credit; cumulative maximum 9 hours.

593 Special Topics in Sociology V 1-3 May be repeated for credit; cumulative maximum 6 hours. Special topics in sociology.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Speech and Hearing Sciences

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Professor and Department Chair, G. D. Chermak; Professor, C. L. Madison; Associate Professor, J. M. Johnson; Assistant Professors, E. Inglebret, M. Salamat; Clinical Associate Professors, S. Bassett, J. Hasbrouck, C. Jones, L. Power; Clinical Assistant Professors, J. Nye; Adjunct Lecturer, M. Mitchell; Instructors, S. Johnston, M. Ratsch; Professors Emeriti, J. R. Franks, R. E. Potter, M. E. Wingate

The Department of Speech and Hearing Sciences offers courses of study leading to the degrees of Bachelor of Arts in Speech and Hearing Sciences and Master of Arts in Speech and Hearing Sciences. Academic course work and clinical practicum offerings prepare professional personnel to meet the diagnostic and therapy needs of individuals of all ages evidencing a wide variety of speech, language, hearing, and learning problems.

Students are prepared, as speech-language pathologists and audiologists, to provide direct and consultative services in education and medical settings. The course of study emphasizes the physiological, neurological, psychological, and behavioral processes of normal development, the fundamental communication process, and the disorders of communication. The analytic and independent application of course content to the clinical process is encouraged.

The Speech and Hearing Clinic is the Pullman campus training facility for the Speech and Hearing Sciences Department. Speech, language, and audiology services are available through the Speech and Hearing Clinic.

The graduate program, located in the Health Sciences Building at the Riverpoint Campus of Washington State University Spokane, is a cooperative venture, combining faculty and resources of Washington State University and Eastern Washington University to form University Programs in Communication Disorders (UPCD). WSU students enroll through and receive their degrees from Washington State University. The Hearing and Speech Clinic is the Spokane campus training facility for the University Programs in Communication Disorders. Opportunities to work with special populations and in medical settings are readily available in the Spokane area. A capstone internship program provides intensive practical experience in many clinical and educational settings.

The graduate programs in speech-language pathology and audiology are accredited nationally by the Council on Academic Accreditation of the American Speech-Language-Hearing Association and are recognized at the state level by the Washington State Board of Education. State and national clinical and educational certifications require a master’s degree. Bachelor’s-level training in speech and hearing sciences is considered pre-professional.

Learning Outcomes

Learning outcomes for students in Speech & Hearing Sciences reflect the Knowledge and Skills Assessment required by the American Speech-Language-Hearing Association. Students earning a master’s degree with an emphasis in speech-language pathology will be able to demonstrate: 1) knowledge of the basic human communication and swallowing processes; 2) knowledge of the nature of speech, language, hearing, swallowing, and communication disorders and differences; 3) knowledge of the principles and methods of prevention, assessment, and intervention for people with communication and swallowing disorders; 4) skills in evaluation, screening, and prevention procedures; 5) skills in developing, setting, and monitoring appropriate intervention plans with measurable and achievable goals that meet clients’/patients’ needs; implementing intervention plans; and 6) knowledge of the principles and practices of research, including experimental design, statistical methods, and clinical applications.

The Speech and Hearing Sciences student earning a master’s degree with an emphasis in audiology will be able to demonstrate: 1) knowledge of the basic human auditory and vestibular processes; 2) knowledge of the nature of auditory and balance disorders; 3) knowledge of the principles and methods of prevention, identification, assessment, and treatment of auditory and balance disorders; 4) skills in evaluation, screening, and prevention procedures; 5) skill in using instrumentation according to manufacturer’s specifications and recommendations, and determining whether instrumentation is in calibration according to accepted standards; 6) skills in the treatment of individuals with auditory, balance, and related communication disorders; 7) knowledge of assessment, recommending, dispensing, and servicing prosthetic and assistive devices, conducting aural rehabilitation, monitoring and summarizing treatment progress and outcomes, and assessing efficacy of intervention; and 8) knowledge of the principles and practices of research, including experimental design, statistical methods, and clinical applications.

Preparation for Graduate Study

Students with undergraduate majors in child development, the humanities, education, the social and behavioral sciences, as well as those with undergraduate majors in speech and hearing sciences, may be accepted for graduate study in this department. Those with majors in areas other than speech and hearing may be required to take undergraduate prerequisite coursework prior to taking graduate coursework.

Schedules of Studies

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

SPEECH AND HEARING SCIENCES REQUIREMENTS

(121 HOURS) 3 FYDA

At least 45 of the total hours required for the bachelor's degree in this program must be in 300-400-level courses. Successful completion of SHS 475 and 478 fulfills the University requirement of two writing in the major courses, designated [W].

Speech and Hearing Sciences majors are required to satisfactorily complete clinic apprenticeship and clinic practice (SHS 461 and 475) to fulfill degree requirements. Students must present evidence of good character and fitness to participate in clinic. A background investigation conducted by the Washington State Patrol is required to establish good character and fitness requisite to participation in clinic. Majors must also have a tuberculin (TB) skin test prior to participating in clinic apprenticeship and clinic practice. The test is available at Health and Wellness Services.

The Speech and Hearing Sciences Department provides preparation for professional (graduate) training as a speech-language pathologist or audiologist. This course sequence is based on fall enrollment. GERs must be completed in College of Liberal Arts prior to the fifth semester.

First Year

First Term Hours

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biological Sciences [B] (GER) 4
Communication Proficiency [C,W] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3

Second Term Hours

Arts & Humanities [H,G] (GER) 3
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
GenEd 111 [A] (GER) 3
Physical Sciences [P] (GER) 4
Psych 105 [S] (GER)/SHS Elective 3

Second Year

First Term Hours

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Biological [B] or Physical [P] Sciences (GER) 4
SHS 205 3

SHS 250 3
Second Term | Hours |
--- | --- |
Intercultural [I,G,K] (GER) | 3 |
SHS Electives¹ | 7 |
Stat 212 [N] (GER) | 4 |

Third Year

First Term | Hours |
--- | --- |
SHS 201 | 4 |
SHS 371 | 3 |
SHS 372 | 3 |
SHS 378 | 3 |
SHS Elective¹ | 3 |

Second Term | Hours |
--- | --- |
SHS 202 | 4 |
SHS 376 | 4 |
SHS 461 | 2 |
SHS 472 | 3 |
SHS 478 [M] | 3 |

Fourth Year

First Term | Hours |
--- | --- |
SHS 377 | 4 |
SHS 475 [M] | 3 |
SHS 477 | 3 |
SHS 482 | 3 |

Second Term | Hours |
--- | --- |
SHS 471 | 3 |
SHS 473 | 3 |
SHS 475 | 3 |
SHS 479 | 3 |
SHS 480 | 1 |
Tier III Course [T] (GER) | 3 |

Description of Courses

Speech and Hearing Sciences Courses

SHS

118 Accent Reduction for International Students 2 May be repeated for credit; cumulative maximum 4 hours. Instruction in production of the sounds and pattern of general American speech. S, F grading.

201 American Sign Language I 4 Instruction and practical training in sign language for communication with persons who are deaf; deaf culture; beginning conversation skills.

202 American Sign Language II 4 Prereq SHS 201. Sign language systems; vocabulary and skill development in signing and interpreting signs; intermediate conversation skills.

205 Introduction to Speech-Language Pathology and Audiology 3 Overview of deficits of speech, language, and hearing and the role of speech-language pathologist and the audiologist.

250 [S,D] Perspectives on Disability 3 Historical, international, socioeconomic, ethical and personal perspectives on disability; individual choices, societal values, and social responsibility.

371 Development of Speech and Language in Childhood 3 Normal development of the cognitive, linguistic, and pragmatic components of language; introduction to language disorders in children.

372 Hearing and Hearing Disorders 3 Acoustic and psychophysologic aspects of normal hearing and speech perception, and the nature and consequences of hearing disorders.

376 Clinical Phonetics and Articulation Disorder 4 Clinical phonetics and transcription; evaluation and treatment of articulatory disorders; delayed phonological acquisition; dysarthria; and dyspraxia.

377 Anatomy and Physiology of the Speech Mechanism 4 Anatomical and physiological basis of speech production and the pathologies and aberrations that require the services of a communication disorders specialist.

378 Speech and Hearing Sciences 4 Basis of acoustics, acoustic phonetics, psychoacoustics, and speech perception, and instrumentation for measurement of related phenomena.

450 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Study of specialized topics in speech and hearing sciences.

460 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Study of specialized topics in speech and hearing sciences.

461 Clinical Apprenticeship in Speech-Language Pathology and Audiology 2 (1-3) Pre-practicum preparation; observation of and assisting in therapy; state laws; clinical methods.

470 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. By interview only. Study of specialized topics in speech and hearing sciences.

471 Speech-Language Pathology and Audiology in Schools 3 Prereq SHS 461 or c//. Therapy methods and procedures in speech-language pathology and audiology; state/federal laws affecting public school therapy. Co-operative course jointly taught by WSU and UI (EASP 351).


473 Language and Learning Disability 3 Diagnosis and remediation of language and learning disabilities in individuals manifesting disorders in understanding or using spoken/written language.

475 [M] Clinical Practice 3 (0-9) Prereq speech and hearing major, SHS 461, by interview only. Practicum in diagnosis and therapy for speech/language and hearing disorders. May be repeated for credit; cumulative maximum 9 hours.

477 Aural Rehabilitation 3 Prereq SHS 372, 472. Theories and methods in aural rehabilitation for persons who are hearing-impaired; amplification; educational audiology; counseling techniques.

478 [M] Language Impairment: Assessment and Therapy 3 Prereq SHS 371. Assessment and habilitation for the preschool and elementary-age child with language disorders.

479 Neurology for Speech-Language Pathology and Audiology 3 Prereq SHS 377. Neuroanatomical and neurophysiological bases of speech production and audition; neuropathologies of speech, language, and audition.

480 Special Topics in Speech and Hearing Sciences 1 May be repeated for credit; cumulative maximum 9 hours. Study of specialized topics in speech and hearing sciences.

482 Diagnosis and Appraisal of Speech Language Disorders 3 Prereq SHS 376 or c//, 475 or c//. 478. Principles, techniques, and materials involved in exploring the nature of speech and language disorders; planning programs of therapy.

489 [T,D] Disability and Society 3 Prereq completion of one Tier I and three Tier II courses. Perceptions and stereotypes of disability related to theories of marginality and stigmatization; images in films, media, and literature.

501 Research Methods I 2 Philosophy of research, types of literature.

¹ Selected GERs may be used to fulfill SHS electives. Highly recommended electives include: Anth 403, 405, 450; Biol; Cpt S 153; Drama 464; Engl 255, 256, 402; H D 201, 202, 203, 204, 301, 305, 350, 403, 420; HF 263; Mgt 101, 301; Mktg 101, 301; PharP 217; Physics; Psych 311, 312, 321, 333, 361, 363, 372, 384, 390, 412, 464, 490; Soc 356; Sp Ed 301; T & L 330, 333, 335; W St 220; and others in consultation with your advisor.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>503</td>
<td>Research Methods II 2 Experimental and descriptive designs, application of</td>
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<td>statistics, analysis of statistical results.</td>
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<tr>
<td>504</td>
<td>Advanced Anatomy, Neurology and Physiology of the Auditory and Vestibular</td>
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<tr>
<td></td>
<td>Systems 3 Cochlear mechanics; auditory neuroscience; vestibular anatomy and</td>
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<td>neurophysiology; central nervous system interactions.</td>
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<tr>
<td>506</td>
<td>Instrumentation and Basic Electronics 3 Electricity; Ohm’s Law; magnetism;</td>
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<tr>
<td></td>
<td>circuits, impedance matching; transducers; amplifiers; oscillators;</td>
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<tr>
<td></td>
<td>microprocessors; digital signal processing; instrumentation.</td>
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<tr>
<td>508</td>
<td>Pharmacology for Audiology and Other Health and Rehabilitation Sciences 3</td>
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<td></td>
<td>Effects of medications on the peripheral and central auditory system and</td>
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<td></td>
<td>vestibular end organs; ototoxic and vestibulotoxic medications.</td>
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<tr>
<td>540</td>
<td>Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for</td>
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<tr>
<td></td>
<td>credit; cumulative maximum 9 hours. Advanced study of specialized topics in</td>
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<td></td>
<td>speech and hearing sciences.</td>
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<td>542</td>
<td>Infant and Toddler Communication and Language 3 Prereq SHS 371. Typical</td>
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<tr>
<td></td>
<td>development of communication and language in the birth to 5 year-old</td>
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<td></td>
<td>population; impairments affecting development; disorders; assessment;</td>
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<td></td>
<td>intervention.</td>
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<td>543</td>
<td>School Age and Adolescent Language 3 Language development in typically</td>
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<td></td>
<td>developing and language impaired school age and adolescent students;</td>
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<tr>
<td></td>
<td>disorder types; implications for assessment and intervention.</td>
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<tr>
<td>550</td>
<td>Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for</td>
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<tr>
<td></td>
<td>credit; cumulative maximum 9 hours. Study of specialized topics in speech</td>
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<tr>
<td></td>
<td>and hearing sciences.</td>
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<tr>
<td>552</td>
<td>Advanced Audiological Rehabilitation 3 Prereq SHS 477. Practices and research</td>
</tr>
<tr>
<td></td>
<td>in communication strategies training; speech and listening technology;</td>
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<tr>
<td></td>
<td>exploration of current issues.</td>
</tr>
<tr>
<td>553</td>
<td>Counseling in Audiology and Other Health and Rehabilitation Sciences 3</td>
</tr>
<tr>
<td></td>
<td>Counseling theories, processes and skills; effective interviewing.</td>
</tr>
<tr>
<td>554</td>
<td>Advanced Rehabilitative Technology 3 Advanced technologies in aural</td>
</tr>
<tr>
<td></td>
<td>rehabilitation; cochlear implants, vibrotactile aids, implantable hearing</td>
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<tr>
<td></td>
<td>aids, FM systems and tinnitus maskers.</td>
</tr>
<tr>
<td>556</td>
<td>Problems in Stuttering 2 Historical and current literature; problem-solving</td>
</tr>
<tr>
<td></td>
<td>strategies applied to theoretical and clinical problems in stuttering.</td>
</tr>
<tr>
<td>557</td>
<td>Cleft Palate and Craniofacial Disorders 2 Prereq SHS 377. Speech and voice</td>
</tr>
<tr>
<td></td>
<td>problems associated with clefts of the lip and palate.</td>
</tr>
<tr>
<td>560</td>
<td>Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for</td>
</tr>
<tr>
<td></td>
<td>credit; cumulative maximum 9 hours. Advanced study of specialized topics in</td>
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<tr>
<td></td>
<td>speech and hearing sciences.</td>
</tr>
<tr>
<td>562</td>
<td>Motor Speech Disorders 2 Prereq SHS 377. Underlying processes of</td>
</tr>
<tr>
<td></td>
<td>neuromuscular control and feedback; results of damage and disease on</td>
</tr>
<tr>
<td></td>
<td>neuromotor system.</td>
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<tr>
<td>563</td>
<td>Dysphagia 3 Prereq SHS 377. Anatomy and physiology of swallowing;</td>
</tr>
<tr>
<td></td>
<td>evaluation and treatment of swallowing disorders.</td>
</tr>
<tr>
<td>564</td>
<td>Language of Children with Hearing Impairment 3 Prereq SHS 371, 477. Speech</td>
</tr>
<tr>
<td></td>
<td>production and speech perception abilities and language development and</td>
</tr>
<tr>
<td></td>
<td>intervention strategies with the hearing impaired.</td>
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<tr>
<td>565</td>
<td>Augmentative Communication 3 Prereq SHS 478, 482. Augmentative communication</td>
</tr>
<tr>
<td></td>
<td>theory; implementation, training strategies, ongoing adjustments, and</td>
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<tr>
<td></td>
<td>evaluating effectiveness.</td>
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<tr>
<td>566</td>
<td>Off-Campus Clinical Practice V 2 (0-6) to 6 (0-18) May be repeated for</td>
</tr>
<tr>
<td></td>
<td>credit; cumulative maximum 15 hours. Prereq SHS 575; by interview only.</td>
</tr>
<tr>
<td></td>
<td>Advanced clinical practice in off-campus setting; evaluation and treatment</td>
</tr>
<tr>
<td></td>
<td>of speech, language, and hearing disorders.</td>
</tr>
<tr>
<td>567</td>
<td>Issues in Public School Service Delivery 3 Prereq c// in SHS 575. Clinical</td>
</tr>
<tr>
<td></td>
<td>operations, policies, procedures, including legal, ethical, and professional</td>
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<tr>
<td></td>
<td>considerations in the schools.</td>
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<tr>
<td>570</td>
<td>Advanced Internship in Speech-Language Pathology and Audiology V 1-18</td>
</tr>
<tr>
<td></td>
<td>May be repeated for credit. Prereq SHS 471, 566, 575, by interview only.</td>
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<tr>
<td></td>
<td>Advanced practice in diagnosis of and therapy for communication disorders.</td>
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<td></td>
<td>5, F grading.</td>
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<tr>
<td>571</td>
<td>Seminar in Speech Pathology and Audiology 3 May be repeated for credit;</td>
</tr>
<tr>
<td></td>
<td>cumulative maximum 9 hours. Exploration of ideas derived from current</td>
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<tr>
<td></td>
<td>writings and research in speech pathology and audiology.</td>
</tr>
<tr>
<td>572</td>
<td>Hearing Aids I 3 Hearing aid technology, acoustics, electronics and hearing</td>
</tr>
<tr>
<td></td>
<td>aid components, electroacoustic characteristics, earmold technology.</td>
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<tr>
<td>573</td>
<td>Hearing Aids II 3 Prereq SHS 572. Hearing aid evaluation, fitting and</td>
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<tr>
<td></td>
<td>verification, prescriptive and probe microphone measurements, advanced/digital</td>
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<td>technology.</td>
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<tr>
<td>574</td>
<td>Neuropathologies of Language 3 Prereq SHS 377, 478. Advanced study of</td>
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<tr>
<td></td>
<td>language disorders resulting from brain insult after birth; emphasis on</td>
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<td>aphasia and related disorders.</td>
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<tr>
<td>575</td>
<td>Advanced Clinical Practice V 2 (0-6) to 6 (0-18) Prereq by interview only.</td>
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<tr>
<td></td>
<td>Advanced clinical practice in evaluation and treatment of speech,</td>
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<td></td>
<td>language, and hearing disorders. May be repeated for credit; cumulative</td>
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<tr>
<td></td>
<td>maximum 15 hours.</td>
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<tr>
<td>576</td>
<td>Voice Disorders 2 Prereq SHS 377. Functional and organic voice disorders</td>
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<tr>
<td></td>
<td>resulting from various etiologies.</td>
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<tr>
<td>577</td>
<td>Auditory Perception 3 Prereq SHS 472, 477. Psychoacoustic and</td>
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<tr>
<td></td>
<td>psychophysiological bases of auditory perception and relationship to</td>
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<td>central auditory processing disorders.</td>
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<td>578</td>
<td>Professional Issues in Speech-Language Pathology and Audiology 3 May be</td>
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<tr>
<td></td>
<td>repeated for credit; cumulative maximum 9 hours. Contemporary philosophical</td>
</tr>
<tr>
<td></td>
<td>and professional issues in the field of communication science and</td>
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<td>disorders.</td>
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<td>580</td>
<td>Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for</td>
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<tr>
<td></td>
<td>credit; cumulative maximum 9 hours. Advanced study of specialized topics in</td>
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<td>speech and hearing sciences.</td>
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<tr>
<td>582</td>
<td>Clinical Perspectives 3 Theory and clinical experience designed to assist</td>
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<tr>
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<td>students in integrating course work into a clinical perspective.</td>
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<tr>
<td>584</td>
<td>Advanced Audiometric Procedures I 3 Behavioral and physiological principles</td>
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<tr>
<td></td>
<td>and procedures in audiology for the differential diagnosis of auditory</td>
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<td></td>
<td>pathologies.</td>
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<td>585</td>
<td>Hearing Conservation in Industry and Society 3 Prereq SHS 472. Prevention</td>
</tr>
<tr>
<td></td>
<td>and management of noise-induced hearing loss; interactions between noise</td>
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<td>and other ototoxic agents and physical characteristics of the individual.</td>
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<td>586</td>
<td>Pediatric Audiology 3 Prereq SHS 472. Developmental anatomy and physiology</td>
</tr>
<tr>
<td></td>
<td>of the human auditory system; auditory behavior and pathologies in</td>
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<td></td>
<td>children; assessment of infants and children.</td>
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<td>587</td>
<td>Speech-Language Pathology in the Medical Setting 2 Prereq SHS 574; by</td>
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<tr>
<td></td>
<td>interview only. Report writing and charting, collaborating with the</td>
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<td>medical team, establishing prognosis and assessing efficacy of treatment,</td>
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<td>and third-party reimbursement.</td>
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<tr>
<td>588</td>
<td>Phonological Acquisition and Behavior 3 Prereq SHS 376. Current literature</td>
</tr>
<tr>
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<td>in articulatory development and deviancy; diagnosis and therapy.</td>
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<tr>
<td>589</td>
<td>Advanced Audiometric Procedures II 3 Prereq SHS 584. Calibration,</td>
</tr>
<tr>
<td></td>
<td>advanced masking, immittance measures, central auditory processing tests,</td>
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<tr>
<td></td>
<td>speech recognition and tonal testing with special populations, sound-field</td>
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<td>considerations.</td>
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<tr>
<td>590</td>
<td>Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for</td>
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<tr>
<td></td>
<td>credit; cumulative maximum 9 hours. By interview only. Advanced study of</td>
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<td></td>
<td>specialized topics in speech and hearing sciences.</td>
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<tr>
<td>592</td>
<td>Vestibular Evaluation Management 3 Administration, interpretation and</td>
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<td>reporting of vestibular function tests; vestibular rehabilitation.</td>
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<tr>
<td>594</td>
<td>Medical Audiology 3 Otoloudiology and neurologic considerations in</td>
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<tr>
<td></td>
<td>differential diagnosis of auditory and vestibular disorders; audiological</td>
</tr>
<tr>
<td></td>
<td>test battery interpretation; medical intervention options.</td>
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<tr>
<td>596</td>
<td>Electrophysiological Procedures 3 Principles, protocols, and clinical</td>
</tr>
<tr>
<td></td>
<td>applications of auditory evoked potentials and otoacoustic emissions.</td>
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</tbody>
</table>
597 Advanced Electrophysiology of the Auditory System 3 Principles, protocols and clinical applications of advanced evoked potentials and intraoperative monitoring.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Statistics

www.stat.wsu.edu/
Neil 413
509-335-8645


Statistics is the science that deals with the collection, analysis, display, and interpretation of data. Statistics is an interdisciplinary, intercollegiate program that emphasizes the connection of statistics to its many areas of application, as well as the traditional connection to mathematics. The Department offers courses that provide training in the application of statistical methods to the biological, physical, and social sciences, the theory of statistical methods, probability, and statistical computing. Opportunities for individuals trained in statistics abound in business, industry, government, and academia.

Faculty in the Department collaborate with researchers throughout the entire university community on statistical questions that arise in the researcher’s substantive discipline. In addition, faculty carry out active research programs in the discipline of statistics itself. The Department of Statistics currently offers an MS degree with applied and theoretical options and a graduate minor. For specific requirements for these degrees, please contact the Statistics Office.

Preparation for Graduate Study

As preparation for work toward an advanced degree in statistics, a student should have completed one or more courses in statistical methods, mathematics through multivariable calculus and linear algebra, and have at least a three credit computer programming course. Advanced calculus and a second course in linear algebra are also strongly recommended. More important than the above specific courses is an indication of the student’s interest and ability in statistics.

Minors

Statistics

The minor in statistics requires 16 credit hours which must be approved by the Department of Statistics. Only courses which do not have significant overlap in statistical content will be approved as counting toward the minor. At least 9 of the 16 hours must be 300-400-level course work and at least 9 of the 16 hours must be from courses carrying a STAT prefix. Students are encouraged to have the courses they wish to count toward a STAT minor approved by the Program as early in their studies as possible.

Description of Courses

Statistics Courses

Stat

205 [N] Statistical Thinking 3 Prereq Math 101 or 103 or satisfactory math placement score. Scientific explanation; correlations and causality; presenting statistical evidence; graphical and numerical methods; chance and gambling; the bell-shaped distribution.

212 [N] Introduction to Statistical Methods 4 (3-3) Prereq Math 103 or satisfactory math placement test score. Interpretation and application of statistical methods.


370 Introductory Statistics for Engineers 3 Prereq Math 172. Probability axioms, probability models, random variables, expectation, confidence intervals, hypothesis testing, analysis of variance, control charts. Credit not granted for both Stat 360 and 370.


392 SAS Special Topics 1 May be repeated for credit. Prereq Stat 390 or working knowledge of SAS base system. Special features of the SAS system including, but not limited to: SAS/GRAPH, SAS/ASSIST, SAS/IML, SAS/ACCESS, SAS/FSP, advanced macros, complex inputs. S, F grading.

401 Statistics Analysis 3 Prereq Stat 212, 360 or 412. Concepts and methods of statistical research including multiple regression, contingency tables and chi-square, experimental design, analysis of variance, multiple comparisons, and analysis of covariance. Cooperative course taught by UI (Stat 401), open to WSU students.

404 Special Topics V 1-4 Prereq MgmtOp 215, Stat 212, 360, or 412. Special topics in statistics. Cooperative course taught jointly by WSU and UI (Stat 404).

410 Topics in Probability and Statistics 3 Prereq Stat course. Current topics in probability and statistics of mutual interest to faculty and students. Credit not granted for both Stat 410 and 510.

412 Biometry 3 Prereq Stat 212 or equivalent statistics course, or a calculus course, or graduate standing. Principles and methods of statistical analysis as applied to biological experimentation. Cooperative course taught by WSU, open to UI students (Stat 412).

420 Statistical Analysis of Qualitative Data 3 Prereq Math 140, 171, 201, 202, or 220; statistics course. Binomial, Poisson, multinomial distribution; contingency tables, Fisher’s tests, log-linear models; ordinal data; applications in biology, business, psychology, an sociology. Cooperative course taught by WSU, open to UI students (Stat 420).

422 Sampling Methods 2 Prereq Stat 212 or 360. Simple and stratified random sampling; systematic sampling; cluster sampling; double sampling, area sampling. Cooperative course taught jointly by WSU and UI (Stat 422).

423 Statistical Methods for Engineers and Scientists 3 Prereq Math 220; Stat 360 or other statistics course. Hypothesis testing; linear, multilinear, and nonlinear regression; analysis of variance for designed experiments; quality control; statistical computing. Credit not normally granted for both Math 423 and 430.

428 Geostatistics 3 Prereq Stat 360. Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation. Cooperative course taught by UI (Stat 428), open to WSU students.

430 Statistical Methods in Engineering 3 Prereq Math 172, 220. Random variables, sampling, hypothesis testing; linear, multilinear, and nonlinear regression; analysis of variance for designed experiments; statistical computing. Credit not normally granted for both Math 430 and 442.

443 Applied Probability 3 Prereq Math 172, 220. Axioms of probability theory; random variables; expectation; generating function; law of large numbers; central limit theorem; Markov chains. Cooperative course taught jointly by WSU and UI (Math 451).
456 Introduction to Statistical Theory 3 Prereq Stat 430 or 443. Sampling distributions; hypothesis testing and estimation; maximum likelihood; likelihood ratio tests; theory of least squares; nonparametrics. Cooperative course taught jointly by WSU and UI (Math 452). Credit not granted for both Stat 456 and 556.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

504 Special Topics 3 Prereq Stat 456. Cooperative course taught by UI (Stat 504), open to WSU students.

507 Experimental Design 3 Prereq Stat 512. Methods of constructing and analyzing designs for experimental investigations; analysis of designs with unequal subclass numbers; concepts of blocking randomization and replication; confounding in factorial experiments; incomplete block designs; response surface methodology. Cooperative course taught by UI (Stat 507), open to WSU students.

510 Topics in Probability and Statistics 3 Graduate-level counterpart of Stat 410; additional requirements. Credit not granted for both Stat 410 and 510.

511 Statistics for Economics 4 Prereq college calculus and matrix algebra. Same as Ag Ec 510.

512 Analysis of Variance of Designed Experiments 3 (2-2) Prereq Math 360 or Stat 412. Principles of experimental design and analysis and interpretation of data.

513 Advanced Topics in Mathematical and Quantitative Methods V 1-6 Prereq Ag Ec 500, 501, or permission of instructor. Same as Ag Ec 590.

514 Nonparametric Statistics 3 Prereq Stat 512. Conceptual development of basic nonparametric tests including their power and efficiency. Cooperative course taught by UI (Stat 514), open to WSU students.

515 Statistical Packages 3 (2-3) Prereq statistical methods course. No previous computer experience required. Computer techniques for statistical methods; comparison of capabilities of major statistical packages; analysis techniques, graphics, terminal use, data structures, numerical algorithms.

516 Time Series 3 Prereq MgtOp 515 or Stat 443. Same as MgtOp 516. Cooperative course taught by WSU, open to UI students (Stat 539).


519 Applied Multivariate Analysis 3 Prereq MgtOp 591 or Stat 443. Same as MgtOp 519. Cooperative course taught jointly by WSU and UI (Stat 521).

520 Statistical Analysis of Qualitative Data 3 Graduate-level counterpart of Stat 420; additional requirements. Credit not granted for both Stat 420 and 520. Cooperative course taught by WSU, open to UI students (Stat 520).

523 Statistical Methods for Engineers and Scientists 3 Prereq graduate standing. Graduate-level counterpart of Stat 423; additional requirements. Credit not granted for both Stat 423 and 523.

530 Applied Linear Models 3 (2-2) Prereq Math 360 or Stat 412 or equivalent. The design and analysis of experiments by linear models.

531 Econometrics I 3 Same as Econ 511. Cooperative course taught by WSU, open to UI students (Stat 531).

533 Theory of Linear Models 3 Prereq Math 420, Stat 430, or 456. Theoretical basis of linear regression and analysis of variance models; a unified approach based upon the generalized inverse. Cooperative course taught jointly by WSU and UI (Stat 533).

535 Regression Analysis 3 Prereq Stat 430 or 456. Conceptual development of regression; estimation, prediction, tests of hypotheses, variable selection, diagnostics, model validation, correlation, and nonlinear regression. Cooperative course taught jointly by WSU and UI (Stat 510).


542 Applied Stochastic Processes 3 Prereq Stat 430 or 443. Poisson and Markov processes; queuing theory; auto-corvariance; stationarity; power spectra; harmonic analysis; linear mean-square predictions. Cooperative course taught jointly by WSU and UI (Stat 544).

548 Statistical Theory I 3 Prereq Math 273; Stat 430 or 443. Probability spaces, combinatorics, multidimensional random variables, characteristic function, special distributions, limit theorems, stochastic processes, order statistics. Cooperative course taught by WSU, open to UI students (Stat 548).

549 Statistical Theory II 3 Prereq Math 568. Continuation of Math 568. Statistical inferences; estimation and testing hypotheses; regression analysis; sequential analysis and nonparametric methods. Cooperative course taught by WSU, open to UI students (Stat 549).

552 Econometrics II 3 Prereq Ag Ec 501; Econ 511. Same as Ag Ec 512.

555 Statistical Ecology 3 Prereq Stat 443. Ecological stochastic models, population dynamics and genetics, sampling, spatial analysis, discrete/continuous distributions, birth-death processes, diffusion processes. Cooperative course taught by UI (Stat and WLF 555), open to WSU students.

556 Introduction to Statistical Theory 3 Prereq graduate standing. Graduate-level counterpart of Stat 456; additional requirements. Credit not granted for both Stat 456 and 556.

572 Quality Control 3 Prereq Math 360 or 443. Simple quality assurance tools; process monitoring; Shewhart control charts; process characterization and capability; sampling inspection; factorial experiments.

573 Reliability Theory 3 Prereq Stat 430, 443. Statistical concepts; stochastic material strengths and lifetimes; strength versus safety analysis; reliability of coherent systems; maintenance models; complex systems. Cooperative course taught jointly by WSU and UI (Stat 571).


590 Statistical Consulting Practicum 1 or 2 May be repeated for credit; cumulative maximum 6 hours. Prereq three courses in Stat including one methods course or by interview only. Theory and practice of statistical consulting, participation in consulting session. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Department of Teaching and Learning

www.educ.wsu.edu/TL
Cleveland 321
509-335-0925


The Department of Teaching and Learning prepares teachers and other specialists for schools and colleges. Its programs are accredited by the National Council for Accreditation of Teacher Education (NCATE), the Northwest Association of Schools and Colleges, and the State Board of Education. Courses of study are offered for the Bachelor of Arts in Education, Bachelor of Science in Kinesiology, Master of Arts in Education, Master of Education, Master in Teaching, Doctor of Education, Doctor of Philosophy, and for teacher certification. A mission of the Department of Teaching and Learning, through its constructivist model of...
teacher education, is to prepare effective practitioners and scholars who possess the leadership and problem-solving skills necessary to meet the needs of society. The constructivist approach, in contrast to approaches that view the purpose of the teacher as merely transmitting knowledge, requires students to be active and critical participants in the formation of their own intellectual development in a life-long process and to evaluate their performance in terms of its effects upon children, schools, and society. Also, teachers must be liberally educated, well grounded in human growth and development, informed and appreciative of cultural and linguistic diversity, committed to egalitarian ideals, capable of communicating and inspiring an interest in learning, competent in the technical aspects of teaching and managing group learning, and reflective about their own beliefs and actions. WSU's constructivist model provides students with a challenging framework for the study of individual and group experiences, responses, and perceptions. This framework forms the basis for research that informs the application and formulation of educational theory and methodology used to advance professional practice.

The Washington State University annual report on teacher preparation, required under Title II, Section 207(f)(2) of the Higher Education Act, is available upon request. Our Web site is www.educ.wsu.edu/accreditation/title2.html.

Completers of the teacher education program will be able to: 1) set learning targets for K-12 pupils that address state requirements and goals; 2) demonstrate knowledge of pupil and community characteristics; 3) design assessment strategies that measure student learning; 4) design instruction based on research and principles of effective practice; 5) align instruction with the instructional plan and communicate accurate content knowledge; and 6) create and effectively manage a K-12 classroom climate that supports student learning and well-being and engages pupils in learning activities based on research and effective practice.

TEACHER CERTIFICATION

The College of Education prepares individuals to teach elementary education, early childhood education, and various single subjects. The teacher certificate, awarded by the State Superintendent of Public Instruction upon recommendation by Washington State University, designates the subject area in which the certificate holder is qualified to teach. Teacher preparation is offered at the Pullman, Spokane, Tri-Cities, and Vancouver campuses, and selected distant sites, although not all programs are available at each site.

The teacher certificate will be awarded if the following provisions are met:

1. Completion of an undergraduate or postbaccalaureate certificate program must complete at least fifty percent of the professional education core, and, if preparing to teach at the elementary level, fifty percent of the elementary endorsement course work, plus student teaching at WSU. Transfer students and postbaccalaureate applicants should consult with an advisor regarding equivalency and transferability of course work.

2. Opportunities are provided for teacher certificate candidates to gain meaningful experiences by working directly with and observing children in school settings. It is WSU's intent to place only those individuals in P-12 classrooms that are able to demonstrate a positive impact on student learning and to insure that each possesses those characteristics desirable for working with children and young people. The College of Education therefore reserves the right to refuse placement of any student in a field experience, or to terminate an individual's placement if in the professional judgment of the faculty or coordinating field personnel there is cause for concern about the fitness of that individual to work with children in a classroom setting. The student teaching field placement is arranged by the faculty with school districts contracted to provide experiences for WSU students. Students do not make their own student teaching placements. Student teaching must be completed at an approved WSU site in the state of Washington with supervision by an approved WSU provider.

Certificate Renewal, Continuing Certificate, Add-On Endorsements

Information is available upon request from the Certification Coordinator, Teacher Education Student Services, College of Education, PO Box 642114, Pullman, WA 99164-2114, 509-335-4855, sbickel@wsu.edu, or education.wsu.edu/certification.

Professional Certificate

Information is available upon request from the Partnership Center, College of Education, PO Box 642114, Pullman, WA 99164-2114, 509-335-1988, www.educ.wsu.edu/partnerships/cep/profcert.html.

WSU PULLMAN TEACHER CERTIFICATION

Inquiries and requests for program information should be addressed to Teacher Education Student Services, College of Education, PO Box 642114, Pullman WA 99164-2114, 509-335-4855 or beatteacher@wsu.edu.

WSU Pullman seeks to prepare the best possible teachers and therefore seeks highly qualified individuals. Admission to, or continued enrollment in, the teacher preparation program may be denied a candidate on the basis of review by the faculty.

To prepare in elementary education the candidate shall satisfy degree requirements of the Department of Teaching and Learning.

To prepare in early childhood education, the candidate shall satisfy the degree requirements of the Department of Human Development.

To prepare in a single subject, the candidate shall complete the baccalaureate degree/teaching option offered through the subject matter department or in general studies. Single-subject endorsement preparation is available in agriculture, biology, chemistry, earth science, English language arts, world languages (French, German, Russian, Spanish), health and fitness, history, family and consumer sciences education, mathematics, music, physics, science, and social studies.

Add-on endorsements for pre-service teachers are offered in bilingual education, English as a second language, early childhood education, reading, and special education. Other add-on endorsements may become available. Candidates holding single-subject endorsements typically will be assigned to teach in grades 5-12 except those endorsed in ESL, bilingual education, world languages, health and fitness, music, reading, or special education who are authorized to teach P-12. Specific course requirements for endorsements are listed under Single Subject Certificate Programs at the end of this section.

Endorsement requirements are subject to change by the State Board of Education.

WSU Pullman Teacher Certification Admission to Undergraduate and Postbaccalaureate Teacher Preparation:

Applicants who meet the minimum requirements are eligible for consideration, but not assured admission. Enrollment is limited and admission competitive. Admission deadlines are October 31 and March 31 with admission effective the following term. Candidates must complete formal admission procedures and be admitted to teacher preparation prior to taking any professional education course work beyond T & L 300, 301, or 317. The following minimum criteria must be met for consideration for admission:

Minimum Criteria

These criteria are in effect for students entering fall 2005. Revised minimums will become effective for spring 2006 admission. Contact Student Services at 509-335-4855 or beatteacher@wsu.edu for up-to-date information.

1. Completion, within the last three years, of 80 hours of supervised work with children 4 years of age or older in a supervised setting.

2. A passing score on the WEST-B, a statewide basic skills test. For information and registration go to www.west.nesinc.com.

3. Completion of at least 30 semester hours of course work.
4. Minimum WSU cumulative gpa of 2.50 (transfer student gpa is based on WSU course work).
5. Engl 101, plus one from Engl 201, 301, 302, 402, or equivalent composition course work with a minimum grade of C.
6. ComSt 102 or HD 205, or equivalent public speaking course with a minimum grade of C.
7. T & L 300, 301 (and H D 101 for elementary and early childhood majors) graded C or better.
8. Elementary and Early Childhood Majors: Math 251 and two of the four required GER science courses, all graded C or better.
9. Personal goal statement.
10. Interview.

Field Experiences and Student Teaching

Secondary single subject and early childhood majors must make application for student teaching one full academic year prior to the actual student teaching semester. Elementary majors make application for advanced practicum placement one year prior to the advanced practicum semester. Application forms are distributed at an orientation held each semester. An interview is required for placement. The following courses are required field experiences.

T & L 300, Introductory Field Experience (1 credit): This first course in the certificate program engages the student in reflection upon the responsibilities and realities of the teaching profession. The student participates and observes daily activities for one week in a P-12 public or private school classroom.

Elementary majors enroll in T & L 402, Instructional Practicum I (1 credit), T & L 405, Instructional Practicum II (1 credit), and T & L 490, Advanced Practicum (3 credits) concurrently with each of the three sets of blocked courses. T & L 402 and 405 involve participation in school and community settings to apply concepts learned in blocked courses. Practicum placement and activities are arranged by the course instructors. T & L 490 is an extended 4 week full-time practicum in a school setting immediately prior to student teaching.

Placement is arranged by the Department of Teaching and Learning. Secondary majors enroll in T & L 317, Secondary Practicum and Seminar (2 credits) and T & L 400, Advanced Field Experience (2 credits). T & L 317 is a three-week, full-time experience completed in May at the end of the sophomore year in a public or private school in the student’s home community. T & L 400 is a 12-week, 6 hrs/week experience in local schools arranged by the Department of Teaching and Learning during the semester prior to student teaching. All practicums involve observation, reflection, and practice in classrooms.

T & L 415, HD 407, Ag Ed 407, Mus 497 Student Teaching (16 credits). A semester of full-time teaching in a public school. Prior to student teaching the certificate candidate will: interview; make application and pay certification fees; satisfactorily complete all course work for the degree and teacher certificate; and receive fingerprinting clearance from the Washington State Patrol, the FBI, and the Office of Professional Practices. Student teaching must be completed at an approved WSU site in the state of Washington or internationally with supervision by an approved WSU provider.

Master In Teaching (MIT)

A full-time, 15-month field-based program leading to elementary certification and a master’s degree. Applicants must have a bachelor’s degree from an accredited institution with a minimum 3.0 gpa in the last 60 semester hours of graded course work. Applications must be submitted by December 1 for the program beginning the following May. Information about minimum admission requirements may be obtained from the College of Education Office of Graduate Studies 509-335-9195 or gradstudies@wsu.edu or www.educ.wsu.edu/hl.

Course of Study (51 hrs): Ed Ad 506, EdPsy 503, 504, Kin 586, SpEd 520, T & L 502, 505, 521, 525, 540, 552, 556, 564, 572, 593, 594, 595, 600, and 702.

Master of Education with Secondary Certification

The EdM with certification is a cohort-based program. New cohorts begin in June in odd-numbered years. The next cohort will begin in 2007. All applicants must meet subject matter endorsement requirements. Content deficiencies will be determined through a transcript evaluation, which is required prior to application to the program. A bachelor’s degree from an accredited institution, a minimum 3.0 gpa in the last 60 semester hours of graded course work, and a passing score on the state-wide basic skills test and on the state-wide content test are required for consideration for admission. Application deadline is December 1. For course work requirements and program of study, contact the Graduate Office at 509-335-9195 or gradstudies@wsu.edu.

WSU TRICITIES TEACHER CERTIFICATION

Inquiries and requests for application materials should be addressed to WSU Tri-Cities, Department of Teaching and Learning, 2710 University Drive, Richland WA 99352-1671, 509-372-7366, www.educ.wsu.edu/TL/tricity.htm.

WSU Tri-Cities seeks to prepare the best possible teachers and therefore seeks highly qualified individuals for admission to the Bachelor of Arts, MIT, and secondary certification programs. Admission to, or continued enrollment in, a teacher preparation program may be denied a candidate on the basis of review by the faculty. Field experiences with accompanying seminars allow the intern-cooperating partners to engage in ongoing dialogue with University field personnel throughout the year and are coordinated with academic work.

Bachelor of Arts in Education

This Teacher Preparation Program culminates in a bachelor’s degree with elementary certification. The program is designed for students who have a direct transfer Associate of Arts degree or who have completed 60 semester hours of study and who have also completed the required program prerequisites. Students can obtain a list of the prerequisites by contacting the Education Department at 360-546-9075. Students must be admitted to both WSU and the Teacher Preparation Program before beginning education classes. Students are admitted and begin classes only during the summer session.

Master in Teaching (MIT)

A full-time, 15-month field-based program leading to elementary certification and a master’s degree. Applicants must have a bachelor’s degree from an accredited institution with a minimum 3.0 gpa in the last 60 semester hours of graded course work, and submit the MIT application portfolio which is available from the WSU Vancouver Office of Admissions. Applications are available in the summer and must be submitted by December 1 for the program beginning the following May.
Secondary Specific Subject Certification

Candidates may choose postbaccalaureate teacher certification only or a master's degree with certification in the areas of biology, English language arts, history, or social studies. All applicants must meet subject matter endorsement requirements in one of the four content areas. Content deficiencies will be determined through a transcript evaluation which is required prior to application to the program. In order to have transcripts evaluated, forward to the above address official transcripts in sealed envelopes with a cover letter requesting an evaluation for a specific content area. Students may begin the program fall, spring, or summer and should complete the University and departmental applications at least two months prior to the semester in which they wish to enroll. A bachelor's degree from an accredited institution is required. Candidates for the master's degree with certification must have a minimum 3.0 gpa in the last 60 semester hours of graded coursework; those seeking certification only must have a 2.5 minimum cumulative gpa. All applicants must have a passing score on the state wide basic skills and important health and fitness concepts and the contributions they make to a healthy lifestyle.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>ComSt 102 [C] or H D 205 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H D 101 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Math prereq, if necessary, or Elective</td>
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Second Term

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 251</td>
</tr>
<tr>
<td>Mus 153 [H] (GER), if necessary</td>
</tr>
<tr>
<td>Psych 105 [S] (GER)</td>
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<tr>
<td>Science Elective [B,P,Q] (GER)</td>
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<td>T &amp; L 300</td>
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Second Year

<table>
<thead>
<tr>
<th>First Term</th>
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<tbody>
<tr>
<td>Am St 216 [S,D] or Hist 150 [S,D] (GER)</td>
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</tr>
<tr>
<td>Engl 201 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 301</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 306 [M]</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 307</td>
<td>2</td>
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<tr>
<td>T &amp; L 320</td>
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<tr>
<td>T &amp; L 402</td>
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Third Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Mus 388</td>
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<tr>
<td>Science Elective [B,P,Q]</td>
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</tr>
<tr>
<td>T &amp; L 352</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 371</td>
<td>3</td>
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<td>T &amp; L 385</td>
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<tr>
<td>T &amp; L 405</td>
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Second Term

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
</tr>
<tr>
<td>T &amp; L 390</td>
</tr>
<tr>
<td>T &amp; L 483</td>
</tr>
<tr>
<td>Tier III Course [T] (GER) (Am St 473 recommended)</td>
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<tr>
<td>Elective</td>
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Fourth Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EdPsy 401</td>
<td>2</td>
</tr>
<tr>
<td>Sp Ed 420/421</td>
<td>2 or 3</td>
</tr>
<tr>
<td>T &amp; L 310 [M]</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 403</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 413</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 445</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 490</td>
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Second Term

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>T &amp; L 415</td>
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</table>

1 Special Education endorsement requires Sp Ed 421.

Master of Education

WSU Vancouver also offers a Master of Education (EdM) degree with endorsement programs in ESL, reading, and special education for educators who already have a teaching certificate.

Elementary Honors Certification

Candidates for the undergraduate elementary education teacher certificate program will satisfy degree requirements of the Department of Teaching and Learning. The degree will be the Bachelor of Arts. The student should include the following course work within GER selections to satisfy prerequisite, degree, and admission to teacher preparation requirements. This course schedule does not include an add-on endorsement.

During the freshman year, students must qualify to enroll in Math 251, pass the Music 388 competency exam or take Music 153, and begin the University Writing Portfolio, as students must receive a pass before taking T & L 306.

Health and Fitness Teacher Certificate (BS Kinesiology) (135 Hours)

This major program prepares individuals to teach physical education, health, and fitness at the elementary and/or secondary levels. At all levels of instruction, individuals will acquire knowledge and skills necessary to maintain an active life involving movement, physical fitness, and proper nutrition. Students will participate in activities that are designed to help them understand and value important health and fitness concepts and the contributions they make to a healthy lifestyle.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biol 102 [B] or 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>MvSt 199</td>
<td>3</td>
</tr>
<tr>
<td>PEAC 112</td>
<td>3</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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Second Year

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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
</tr>
<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
</tr>
<tr>
<td>ComSt 102 [C] (GER)</td>
</tr>
<tr>
<td>MvSt 264</td>
</tr>
<tr>
<td>PEAC Elective</td>
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<tr>
<td>T &amp; L 300</td>
</tr>
<tr>
<td>Certify in Major</td>
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Second Term

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Ath T 311</td>
</tr>
<tr>
<td>FSHN 130 [B] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>PEAC Elective</td>
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<tr>
<td>Psych 230</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Third Year

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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Biol 251</td>
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<tr>
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<tr>
<td>MvSt 481</td>
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<tr>
<td>T &amp; L 302</td>
</tr>
<tr>
<td>T &amp; L 303</td>
</tr>
<tr>
<td>T &amp; L 317</td>
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Second Term

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<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>MvSt 483</td>
</tr>
<tr>
<td>MvSt 362</td>
</tr>
<tr>
<td>MvSt 461</td>
</tr>
<tr>
<td>PEAC Elective</td>
</tr>
<tr>
<td>T &amp; L 478</td>
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Fourth Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biol 481</td>
<td>3</td>
</tr>
<tr>
<td>HF 484</td>
<td>3</td>
</tr>
</tbody>
</table>
Department of Teaching and Learning

SPECIFIC SUBJECT TEACHER CERTIFICATE

Candidates for specific subject certificates shall declare a major with the subject-matter department and meet the GER and degree requirements of that department. Students completing subject-specific endorsements will follow the Secondary Professional Education Core: Psycho 105, EdPsy 402, T&L 300, 301, 302, 303, 317, 328, 400, 404, 415, 446, and 478 unless admitted to an EdM certificate program.

In addition to meeting requirements of the degree-granting department, the student must meet admission requirements and make formal application to the teacher preparation program prior to enrolling in any professional education courses beyond T & L 300, 301, and 317. It is recommended that candidates begin professional education courses in the sophomore or junior year to meet sequencing requirements. Students should include the following courses within GER selections to fulfill prerequisite admission to the teacher preparation program requirements: ComSt 102; Engl 198 and 199 or Engl 101 plus Eng 201, 301, 302, or 402; Psych 105.

First Year

First Term Hours
Eng 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Psych 105 [S] (GER) 3
Science Elective [B,P,Q] (GER) 3 or 4

Second Term Hours
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 3
ComSt 102 [C] (GER) 3
Endorsement 2
GenEd 111 [A] (GER) 3

Second Year

First Term Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Endorsement 2
Eng 201 [W], 301 [W], or 302 [W] 3
Physical Sciences [P] (GER) 3
T & L 300 1
Certify in Major

Second Term Hours
Endorsement 2
Intercultural [L,G,K] (GER) 3
T & L 301 3

Certify Major
Certify In Teaching & Learning
Three-Week Field Experience (317)

Third Year

First Term Hours
Endorsement 2
T & L 302 2
T & L 303 2
T & L 317 2
Complete Writing Portfolio

Second Term Hours
Endorsement 2
T & L 328 2
T & L 478 2

Fourth Year

First Term Hours
Endorsement 2
T & L 404 2
T & L 446 2

Second Term Hours
EdPsy 402 2
T & L 400 2
Tier III Course [T] (GER) 3
Take WEST-E Praxis II content test

Fifth Year

First Term Hours
Endorsement or T & L 415 3

1 Students may substitute 3 credits of Biol and 4 credits of Phys 3.
2 Credit hours needed for the endorsement are from 30-74, depending on the major.

Agricultural Education

(60 hours): A S 101; Ag Ec 340 or 350; Ag Ed 342, 407, 440, 442, 471; AgTM 201, 402; CropS 101; 3 hrs. 300-400-level CropS elective; Hort 201, 3 hrs Hort elective; Soils 201, plus 17 additional credits in technical agriculture selected with adviser approval. 20 credits in technical agriculture must be upper division. A valid first aid card is required for vocational certification.

Biology

(68-70 hours): Biol 106, 107, 301, 372, 405, 430, 499 (1-3 cr); Chem 105, 106, 345; one from Hist 381, 382, 483, MBioS 320, Soc 430, or UH 410; Math 140 or 171; MBioS 303, 302, 401, or 360 plus Biol 452; Phys 101, 102; 10 hours approved biological sciences electives.

Chemistry

(63-65 hours): Biol 106, 107; Chem 105 or 115, 106 or 116, 220, 222, 340, 341, 342, 499 (1-3 cr); Hist 381, 382, 483, Soc 430, or UH 410; Math 140 or 171; MBioS 303, 304; Ph S 430; Phys 101, 102, or 201, 202. Additional 9 hours 300-400-level Chem (Chem 331, 333 suggested.).

Early Childhood Education

(37 hours): H D 201; 202 or 101; 204, 302, 341, 342, 410, 446, 449, 482, Sp Ed 409, plus required elementary education endorsement (61 hours): T & L 300, 390, 483, 415, Mus 388, Math 251, 252, Hist 150 or Am St 216; Block I T & L 321, Ed Psy 401, T & L 445, 307, 402; Block II T & L 371, 310, 322, 403, 405; Block III 413, Sp Ed 420/1, T & L 352, 385, 490.

Earth Science

(64-66 hours): Geol 101 or 102 (102 preferred), 206, 210, 315, 340, 350, 499 (1-3 cr); Math 140 or 171; Phys 101, 102; Chem 105, 106; Biol 106; Astr 345; ES/RP 174; Hist 381, 382, 483, Soc 430 or UH 410; Ph S 430; 6 hours 300-400-level geology elective, geomorphology or oceanography recommended.

English Language Arts

(46 hours): Foundation Courses: One from Hum 101, 103, 198, 302, 304, 355, 350, or 410; Engl 302; One from Engl 108, 199, 209, or 210. British Literature: Engl 305 or 306; 387 or 388; one from 383, 384, 385, or 386. American Literature: Engl 380 or 381; one from Engl 311, 314, 321, 322, 341, 345, or 346. Professional Courses: Engl 300, 323, 324, 325, 326; one from Engl 251, 351, 352, 353, 492, 493, 494, or 495. 6 hours electives in Engl or Hum selected with advisor approval.

Family and Consumer Sciences

(59 hours): Ag Ed 440; two from AmT 215, 216, 417; FSHN 120, 130, H D 201, 202, 203, 204, 302, 320, 350, 406, 407, 409, 410, 479, 480.

World Languages

French/German/Spanish


Russian

(40 hours): Rus 204, 306, 307, 308[M], 361; one from For L 101, 110, 120, 130, 220; one from Rus 120, 121, 131; one from Rus 410 or 430; three from Econ 416, 416, Rus/Hist 462, 463[M], 465, Pol S 333, 412; both for L 340 and 441.

Health and Fitness

See B.S. in Kinesiology program of study in previous section.

History

(48 hours): Econ 101 or 102; Pol S 101; Hist 101, 102, 110, 111, 300, 422, 469, 480; one from Hist 230, 231, 270, 272, 273, 275; one from CES 101, 111, 131, 151, 171, Hist 150 or W St 200; 12 hours 300-400-level Hist electives which must include two global/non-western courses.

Mathematics

(33 hours): Cpt S 153, Math 171, 172, 220, 273, 303, 315, 330, 360, 398; 420 or 421; 3-hours upper division math elective; Phys 201.

Music

Each endorsement requires the passing of a piano proficiency examination, an upper-division exam, a solo half-recital, a 2.5 gpa, and a grade of C or better.
489, 490, 491, 493, 494, 497. Performance Studies: 14 hours of which 2 hours must be at the 400-level. Performing Groups: 7 hours, minimum of 1 hour during each of seven semesters, to include at least one semester of Mus 435 for instrumentalists and Mus 428 for vocalists. Include a minimum of 2 hours in choral and 2 hours in instrumental ensemble. Total performance experience (performance studies and performing groups) must include a minimum of 4 hours in choral/vocal music and 4 hours in instrumental music.

Choral/General (67 hours): Mus 161, 163, 251, 252, 253, 254, 351, 352, 353, 354, 360, 361; 453 or 455; 480, 481, 483, 488, 489, 490, 491, 497. Performance Studies: 14 hours of which 2 hours must be at the 400 level. Performing Groups: 7 hours, minimum of 1 hour during each of seven semesters, to include at least 1 hour of Mus 428. Minimum of 4 hours of choral ensemble experience.

Instrumental/General (69 hours): Mus 161, 163, 251, 252, 253, 254, 351, 352, 353, 354, 360, 361; 453 or 455; 480, 481, 482, 487, 490, 491, 493, 494, 497. Performance Studies: 14 hours minimum of which 2 hours must be at the 400 level. Performing Groups: 7 hours, minimum of 1 hour during each of seven semesters, to include at least 1 hour of Mus 435. Minimum of 4 hours of instrumental ensemble experience.

If the above requirements along with the graduation requirements of the College of Liberal Arts are met, the degree will be Bachelor of Music.

**Science**

(66 hours): Astr 345; Biol 106; Chem 105, 106; Hist 381, 382, 483, Soc 430, or UH 410; Math 171, 172, 220, 273, 315; Ph S 430; Phys 201, 202, 303, 304; two from 320, 330, or 341; 380; 410; 499 (4 hours includes observing Phys 101 and 102).

**Bilingual Education**

(18 hours): T&L 333 or 335; 339, 401, 409; 411 or 414; One or more from T&L 335 (only if 333 selected above); 410; 412, 472, 473, Anth 350, 355, 450, Engl 354, 443 or 458. Demonstrated proficiency in a language other than English.

**Early Childhood Education**

(22 hours): HD 201; 202 or 102; 302, 341, 342, 449, 482.

**English as a Second Language**


**Reading**

(18-20 hours). Courses include T&L 306, 307, 320, and others selected with approval by literacy faculty in Pullman or urban campuses. Guidelines available in department office.

**Special Education**

(31 hours): Individuals who hold or will hold endorsement in elementary or early childhood education take SpEd 301, 401, 402, 403, 404, 409, 421, 440, 470, 490 (4 credits). Individuals who hold or will hold endorsement in a specific subject matter take all of the foregoing plus T&L 306; 320 or 462; 352; Math 251, 252.

**Description of Courses**

**Health and Fitness Courses**

**HF**

263 First Aid 2 (1-3) First aid; CPR; accident prevention; American Red Cross certification awarded to those who qualify.

361 Health and Wellness 3 Knowledge of the multi-dimensional aspects of wellness and concepts necessary for a positive lifestyle through self-assessment.

393 Practicum in Special Populations V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. S, F grading.

463 Methods of First Aid Instruction 2 (1-3) Prereq Red Cross First aid and CPR certificate. Red Cross Standard First Aid and CPR instructor training; certification to those who qualify.

481 Health Education Methods 3 Prereq HF 361. Methods and materials for teaching health education.

483 Fitness Education Methods 3 (2-3) Prereq MvSt 481. Basic principles, theory, practice of development and maintenance of fitness for health and physical performance; emphasis on application for teachers.

484 Principles of Movement for Individuals with Disabilities 3 Knowledge, understanding, and skills for teaching movement activities to individuals with disabilities.

490 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Same as MvSt 490. S, F grading.

496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 9 hours. Special topics in health.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

**Special Education Courses**

Sp Ed

301 Education of Exceptional Children 3 Classification, developmental characteristics, and etiology of exceptional children; research and methods of instruction in the classroom.

401 Teaching Students with Disabilities 3 Prereq Sp Ed 301; certified major; c// in Sp Ed 490 for 2 credits or graduate standing. Intervention and monitoring strategies for managing academic, social, and problem behaviors in classroom settings. Credit not granted for both Sp Ed 401 and 501.

402 Assessment and Curriculum for Students with Disabilities 3 Prereq Sp Ed 301; certified major; c// in Sp Ed 490 for 2 credits, or graduate standing. Methods of assessment, curriculum development, and modification, and instruction for elementary-age students with mild disabilities. Credit not granted for both Sp Ed 402 and 502.

403 Secondary Education for Students with Disabilities 3 Prereq Sp Ed 301; certified major or graduate standing. Overview of practice in the schools for secondary students with disabilities; assessment, methods, and curriculum development. Credit not granted for both Sp Ed 403 and 503.

404 Professional Skills in Special Education 3 Prereq Sp Ed 301 and certified major or graduate standing. Communication, problem solving, liability, record keeping, professional development, legal issues, and program evaluation. Credit not granted for both Sp Ed 404 and 504.

409 Early Childhood Special Education 3 Prereq Sp Ed 301 or c//. Assessment, curriculum, and instructional techniques for teaching young children with handicaps and their families in a variety of settings. Credit not granted for both Sp Ed 409 and 509.
420 Teaching in Inclusive Classrooms 2 Prereq certified education major; c// in T & L 310, 403, 413, 445, 490 (3 credits); EdPsy 401. Designed for preservice/inservice general education (K-12) teachers to learn how to teach students with disabilities. Credit not granted for both Sp Ed 420 and 520.

421 Inclusion Strategies for Special Education Teachers 3 Prereq certified education major; Sp Ed 401; c// in T & L 310, 403, 413, 445, 490 (3 credits); EdPsy 401. Roles and responsibilities of special education professionals in inclusion programs, including legal aspects and collaboration. Credit not granted for both Sp Ed 421 and 521.

430 Special Topics in Instruction V 1-3 May be repeated for credit; cumulative maximum 6 hours. New developments in research and practice in program development.

440 Methods in Intensive Educational Supports 3 Prereq Sp Ed 301, certified major, or graduate standing. Assessment, curriculum development and modification, and instructional methods for students with severe disabilities. Credit not granted for both Sp Ed 440 and 540.

470 Effective Assessment and Instruction in Reading for Diverse Learners 3 Prereq admission to teacher certification. Preparation of K-12 teachers to conduct reading assessment and design reading interventions for students struggling in reading and literacy.

490 Practicum in Special Education V 1-3 May be repeated for credit; cumulative maximum 8 hours. Supervised field experience in special education. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Teaching Students with Disabilities 3 Prereq c// in Sp Ed 590 for 2 credits. Graduate-level counterpart of Sp Ed 401; additional requirements. Credit not granted for both Sp Ed 401 and 501.

502 Assessment and Curriculum for Students with Disabilities 3 Graduate-level counterpart of Sp Ed 402; additional requirements. Credit not granted for both Sp Ed 402 and 502.

503 Secondary Special Education for Students with Disabilities 3 Graduate-level counterpart of Sp Ed 403; additional requirements. Credit not granted for both Sp Ed 403 and 503.

504 Professional Skills in Special Education 3 Graduate-level counterpart of Sp Ed 404; additional requirements. Credit not granted for both Sp Ed 404 and 504.

509 Early Childhood Special Education 3 Graduate-level counterpart of Sp Ed 409; additional requirements. Credit not granted for both Sp Ed 409 and 509.

520 Teaching in Inclusive Classrooms 2 Graduate-level counterpart of Sp Ed 420; additional requirements. Credit not granted for both Sp Ed 420 and 520.

521 Inclusion Strategies for Special Education Teachers 3 Prereq Sp Ed 501. Graduate-level counterpart of Sp Ed 421; additional requirements. Credit not granted for both Sp Ed 421 and 521.

522 Topics in Special Education V 1-4 May be repeated for credit; cumulative maximum 8 hours. Recent research developments, issues and/or applications in selected areas of special education.

540 Methods in Intensive Educational Supports 3 Graduate-level counterpart of Sp Ed 440; additional requirements. Credit not granted for both Sp Ed 440 and 540.

571 Prevention and Remediation of Reading Disabilities 3 Prereq graduate standing. Theoretical concepts, research, and strategies of reading assessment and instruction for students with disabilities.

589 Seminar in Disability Studies 3 Prereq graduate standing. Current research, issues, trends in disabilities within the broader context of education, society, history.

590 Practicum in Special Education V 1-4 May be repeated for credit; cumulative maximum 8 hours. Supervised experiences in application of theories and practices in special education. S, F grading.

597 Special Education Internship V 2-4 May be repeated for credit; cumulative maximum 6 hours. Supervised internship experience in domestic and international settings. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

Teaching and Learning Courses

T & L

300 Introductory Field Experience 1 (0-3) Supervised field experience for preservice teachers designated as an orientation to education. S, F grading.

301 Learning and Development 2 Prereq Psych 105, T & L 300 or c//, or by permission. Reflective inquiry about human learning, development, diversity, and individual differences, examination of implications for teaching and education reform.

302 Secondary School Curriculum and Content Literacy Development 2 (0-4) Prereq certified education major, T & L 301, 317, c// in T & L 303. Development and implementation of curriculum and content literacy, including course outlines and lesson and unit plans.


304 Introduction to Middle Level Education 2 Prereq T & L 300. Study of adolescents; middle level organization and instructional strategies including field component at middle schools.

305 Fundamentals of Instruction 2 Prereq certified education major; c// in T & L 306, 307, 320, and 402 (1 credit). Introduction to lesson and unit plans, state standards, instructional models, and basic strategies for using and integrating technology.

306 [M] Survey of Elementary Reading and Language Arts 3 Prereq certified education major; H D 101; T & L 301; c// in T & L 305, 307, 320 and 402 (1 credit). Attitudes, knowledge, and skills needed for successful teaching of reading skills and language arts.


308 Teaching Writing K-12 2 Prereq admission to teacher preparation program; T & L 301 or c//; T & L 300. For preservice teachers. Improving writing skills; preparing effective writing lessons.

310 [M] Classroom Management 2 Prereq certified education major; T & L 301; c// in T & L 403, 413, 445, 490 (3 credits); EdPsy 401 and Sp Ed 420/421. Strategies for developing positive and supportive classroom learning environments.

315 Elementary Practicum and Seminar 3 (0-9) Prereq T & L 301. Classroom experience prior to student teaching providing observation, reflection and gradual classroom involvement and teaching responsibility. S, F grading.

317 Secondary Practicum and Seminar 2 (0-6) Prereq TkL 301. Classroom experience providing observation, reflection and gradual classroom involvement and teaching responsibility. S, F grading.

324 Methods of Teaching Foreign Languages 3 Same as For L 340.


330 Diversity in Schools and Society 2 Prereq admission to teacher preparation program. Gender, linguistics, cultural and learning diversity; concepts, issues, approaches to educating students in a diverse society.

333 Introduction to English as a Second Language (ESL) 3 Foundations of ESL with attention to basic concepts of second language processing in educational settings.

335 Bilingual Bicultural Education 3 Same as CES 356.
339 Communicating in Diverse Classrooms
3 Selected topics dealing with linguistic diversity, cross-cultural communication, language development and language use.

352 Teaching Elementary Mathematics 3
Prereq certified education major; Math 251, 252; T & L 301, c/ in T & L 371, 385, and 405 (1 credit). Teaching methods, materials, and content in elementary and middle school mathematics.

355 Chicanas/os and the Educational System 3
Same as CES 355.

371 Teaching Elementary Science 3
Prereq certified education major, science GERs; T & L 301, c/ in T & L 352, 385, and 405 (1 credit). Teaching methods, materials, and content in elementary and middle school science studies.

385 Teaching Elementary Social Studies 3
Prereq certified education major; T & L 301; c/ in T & L 352, 371, and 405 (1 credit). Teaching methods and materials in elementary and middle school social studies.

390 Integrating Fine Arts into K-8 Curriculum 3
Prereq certified education major; T & L 301 or c/; integrating the range of fine arts (art, music, dance, drama) into K-8 curriculum; designed for preservice and inservice general K-8 teachers.

400 Advanced Field Experience V 1 (0-3) to 6 (0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq certified education major; T & L 302, 303; T & L 317 or c/; 60 hours classroom observation and teaching prior to student teaching; weekly seminar; contact department semester prior to enrollment for orientation and approved placement. S, F grading.

401 Practicum in Bilingual/ESL Education 2 (0-6) May be repeated for credit; cumulative maximum 6 hours. Prereq T & L 333, 335, or graduate standing. Work with students from diverse cultural and linguistic backgrounds in an educational setting.

402 Instructional Practicum I V 1 (0-3) to 6 (0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq certified education major; c/ in T & L 305, 306, 307, and 320. Application of educational theories and approaches learned during methods Block I.

403 Social Foundations of Elementary Curriculum 2
Prereq certified education major; c/ in T & L 310, 413, 445, 490 (2 credits); EdPsy 401; and Sp Ed 420/421. The school: historical, and philosophical foundations of education; school law and professional certification.

404 Social Foundations of Secondary Curriculum 2
Prereq certified education major; T & L 317. Historical, philosophical, sociological and political contexts of schooling and teaching, including school law and professional certification.

405 Instructional Practicum II V 1 (0-3) to 6 (0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq certified education major; T & L 402; c/ in T & L 352, 371, and 385. Application of educational theories and approaches learned during methods Block II.

409 Curriculum and Assessment for Bilingual/ESL Education 3
Prereq T & L 333; 339 or 414. Curriculum development for assessment of language minority students.

410 Theoretical Foundations of Bilingual/ESL Education 3
Prereq T & L 333, 335, or graduate standing. Theoretical foundations related to research and instructional strategies for effective schooling of language minority students. Credit not granted for T & L 410 and 510.

411 Bilingual Methods and Materials Across Content Area 3
Prereq T & L 333, or 335, 339, 401, and Span 308 or demonstrated fluency in a second language or graduate standing and fluency in a second language. Approaches, methods, and materials across content areas for the bilingual classroom.

412 Language and Cultural Factors in Mathematics 3
Prereq T & L 352 or teaching experience. Research and instructional strategies related to linguistic and cultural influences on learning math. Credit not granted for both T & L 412 and 512.

413 Introduction to ESL for K-8 Teachers 2
Prereq certified education major; c/ in T & L 310, 405, 445, 490 (3 credits), EdPsy 401 and Sp Ed 420 or 421. Introduction to teaching ESL students for K-8 teachers.

414 Methods and Materials for Bilingual/ESL Education 3
Prereq T & L 333, or teaching experience. Research and instructional methods related to English language acquisition across content areas. Credit not granted for both T & L 414 and 514.

415 Student Teaching V 6 (1-15) to 16 (1-45)
Prereq certified education major; make application and pay certification fees; complete all other course work for degree and teacher certificate; receive fingerprinting clearance from Washington State Patrol, FBI, and Office of Professional Practices; maintain a 2.5 GPA overall, in endorsement area and professional core courses. Placement by interview only at approved sites. Supervised teaching in public schools including seminars reflecting on effective teaching and professional certification. S, F grading.

425 Conceptual Aspects of Mathematics 3
Prereq college-level math course. Exploration of conceptual models for thinking about mathematical ideas; activities and discussions of mathematical thinking and instruction.

431 Innovations in Reading 2
Prereq admission to teacher preparation program. Aspects of teaching reading; current programs and trends; activities and materials for enrichment. Credit not granted for both T & L 431 and 530.

433 Children’s Literature in the Curriculum 2
Prereq T & L 307 or teaching experience. Theory and classroom applications for selecting and using literature and storytelling in content areas; reading, writing, language development, the arts. Credit not granted both T & L 433 and 532.

445 Elementary Methods of Educational Technology 2
Prereq certified education major; T & L 301; block II courses. Consideration of all technologies in K-8 schools, applications for their use, some production techniques and instructional methodologies.

446 Secondary Methods of Educational Technology 2
Prereq T & L 302, 303, and 400 or c/. Consideration of technologies available for 9-12 classrooms, applications for their use, some production techniques and instructional methodologies.

450 Content Literacy in Middle and Secondary Schools 2 or 3
Prereq admission to teacher preparation program; T & L 300; 301 or c/. Reading and writing in content areas, grades 4-12; integrating service learning and community of learners approaches in teaching literacy skills.

452 Content Area Reading and Study Skills Practicum V 1-3 May be repeated for credit; cumulative maximum 3 hours. Prereq T & L 320 or 450. Development and delivery of vocabulary, comprehension, and study skills.

462 Corrective Reading in the Classroom 2
Prereq admission to teacher prep program; T & L 300, 301. Investigation, formulation, application of informal and formal assessment for classroom instruction; specific needs of children with reading difficulties.

472 Technology for Language Learning 3
Prereq T & L 333, 335, or graduate standing. Computer technologies addressing the needs of language minority students and their teachers (including audio, video, graphics, and text).

473 Teaching Foreign Language in the Elementary School 3
Prereq proficiency in a foreign language. Theory and methods of teaching foreign languages in the elementary schools.

478 Family, School, and Community Collaboration 2
Prereq certified education major; T & L 302, 303. Practices for connecting schools, families, and communities for student learning and community well being.

480 Multicultural Education in a Global Society 3
Prereq multicultural and multilingual education from a global perspective; development of multicultural curriculum. Credit not granted for more than one of T & L 480, 580, 582.

483 Integrating Health and Fitness into K-8 Curriculum 3
Prereq certified education major. Integrating health and fitness concepts into the K-8 curriculum; issues of abuse; designed for preservice and inservice K-8 teachers.

487 Global Geography 3
Prereq certified major; open to non-education majors. World geography as a global perspective; education in the contemporary world: the interaction between human societies and the natural environment.

490 Advanced Practicum V 1 (0-3) to 3 (0-9)
Prereq T & L 402, 405. May be repeated for credit; cumulative maximum 8 hours. Intensive practicum integrating educational theory with teaching in classroom contexts. S, F grading.
497 Topics in In-Service Education V 1-3 May be repeated for credit; cumulative maximum 9 hours. New developments and applications on selected in-service and staff development topics.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Bilingual/ESL Education 3 May be repeated for credit; cumulative maximum 6 hours. Prereq one course in bilingual/ESL or by interview only. Work with students from diverse linguistic and cultural backgrounds in educational settings.

502 Assessment for Teaching and Learning V 1-3 Instruction in sound assessment practices for preservice and inservice graduate students.

505 ESL Methods for General Educators 2 For pre-service general education K-12 teachers addressing researched-based ESL strategies and methods.

506 Multicultural Classroom Instruction and Management 4 Instructional and management strategies for maximizing students’ opportunities to learn in a multicultural setting.

507 Seminar in Literacy in Multicultural Settings I 3 Multicultural perspective to curriculum development and classroom literacy practices.

508 Seminar in Literacy in Multicultural Settings II 3 Prereq T & L 507; graduate standing. Multicultural perspective to curriculum development and classroom literacy practices.

509 Research in Curriculum and Assessment for Bilingual/ESL Education 3 Prereq T & L 510 or 514; graduate standing. Research in curriculum development for and assessment of language minority students.

510 Theoretical Foundations of Bilingual/ESL Education 3 Graduate-level counterpart of T & L 410; additional requirements. Credit not granted for both T & L 410 and 510.

511 Teaching Poetry to Children and Young People 3 Prereq T & L 303, 307, or teaching experience. Elements and forms of poetry for children and young people; selection and utilization in the school curriculum.

512 Language and Cultural Factors in Mathematics 3 Graduate-level counterpart of T & L 412; additional requirements. Credit not granted for both T & L 412 and 512.

513 Seminar in Middle School Education 3 Prereq teaching experience. Curriculum patterns and recent research regarding instruction and materials in the contemporary middle school.

514 Methods and Materials for Bilingual/ESL Education 3 Graduate-level counterpart of T & L 414; additional requirements. Credit not granted for both T & L 414 and 514.

515 The Education of Cultural and Linguistic Minority Students 3 Prereq K-12 teaching experience. Issues in the education of language minority students.

516 Advanced Study in Computer-Assisted Language Learning 3 Prereq T & L 510 or 549 or permission of instructor; graduate standing. Research, theory, and practice in computer-assisted language learning.

518 Integrating Technology into the Curriculum 3 Examination and articulation of the potential for new technologies to expand learning opportunities.

519 Instructional Media Production I 3 Instructional media development, emphasizing the theory and methods of instructional design, digital media production and evaluation.

520 Topics in Special Student Populations V 1-4 May be repeated for credit; cumulative maximum 6 hours. For K-12 teachers. Knowledge of special student populations and guidance in developing appropriate curricula. Co-operative course taught jointly by WSU and UI (EDTE 504).

521 Topics in Education V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, developments, issues, and/or applications in selected areas of education.

522 Topics in Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Recent research, development, issues, and/or applications in selected areas of education.

523 Topics in Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Recent research, development, issues, and/or applications in selected areas of education.

524 Topics in Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Recent research, development, issues, and/or applications in selected areas of education.

525 Classroom Management Seminar 2 or 3 Contemporary issues in management of elementary, middle school, and secondary classrooms; issues of abuse.

526 Research in Multicultural Education 3 Prereq T & L 515 or teaching experience. Research and instructional practices focusing on multicultural education.

527 Seminar in Teacher Education Instruction 1 May be repeated for credit; cumulative maximum 4 hours. Teacher preparation program components and rationale, University teaching strategies, and evaluation methods. S, F grading.

528 Content Area Reading Instruction: Theory and Practice 3 For teachers, supervisors, and administrators in elementary, middle, and secondary schools; influence of research on the design of reading strategies.

529 Place-Based Education Prereq graduate standing. Theory and practice of place-based education with an emphasis on community-based action research and curriculum planning.

530 Innovations in Reading 2 Graduate-level counterpart of T & L 431; additional requirements. Credit not granted for both T & L 431 and 530.

532 Children’s Literature in the Curriculum 2 Prereq T & L 320 or teaching experience. Graduate-level counterpart of T & L 433; additional requirements. Credit not granted for both T & L 433 and 532.

535 Gender, Power and Education 3 Prereq graduate standing. Interdisciplinary focus on the relationships among gender, power and education.

537 Seminar in Language, Literacy, and Culture 3 Prereq graduate standing. Interrelationships between schools, literacy, and student cultural background.

538 Writing Across the Curriculum 3 Writing for learning at grade levels K-12.

539 Innovations in Language Arts 3 Prereq T & L 303, 320, or teaching experience. The most recent developments in language arts instruction for preservice and in-service teachers K-12.

540 Elementary School Social Studies 3 Prereq teaching experience. Elementary structures of various social sciences; research findings related to instruction; classroom applications and materials.

541 Professional Assessment Seminar V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq admission to PCP. Focus on knowledge and skills in educational research to assess professional practice.

543 Advanced Professional Education Seminar V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq admission to PCP; T & L 541. Provides professional educators opportunities to complete portfolio of subject matter knowledge and skills and analyze research.

544 Advanced Children's Literature 3 Prereq T & L 307; teaching experience. Trends, issues, and research in children’s literature.

545 Oral Language Development: Roots of Literacy 3 Prereq teaching experience. Research on children’s oral language development; applications to elementary school reading and writing.

546 Teaching Writing in the Elementary School 3 Prereq teaching experience. Theory and research relevant to instructional approaches and practices for teaching writing in elementary schools.

547 Teaching Folk Literature to Children and Adolescents 3 Prereq T & L 307 or teaching experience. Folk literature as a genre in child and adolescent literature; curriculum applications; reading, language development, social studies, creative expression.

548 Teaching Adolescent Literature 3 Prereq T & L 307 or teaching experience. Evaluating, selecting, and using literature for middle school and teenage students.

549 Communicating in a Multilingual Society 3 Prereq T & L 333, 335 or graduate standing. Study of language in social and educational context and its relation to cultural and linguistic diversity.
551 Psychology of Reading 2 or 3 Prereq T & L 320 or 450/451; teaching experience. Psychological, perceptual, motivational, developmental and physiological aspects of reading.

552 Literacy Development I 3 Review of current research and approaches to instruction in the development of literacy in elementary and middle grades.

553 Assessment and Instruction for Reading: K-8 4 (3-3) Prereq T & L 307, 321, 322, or permission of instructor. Evaluation techniques and instructional practices for impacting the reading achievement of K-8 students.

554 Elementary School Reading 2 Theory and strategies of teaching reading in elementary school.

555 Seminar in Literacy Development 3 May be repeated for credit; cumulative maximum 6 hours. Current and historical research in reading/language arts, infancy through college and adult years; papers presented by faculty, invited speakers, and students.

556 Literacy Development II 3 Review of current research and approaches to instruction in the development of literacy in elementary and middle grades.

557 Research in Reading 3 Prereq EdPsy 505. Exploration of both qualitative and quantitative reading research covering topic of current and historical importance.

558 Improving Comprehension through Literature 3 Prereq teaching experience. Key theoretical concepts and their implications for improved comprehension instruction, using children's literature.

560 Research in Teaching 3 May be repeated for credit; cumulative maximum 6 hours. Prereq teaching experience. Recent developments in research on teaching; both quantitative and qualitative research methodologies emphasized.

561 Elementary School Mathematics 3 Prereq T & L 352; Math 252; teaching experience. Research on curriculum and instruction issues in elementary school mathematics.


563 Seminar in Precollege Mathematics Education 3 Prereq T & L 542 or 562. May be repeated for credit; cumulative maximum 6 hours. Research on curriculum and instruction in mathematics education in grades K-12.

564 Elementary School Mathematics Methods 3 Introduction to research, theory, and methods of teaching K-8 mathematics; emphasis on integrating theory and practice.

571 Elementary School Science 3 Prereq T & L 371; teaching experience. Theories and research underlying science programs with classroom implications.

572 Elementary School Science Methods 3 Theoretical base to design and implement appropriate standards-based elementary science instruction.

573 Children's Literature and Hands-On Science 3 Prereq graduate standing. Students learn how to bring together language arts and science curricula to instill in children a curiosity about the world around them.

574 Science for All: An Individual and Multicultural Perspective 3 Prereq teaching experience. Implications of cultural and individual diversity for understanding western scientific and mathematical thought; an activity-based, educational perspective.

577 The At-Risk Learner 2 Strategies for working with at-risk students.

580 Multicultural Education in a Global Society 3 Graduate-level counterpart of T & L 480; additional requirements. Credit not granted for more than one of T & L 480, 580, 582.

582 Multicultural and Global Perspectives in Education 2 Concepts, theories and applications of multicultural and global perspectives in teaching and learning. Credit not granted for more than one of T & L 480, 580, 582.

583 Problem Solving in Elementary and Middle Level Education 3 Prereq admission to MIT program. Integration of knowledge and skills to address complex cases in teaching and learning.

586 Issues in At-risk Education 2 or 3 School and community resources to assist at-risk students and families.

588 Action Research: Teachers as Research 3 Prereq teaching experience. Theoretical concepts, research, issues, models, and strategies for implementation of action research.

589 Race, Identity and Representation in Education 3 Prereq graduate standing. Interdisciplinary research in race, identity and representations in education.

590 Internship V 2-6 May be repeated for credit; cumulative maximum 12 hours. By interview only. Opportunities in professional positions. S, F grading.

593 Pre-internship and Seminar 2 (1-3) Instructional practice in diverse classroom settings and reflection on that practice. S, F grading.

594 Art and Music Education 2 Instruction covering the theory and classroom practice of art and music.


596 Topics in In-Service Education V 1-3 (1-3) Prereq graduate standing or permission of instructor. May be repeated for credit; cumulative maximum 12 hours. Advanced study of research, practice, and contemporary issues in education.

597 Topics in In-Service Education V 1-3 May be repeated for credit; cumulative maximum 9 hours. Graduate-level counterpart of T & L 497; additional requirements. Credit not granted for both T & L 497 and 597. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

College of Veterinary Medicine

www.vetmed.wsu.edu/

Bustad 110

509-335-1531

The College of Veterinary Medicine offers courses of study leading to the degrees of Doctor of Veterinary Medicine, Bachelor of Science in Veterinary Science, Master of Science in Veterinary Science, and Doctor of Philosophy. Additional information, including requirements for admission, is contained in the general information section of this catalog.

The College of Veterinary Medicine at Washington State University is accredited by the American Veterinary Medical Association.

The following program is an outline of the minimum requirements necessary for application to professional study in the College of Veterinary Medicine.

PREVETERINARY REQUIREMENTS

1. Arts and Humanities 3-6 hours
2. Communication Proficiency 6 hours (3 hours must be in written communication)
3. Intercultural Studies 3 hours
4. Social Sciences 3-6 hours
5. World Civilizations 6 hours
6. Math Proficiency 3 hours
7. Writing Portfolio
8. Tier III Course 3 hours
9. Physical and Biological Sciences 33-35 hours

Courses to meet the above requirements must be selected from the list under the General Education Requirements for Graduation section of this catalog.

Physical and Biological Sciences 33-35 hours

Exception under unusual circumstances applicants will be expected to have completed courses as indicated in each of the following: chemistry including organic and biochemistry; mathematics; physics; zoology or general biology; genetics.

10. Electives

BACHELOR OF SCIENCE DEGREE IN VETERINARY SCIENCE (120 HOURS)

The Bachelor of Science degree in Veterinary Science combines credits earned in both the preprofessional and professional programs. The degree is available only to students who have been admitted to the professional program. This degree was
designed to benefit veterinary medical students in obtaining employment, applying for scholarships, and qualifying for graduate-level course enrollments. A minimum of 120 semester hours is required for the degree. The minimum basic requirements are:

**General Education Requirements (see above)**

- 60 additional hours of acceptable University credit of which 34 hours must be 500-level or above courses in the professional curriculum of the College of Veterinary Medicine

**Honors Program in Veterinary Medicine for Selected Students**

A program for admission of highly selected and academically qualified students to the Washington State University College of Veterinary Medicine has been established. This program admits students directly to the college upon completion of one year of undergraduate work at WSU. This is a seven-year program leading to the Doctor of Veterinary Medicine degree after satisfactory completion of the curriculum. It consists of three years of a unique undergraduate preprofessional education and the four-year professional program. The first three years of this program are a combination of Honors College courses and regular University classes which fulfill the preprofessional requirements. The last four years are the traditional Doctor of Veterinary Medicine program plus the completion of an honors thesis. Applicants should identify themselves to the Honors College as soon as students decide to enter WSU because the number of positions is limited.

**Joint Program in Animal Science and Veterinary Medicine**

See Department of Animal Sciences.

**PROFESSIONAL CURRICULUM**

The professional curriculum for the Doctor of Veterinary Medicine degree is outlined below. A total of 151 semester hours are required for graduation. All courses required in the professional program are 500P-600P-level courses.

### First Year

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### Second Year

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### Third Year

**First Term**

- V M 511P
- V M 533P
- V M 544P or 555P
- V M 569P
- V M 578P
- V M 585P

**Second Term**

- V M 500P
- V M 552P
- V M 570P
- V M 571P
- V M 572P
- V M 579P
- V M 590P
- V M 598P

### Fourth Year

The fourth year begins immediately after the end of the spring semester of the third year (May) and continues for 12 consecutive months. Fourth-year professional students are required to enroll in course work for a minimum of 44 weeks of their final year. All students must participate in mandatory clinical rotations in the large- and small-animal clinics, including emergency services and anesthesia. In addition, each student must select elective opportunities in their area of interest. All students must prepare and present a senior paper under faculty supervision.

### Description of Courses

**Veterinary Medicine Courses**

#### V M 350 Skeletal Preparation

Technique of skeletal preparation is mastered by undertaking and completing project. Student becomes property of student. May be repeated for credit; cumulative maximum 3 hours. S, F grading.

#### 394 Veterinary Medicine as a Career

Pre-req junior standing; cumulative gpa of 3.00 or higher; MBioS 303 or c/l. Current issues in veterinary medicine; ethical, financial and personal aspects of the veterinary practice. S/P grading.

#### 499 P Special Problems

V 1-4 Prereq DVM program or permissions of instructor. May be repeated for credit. S,M,F grading.

#### 500 P Success in Veterinary Medicine

Active participation in activities designed to enhance personal growth, character development and leadership skills. S, M, F grading.

#### 501 P International Veterinary Medicine

Prereq veterinary medicine students. Important issues and constraints facing the global community. S, M, F grading.

#### 504 P International Field Studies

- V 1 (0-3) to 6 (0-18) Prereq V M 501P, 502P, 503P, fourth year veterinary medicine. Preceptorship in the US or overseas, under direct supervision of veterinarian, agriculture or public health professional; related to international veterinary medicine. S, M, F grading.

#### 505 P Reverence for Life

1 (0-2) Prereq veterinary medicine students. Connections between humans and animals; discussions related to use of animals in Western societies; social issues related to veterinary medicine. S, M, F grading.

#### 508 P Research Orientation and Resource

1 Prereq student in veterinary research track. Resources and important issues for identifying and developing a focused area of scholarly activity in biomedical research. S, M, F grading.

#### 509 P Research Issues, Ethics, and Literacy

1 May be repeated for credit; cumulative maximum 3 hours. Prereq student in veterinary research track. Philosophy and history of methodological, ethical and political issues relevant to biomedical research using selected monographs and essays. S, M, F grading.

#### 510 P Clinical Specialties

V 1-4 Prereq enrollment in professional DVM program. This course includes clinical disciplines that are not considered core internal medicine, such as ophthalmology and dermatology. S, M, F grading.

#### 511 P Veterinary Anatomy I

5 (0-15) Prereq first year in veterinary medicine or graduate student. Detailed macroscopic functional morphology of the dog with comparison to other domestic animals; developmental anatomy of selected organ systems. S, M, F grading.

#### 512 P Veterinary Anatomy II


#### 513 P Veterinary Cell Physiology

4 Prereq first year in veterinary anatomy curriculum, admission to veterinary medicine or graduate student. Cell physiology focusing on endocrine, paracrine, and neurotransmission signaling processes, transcriptional and translational control, and methodologies relevant to medicine. S, M, F grading.

#### 517 P Applied Anatomy of Small Animals


#### 518 P Applied Anatomy of Large Animals

2 (1-3) Prereq V M 512P. Applied anatomy of large animals including surgical anatomy. S, M, F grading.

#### 519 P Anatomy of the Avian and Exotic Species

1 (0-2) Prereq V M 511P. Detailed macroscopic functional morphology of selected avian and exotic species, emphasizing the specialized anatomical adaptations of these animals. S, M, F grading.

#### 520 P Veterinary Physiology

5 (4-3) Prereq V M 510P. Physiology of domestic animals. Cooperative course taught by WSU, open to UI students (VS 518). S, M, F grading.
College of Veterinary Medicine

521 P Mammalian Neuroscience 3 (2-3) Prereq V M 510P. Neuroanatomical and neurophysiological bases of veterinary neurology, emphasizing central and peripheral sensory and motor systems. S, M, F grading.


523 P Veterinary Toxicology 3 Prereq V M 522P. Pharmacology and toxicology of the systems of domestic animals. Continuation of V M 522P. S, M, F grading.


525 P Animal Behavior for the Practicing Veterinarian 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Prereq by interview only. Study of the treatment of behavioral problems and training of domestic animals. S, M, F grading.

526 P Domestic and Exotic Animal Behavior 2 (1-3) Prereq by interview only. Advanced study of animal behavior, emphasizing difference between exotic and domestic animal behavior. Cooperative course taught by WSU, open to UI students (Zool 526). S, M, F grading.

527 P Clinical Animal Behavior V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq by interview only. Participation in the treatment of animals with behavioral problems and in animal behavior training classes for clients and their animals. S, M, F grading.

534 P Veterinary Immunology 3 (2-3) Prereq major in veterinary medicine or graduate student in veterinary science. Immunology for the professional veterinary student. S, M, F grading.

535 P Veterinary Virology 3 Prereq major in veterinary medicine or graduate student in veterinary science. Virology for the professional veterinary student. S, M, F grading.

536 P Veterinary Bacteriology 4 (3-3) Prereq second year veterinary medicine. Bacteria that produce disease in animals. S, M, F grading.

537 P Veterinary Parasitology 4 (3-3) Prereq second year veterinary medicine. Arthropods, protozoa, and helminths of veterinary importance; their host-parasite relationship and control. S, M, F grading.

541 P Fish Disease Diagnostics and Control 2 (1-2) Prereq veterinary medicine major. Current fish disease diagnostics techniques crucial to management and control of disease in wild or confined populations. Cooperative course taught by UI (Fish 524), open to WSU students.


543 P Veterinary Medicine and Human Health 2 Prereq third year veterinary medicine. Preparation for veterinary students in public health and food hygiene. S, M, F grading.


554 P Surgery Laboratory I 1 (0-3) Prereq c// in V M 553P. Surgical exercises using small animals. S, M, F grading.

555 P Surgery Laboratory II 1 (0-3) Prereq c// in V M 553P. Surgical exercises minimizing use of living animals. S, M, F grading.


559 P Special Animal Medicine V 1-3 Prereq third year veterinary medicine. Handling, restraint, care, normative features, procedures and diseases of unusual animals as pets or those used in food production or research. S, M, F grading.

560 P Clinical Problem Solving V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 4 hours. Prereq admission to DVM program. Web-based clinical problem solving course designed to enhance problem-solving skills using simulated patients. S, M, F grading.

561 P Clinical Specialties V 1-4 Prereq enrollment in professional DVM program. This course includes clinical disciplines that are not considered core internal medicine, such as ophthalmology and dermatology. S, M, F grading.

568 P Animal Restraint and Production 2 (1-3) Prereq admission to DVM program. Restraint procedures, production aspects and the social issues of agricultural animals seen by veterinarians and career opportunities associated with them. S, M, F grading.


570 P Agricultural Animal Medicine II 4 Prereq V M 569P. Infectious and non-infectious conditions of agricultural animals; introduction to performance medicine. Continuation of V M 569P. S, M, F grading.


575 P Small Animal Theriogenology 1 Prereq third year professional DVM program. Information on management and disorders of the canine and feline reproductive systems as it relates to veterinary practice. S, M, F grading.

577 P Herb Production Medicine 3 (2-3) Health management of livestock herds, targeting measures of productivity and profitability. S, M, F grading.


580 P Basic Nutrition 1 Prereq acceptance into DVM program. Introduction to the concepts of basic nutrition designed for the first year veterinary student. S, M, F grading.

581 P Equine Orthopedic Sports Medicine 1 Prereq VM 574P. 15 one-hour presentation/discussion sessions as an advanced supplement to VM 628P. Not available for audit. S, M, F grading.

585 P Epidemiology 2 Prereq acceptance into DVM program. Minimally quantitative survey in which health is framed as a population phenomena. S, M, F grading.

586 Analytic Epidemiology 2 (1-3) Prereq statistics course. Problem-solving methods related to health events and other occurrence phenomena.


590 P Veterinary Clinical Nutrition V 1-3 May be repeated for credit; cumulative maximum 3 hours. Large and small animal clinical nutrition; nutrient composition; nutritional diseases and practical feeding methods. S, M, F grading.


593 P Pain and Analgesics 2 Prereq VM 587P. Supplemental core course for DVM students; anatomy and physiology of pain; recognition and treatment of pain in veterinary patients. S, M, F grading.

598 P Introduction to Clinics 1 (0-3) Prereq third year veterinary medicine. Introduction to the practice of clinical veterinary medicine and surgery within the Veterinary Teaching Hospital including records, presentation and protocol. S, M, F grading.

599 P Special Problems V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq enrollment in DVM Professional Program. S, M, F grading.

600 P Scientific Writing and Presentation 1 Prereq fourth year veterinary medicine. Senior veterinary student paper preparation and oral presentation on a subject related to veterinary medicine. S, M, F grading.

601 P Small Animal Medicine 4 (0-12) Prereq fourth year in veterinary medicine. Theory and practice of small animal medicine; hospital rotation in all phases. S, F grading.

602 P Small Animal Surgery 4 (0-12) Prereq fourth year veterinary medicine. Surgical cases in clinic, ward round, case discussions by students, seminars by faculty, designed surgical exercises. S, F grading.

603 P Clinical Elective at Oregon State University V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year professional DVM program. Clinical medicine training in diseases of food animals and horses; clinic rounds and diagnostic procedures. S, F grading.

610 P Basic Small Animal Rotation V 8 (0-24) to 12 (0-36) Prereq fourth year veterinary medicine. Required rotation through the medical and surgical services of the Small Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

611 P Small Animal Surgery—Orthopedic Service V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical experience with the Small Animal Orthopedic Surgery Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

612 P Small Animal Soft Tissue Surgery V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical experience with the Service in the Small Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

613 P Small Animal Medicine Elective Referral V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical experience with the Small Animal Medicine Referral Practice Service in the Small Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

614 P Small Animal Medicine—Local Practice Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical experience with the Small Animal Medicine Local Practice Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

615 P Small Animal Medicine—Speciality Practice Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical experience in a specialty practice area of small animal clinical medicine or surgery. S, F grading.

616 P Exotic Animal Medicine V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical experience with the Small Animal Medicine Exotic Practice Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

617 P Clinical Neurology V 1 (0-3) to 3 (0-9) Prereq fourth year DVM student. Rotation will emphasize neuroanatomical localization, differential diagnosis, diagnostic testing, and treatments. S, F grading.

618 P Veterinary Dentistry V 1 (0-3) to 4 (0-12) Prereq fourth year veterinary medicine. Clinical experience, laboratory exercises, and instructional sessions to increase proficiency in clinical dentistry. May be repeated for credit; cumulative maximum 4 hours. S, F grading.

619 P Small Animal Clinical Behavior 1 (0-3)—4 (0-12) Prereq fourth year veterinary medicine. Diagnosing, preventing, and managing common behavioral problems encountered in private practice. S, F grading.

620 P Clinical Oncology V 1 (0-3)—4 (0-12) Prereq fourth year veterinary medicine. Diagnosing, staging and treating the veterinary cancer patient. S, F grading. May be repeated for credit, cumulative maximum 4 hours.

628 P Equine Surgery Clinical Rotation V 2 (0-6) to 6 (0-18) Prereq fourth year in the DVM program. Required rotation through the Equine Surgery Services of the Veterinary Teaching Hospital.

629 P Equine Medicine Clinical Rotation V 2 (0-6) to 6 (0-18) Prereq fourth year in the DVM program. Required rotation through the Equine Medicine Services of the Veterinary Teaching Hospital.

630 P Agricultural Animal Clinical Rotation V 2 (0-6) to 6 (0-18) Prereq fourth year in the DVM program. Required rotation for Agricultural Animal Medical, Surgical, and Ambulatory Service of the Veterinary Teaching Hospital.

631 P Population Medicine V 1 (0-3) to 4 (0-12) Prereq fourth year veterinary medicine. Required rotation for agricultural animal species emphasis through the population medicine laboratory of the Veterinary Teaching Hospital. S, M, F grading.

632 P Large Animal Theriogenology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical theriogenology subjects in large animals. S, F grading.

633 P Agricultural Animal Medicine/Surgery V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical subjects in food animal diseases and herd health/preventive medicine. S, F grading.

634 P Epidemiology of Diseases V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Field research on the epidemiology of a selected disease problem including project design, data collection and completion of a paper.

635 P Preventive Medicine at Canine Center V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Preventive medicine and management practices related to control of animal diseases at Caine Center, UI, Caldwell Idaho.

636 P Equine Medicine Elective V 1 (0-3) to 4 (0-12) May be repeated for credit, cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical experience with the Equine Medicine Service in the Large Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

637 P Equine Surgery Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical experience with the Equine Surgery Service in the Large Animal Clinic, Veterinary Teaching Hospital.
638 P Equine Track V 1 (0-3) to 4 (0-12) Prereq fourth year veterinary medicine; enrollment in equine career track. Clinical experience with the Equine Surgery Service of the Large Animal Clinic, Veterinary Teaching Hospital.

639 P Small Animal Theriogenology V 1 (0-3) to 4 (0-12) Prereq fourth year professional DVM program. Hands-on experience in diagnosis, treatment, prevention and management of disorders related to canine and feline reproduction. S, F grading.

650 P Anesthesia Case Management V 1 (0-3) to 4 (0-12) Prereq fourth year veterinary medicine. Required rotation through the Clinical Anesthesia Service of the Small Animal Clinic and Large Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

651 P Pharmacy and Therapeutics 1 (0-3) Prereq fourth year veterinary medicine. One-week overview of Washington and federal drug laws, inventory control, formulary management, therapeutics for a successful practice. S, F grading.

652 P Technical and Diagnostic Radiology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq fourth-year veterinary medicine. Laboratory exercises and instructional sessions to increase proficiency in clinical diagnostic radiology. S, F grading.

653 P Imaging Services Elective V 1 (0-3) to 4 (0-12). May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical and laboratory experience with the Radiology Section in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

656 P Diagnostics V 1 (0-3) to 4 (0-12) Prereq fourth year veterinary medicine. Advanced study in diagnostic pathology, toxicology, and microbiology.

657 P Clinical Pathology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq fourth year veterinary medicine. Clinical laboratory diagnosis and interpretation. S, F grading.

673 Small Animal Critical Care V 1 (0-3) to V 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq fourth year DVM student. Elective clinical experience, didactic topic discussions, and instructional sessions in small animal critical care. S, F grading.

675 P Emergency and Critical Care V 1 (0-3) to 4 (0-12) Prereq fourth year veterinary medicine. Required rotation for all students through the Services, Veterinary Teaching Hospital. S, F grading.

676 P Veterinary Research Practicum V 1 (0-3) to 8 (0-24) May be repeated for credit; cumulative maximum 14 hours. Prereq fourth year veterinary medicine; enrollment in research track program or approved for research career track. Individualized research project. S, F grading.

690 P Externship V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq fourth year veterinary medicine. Theory of practice of veterinary medicine in a non-university situation. S, F grading.

691 P Guided Preceptorship V 1 (0-3) to 4 (0-12) Prereq fourth year veterinary medicine. Guided preceptorship in an accepted extramural clinical or laboratory setting. S, F grading.

692 P Government, Corporate, and Zoological Practice Elective V 1 (0-3) to 6 (0-18) May be repeated for credit; cumulative maximum 10 hours. Prereq fourth year veterinary medicine. Elective experience in government, corporate, and zoological veterinary medicine arranged through nationwide matching program. S, F grading.

693 P Laboratory Animal Medicine V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Elective clinical and laboratory experience with major research facilities such as the Department of Comparative Medicine, University of Washington. S, F grading.

694 P Avian Medicine 4 (0-12) Prereq fourth year veterinary medicine. Laboratory diagnosis and pathology of avian (pet bird and commercial fowl) diseases. S, F grading.

699 P Advanced Clinical Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year veterinary medicine. Advanced clinical subjects developed as courses for fourth year veterinary students. S, F grading.

Department of Veterinary and Comparative Anatomy, Pharmacology, and Physiology

www.vetmed.wsu.edu/depts-vcapp/
Wegner 205
509-335-0986


413 Advanced Anatomy 3 (1-6) Prereq V M 512P. Microscopic and gross anatomy of selected organs. May be repeated for credit; cumulative maximum 6 hours.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

513 Advanced Neuroanatomy 4 Prereq anatomy or physiology course that included neuroanatomy. Advanced gross and microscopic anatomy of the mammalian central nervous system. Cooperative course taught by WSU, open to UI students (Zool 513).

592 Seminar 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592).

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

Veterinary Physiology and Pharmacology Courses

V Ph

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

505 Principles of Life Science Research 1 Prereq by permission only. Seminars/discussions of practical issues confronting life science researchers with emphasis and overviews of disciplines related to biomedical research. S, F grading.

505 Design and Analysis of Biomedical Experiments 4 Prereq Math 107, statistics course. Design of experiments with application to clinical and basic biomedical research; choosing, applying, and evaluating appropriate data analysis methods.

529 Integrative Neuroscience 3 Prereq biochemistry course. Basic biochemical processes in the nervous system and their significance for normal and abnormal function. Cooperative course taught by WSU, open to UI students.

531 Neuroscience Laboratory Rotation 1 (0-3) Prereq graduate standing. Ten-week rotation through each of three research laboratories; learning procedures and techniques in neuroscience. May be repeated for credit; cumulative maximum 2 hours. S, F grading.

541 Biochemistry 3 Prereq Chem 346. Intermediate biochemistry; introduction to metabolism and the chemical and physical properties of biomolecules. Cooperative course taught by UI (MMBB 541), open to WSU students.

542 Biochemistry 3 Prereq Chem 346. Intermediate biochemistry; introduction to metabolism and the chemical and physical properties of biomolecules. Cooperative course taught by UI (MMBB 542), open to WSU students.

555 General and Cellular Physiology 4 (3-3) Prereq cell physiology or genetics course. Physiological mechanisms of cellular function.

Description of Courses

Veterinary Anatomy Courses

V An

592 Research Seminar 2 Concepts and controversies within a specific and highly focused domain of physiological research; research presentation. May be repeated for credit; cumulative maximum 4 hours. S, F grading.

592 Seminar in Clinical Medicine 1 May be repeated for credit.

583 Advanced Anesthesiology 2 Prereq DVM degree. Advanced veterinary anesthesiology as applied to clinical practice.

584 Comparative Theriogenology 1 Prereq DVM degree. Lectures from WSU College of Veterinary Medicine and Department of Animal Sciences and from UI Department of Animal and Veterinary Science.

585 Selected Topics in Advanced Clinical Neurology 1 or 2 May be repeated for credit; cumulative maximum 10 hours. Prereq DVM degree. Advanced veterinary neurology as applied to clinical practice.

587 Hospital Rotation 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Supervised practical experience in all service areas of the veterinary hospital. Cooperative course taught by WSU, open to UI students (VS 587).

589 Advanced Clinical Veterinary Medicine V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Special topics.

591 Advanced Clinical Diagnosis V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Advanced course in systems clinical and laboratory examination.

592 Seminar 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592). S, F grading.

593 Anesthesia Seminar 1 Prereq DMV degree or equivalent. Critical review of current topics in veterinary anesthesia.

594 Advanced Small Animal Surgery 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Clinical experimental techniques.

595 Advanced Laboratory Diagnosis V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Advanced clinical laboratory diagnosis and interpretation.

596 Advanced Radiology 2 (1-3) Prereq DVM degree. Advanced study in the field of veterinary radiology and radiation treatment.

597 Diagnosis and Treatment of Surgically Correctable Soft Tissue Diseases in Small Animals V 1 or 2 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM or permission. Review of recent advances in diagnosis and treatment of diseases in the field of small animal surgery.

598 Surgery Residents Seminar 1 May be repeated for credit. Prereq DVM degree. Surgery residents’ and interns’ presentations of case reports, literature reviews and research. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

Department of Veterinary Clinical Sciences

www.vetmed.wsu.edu/depts-vcs/vcs.html

ADBF 1020

509-335-0738


Description of Courses

Veterinary Clinical Medicine and Surgery Courses

V MS

361 Agricultural Animal Health 3 Prereq one semester animal science or biological science. Introduction to basic concepts of infectious, noninfectious, and parasitic diseases of animals of agricultural and public health importance.

367 Prevention and Management of Equine Health Problems 3 Basic health care of horses with respect to good health care and recognizing and responding to disease and injury situations.

498 Nihon University Seminar 2 (1-3) Prereq forth or fifth year veterinary DVM students from Nihon University. Lectures and laboratory sessions in small animal, exotic animal, and equine veterinary medicine and surgery. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

579 Oncology Rounds Seminar 1 Prereq DVM degree. Presentation and discussion of veterinary oncology cases including imaging, pathology, clinical pathology, appropriate diagnostic steps, therapy options and potential outcomes. S/F grading.

582 Seminar in Clinical Medicine 1 May be repeated for credit.

583 Advanced Anesthesiology 2 Prereq DVM degree. Advanced veterinary anesthesiology as applied to clinical practice.

584 Comparative Theriogenology 1 Prereq DVM degree. Lectures from WSU College of Veterinary Medicine and Department of Animal Sciences and from UI Department of Animal and Veterinary Science.

585 Selected Topics in Advanced Clinical Neurology 1 or 2 May be repeated for credit; cumulative maximum 10 hours. Prereq DVM degree. Advanced veterinary neurology as applied to clinical practice.

587 Hospital Rotation 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Supervised practical experience in all service areas of the veterinary hospital. Cooperative course taught by WSU, open to UI students (VS 587).

589 Advanced Clinical Veterinary Medicine V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Special topics.

591 Advanced Clinical Diagnosis V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Advanced course in systems clinical and laboratory examination.

592 Seminar 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592). S, F grading.

593 Anesthesia Seminar 1 Prereq DMV degree or equivalent. Critical review of current topics in veterinary anesthesia.

594 Advanced Small Animal Surgery 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Clinical experimental techniques.

595 Advanced Laboratory Diagnosis V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Advanced clinical laboratory diagnosis and interpretation.

596 Advanced Radiology 2 (1-3) Prereq DVM degree. Advanced study in the field of veterinary radiology and radiation treatment.

597 Diagnosis and Treatment of Surgically Correctable Soft Tissue Diseases in Small Animals V 1 or 2 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM or permission. Review of recent advances in diagnosis and treatment of diseases in the field of small animal surgery.

598 Surgery Residents Seminar 1 May be repeated for credit. Prereq DVM degree. Surgery residents’ and interns’ presentations of case reports, literature reviews and research. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

Department of Veterinary Microbiology and Pathology

www.vetmed.wsu.edu/depts-vmp/vmp.html

Bustad 402

509-335-6030


Description of Courses

Veterinary Microbiology Courses

V Mic

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

535 Advanced Readings in Veterinary Microbiology 1 (0-3) Prereq fourth year in veterinary medicine or graduate student in Vet S. Supervised reading program which peruses publications of intermediate technical difficulty and advanced textbooks. May be repeated for credit.

536 Diagnostic Microbiologic Conference 1 (0-3) May be repeated for credit. Prereq graduate student in veterinary science. Identification of animal pathogens in clinical material.

537 Diagnosis of Viral and Rickettsial Diseases of Domestic Animals 3 (1-6) Prereq V M 534P, 535P, 546P. Clinical, pathological, and laboratory diagnosis of viral and rickettsial diseases of domestic animals.

541 Advanced Diagnostic Microbiology 1 (0-3) May be repeated for credit; cumulative maximum 8 hours. Prereq V M 534P, 535P, 536P. Microbiology laboratory for performing and interpreting virologic, serologic, and related tests for the diagnosis of animal diseases.

562 Molecular Diagnostic Microbiology 1 (0-3) May be repeated for credit; cumulative maximum 3 hours. Prereq V Mic 541 or c/. Discussion and molecular laboratory for detection and identification of infectious agents for the diagnosis of animal diseases.
572 Advanced Topics in Microbiology, Parasitology, or Immunology V 1-3 May be repeated for credit; cumulative maximum 4 hours. Advanced topics in microbiology, parasitology, or immunology presented in short-course, or workshop format.

591 Seminar in Diagnostic Microbiology 1 May be repeated for credit; cumulative maximum 8 hours. Seminar in diagnostic veterinary microbiology.

592 Advances in Immunobiology 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592).

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only, S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only, S, F grading.

**Veterinary Pathology Courses**

V Pa

499 Special Problems V 1-4 May be repeated for credit. S, F grading.

501 Case-based Learning in Veterinary Pathology 1 (0-3) to 3 (0-9) Prereq second year veterinary medicine or DVM. Principles of pathophysiology, infectious disease, laboratory diagnosis, zoonoses, and food safety learned through the development of multistep teaching cases. S, F grading.

525 Introductory Readings in Veterinary Pathology 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Supervised introductory readings of publications, books, and research proposals.

542 Advanced Diagnostic Pathology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq V M 546F. Necropsy laboratory for techniques and skills in performing and interpreting necropsy material.

543 Laboratory Animal Pathology 3 Prereq V M 559P. Pathology of principal diseases of laboratory animals. May be repeated for credit; cumulative maximum 6 hours.


545 Mechanisms of Disease 4 Prereq MBioS 440 or V M 534P, 543P. Biochemical and immunological mechanisms involved in disease processes from the comparative standpoint.

548 Introduction to Research 1 Introduction to research.

555 Research in Progress Seminar 1 May be repeated for credit; cumulative maximum 8 hours. Presentation of on-going student research project results.

569 Research Proposal 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Written preparation and oral presentation of a research proposal.

571 Advanced Topics in Pathology V 1-3 May be repeated for credit; cumulative maximum 4 hours. Advanced topics in pathology presented in short-course, or workshop format.

592 Anatomic Pathology Seminar 1 May be repeated for credit. Histopathologic description and diagnosis.

600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only, S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only, S, F grading.

**Department of Women's Studies**

Wlibarts.wsu.edu/women

Wilson 10

509-335-1794

Associate Professor and Department Chair, N. Sturgeon; Assistant Professors, N. Elia, L. Heidenreich; Instructors, J. Meath, M. Sciacchitano.

Women's studies is an interdisciplinary field of research and teaching that places gender and women at the center of inquiry. Central to our consideration of gender are the ways class, race, ethnicity, nationality, sexual orientation, age, and ability shape the female and male experience. Women's studies places the social construction of gender in the context of national and international political and economic relations. The Bachelor's of Arts in Women's Studies is designed to achieve four major objectives:

1. to facilitate the understanding of continuing social change in structures and systems organized around gender, race, class, and sexuality;
2. to provide students with a systematic knowledge of the multidisciplinary scholarship about and by women in the field;
3. to enhance the qualifications of students preparing for careers in business, education, government, communications, the sciences, and social sciences, among others; and
4. to further University and societal goals of gender equality and social justice.

A Bachelor of Arts in Humanities, Social Sciences, or Liberal Arts, concentrated in Women's Studies, is available through the General Studies Program.

**Schedules of Studies**

Students must complete one American Diversity [D] course to meet the General Education Requirements (GERs). Choose one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

**WOMEN'S STUDIES DEGREE PROGRAM (120 HOURS)**

The major requires a minimum of 39 credit hours which must include W St 200, 300, 332, 410, 484, and 481 or 485.

**First Year**

**First Term**

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<td>GenEd 110 [A] (GER)</td>
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<td>Science Elective (GER)</td>
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<td>W St 200 [S,D] (GER)</td>
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**Second Term**

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<td>Biological Sciences [B] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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**Second Year**

**First Term**

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<td>Math Proficiency [N] (GER)</td>
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<td>W St Humanities Elective</td>
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**Second Term**

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<td>Prepare for Women's Studies Internship (W St 410)</td>
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**Third Year**

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>300-400-level W St Elective</td>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>W St 484 [T,D] (GER)</td>
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<tr>
<td>Elective</td>
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<td>Complete Writing Portfolio</td>
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**Second Term**

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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>W St 410</td>
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<td>W St Elective</td>
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**Fourth Year**

**First Term**

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<tr>
<td>W St 481 [M] or 485</td>
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**Second Term**

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<td>300-400-level Electives</td>
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<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Elective</td>
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</table>

1 Consult advisor.
Description of Courses

Women's Studies Courses

W St

130 [H] Masterpieces of German Literature in Translation 3 Same as Ger 130.

150 [S, D] Marital and Sexual Life Styles 3 Same as Soc 150.

200 [S, D] Introduction to Women's Studies 3 Multi-disciplinary perspectives on women and on their past, present, and potential contributions.


210 [H] Diverse Sexualities and Cultural Production 3 Introduction to US lesbian cultural production, including writing and film, within a larger socio-political context.

214 [S, D] Gender and Culture in America 3 Same as Anth 214.

216 [S, D] American Culture 3 Same as Am St 216.


230 Human Sexuality 3 Same as Psych 230.

235 [H, D] African American History 3 Same as CES 235.

255 [S, D] Chicana/o History 3 Same as CES 255.

276 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

277 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

298 [S, D] History of Women in American Society 3 Same as Hist 298.

300 [S, M] Intersections of Race, Class, Gender and Sexuality 3 Prereq CES 101, Soc 101, or W St 200. Intersections between race, class and gender through case studies; experiences in interdisciplinary methods.

301 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours.

302 [S, D] Contemporary Masculinity and Men's Issues 3 Analysis of the development of masculinity in its biological and cultural forms.

305 [S] Gender and Politics 3 Same as Pol S 305.

306 [H, M] Introduction to Literary Criticism 3 Same as Engl 308.

308 [H] Women Artists I, Middle Ages-1900 3 Same as F A 308.

309 [H] Women Writers 3 Same as Engl 309.


311 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subjects/issues relating to women.

315 [S, D] Women in Management and Leadership 3 Analysis of women's historical and contemporary role in American management.

316 [K] Gender in Cross Cultural Perspective 3 Same as Anth 316.

320 Resource Management and Problem Solving 3 Same as H D 320.

321 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subjects/issues relating to women.

324 [S, D] Psychology of Women 3 Same as Psych 324.

332 [I] Global Feminisms 3 Prereq Anth 101 or W St 200. An interdisciplinary approach to examining women's roles and experiences throughout the world and different approaches to feminism/feminisms.

335 [K] Women in Latin American History 3 Same as Hist 335.

337 [H] Women in the Ancient World 3 Same as Hist 337.

340 [I] Third World Women and Film 3 Focus on the intersections of race, gender, class, sexuality, and nation in &quot;third world&quot; women's films.

350 [S] European Women's History, 1400-1800 3 Same as Hist 350.

351 [S, D] The Family 3 Same as Soc 351.


369 Queer Identities in Contemporary Cultures 3 Prereq CES 101 or W St 200. Provides a structural critique of heteronormativity and examines L/G/B/T challenges to dominant sex and gender issues in the US.

372 [S, D] Native American Women in Traditional and Contemporary Societies 3 Same as CES 372.

380 [S] History of Medicine 3 Same as Hist 380.

382 Modern American Literature 3 Same as Engl 382.

384 [S, D] Sociology of Gender 3 Same as Soc 384.


398 [H, D] History of Women in the American West 3 Same as Hist 398.

402 Cross-Cultural Gender and Kinship 3 Prereq Anth 101 or Soc 101. Same as Anth 402.

403 [T] Violence Toward Women 3 Same as Crm J 403.


406 [T] Women and Work 3 Prereq W St 200; completion of one Tier I and three Tier II courses. Social science analysis of the relationship between women and work in contemporary American society.


408 [T, D] Introduction to Critical Race Feminism 3 Prereq completion of one Tier I and three Tier II courses; junior standing; CES 101 or W St 200. Studies structural inequalities in the US through historically grounded analysis of social systems, race, gender, and the law.


410 Internship V 1-12 Prereq W St 200; 300 or 481 with B or better, by interview only. May be repeated for credit; cumulative maximum 12 hours. Supervised experience in approved campus or community agencies or projects focusing on women's issues.


421 The Frontier and the American West 3 Same as Hist 421.

425 [T, D] Philosophy and Feminism 3 Prereq 3 hours Phil or W St 200. Same as Phil 425. Cooperative course taught jointly by WSU and UI (Phil 425).


454 [T] La Chicana in US Society 3 Same as CES 454.

460 [T] Gender, Race, and Nature in American Culture 3 Prereq W St 200 or 300; completion of one Tier I and three Tier II courses. Exploration of American culture through examination of cultural representations of nature in mainstream and environmental politics.

462 [M] Women and Ethics 3 Prereq Phil 101 or W St 200. Study of gender and feminism and their effect on contemporary ethical theories and issues. Cooperative course taught by WSU open to UI students (Phil 462).

464 Gender and the Media 3 Same as Com 464.

476 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

477 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

481 [M] Theoretical Issues in Women's Studies 3 Prereq W St 200 or 300. Introduction to the field of feminist theory, including classic interdisciplinary methods, and applications of this scholarship to contemporary women's issues.

484 [T, D] Lesbian and Gay Studies 3 Prereq Soc 101, 102, or W St 200; completion of one Tier I and three Tier II courses. Interdisciplinary exploration of issues related to gender and sexuality, explored transhistorically and cross-culturally, including race, class and age differences.

485 Theoretical Issues in Gay and Lesbian Studies 3 Prereq W St 484 or 300-400-level W St course. Theoretical construction and interpretation of sexualities, gender, and identity.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.
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Appendix—Academic Regulations

UNDERGRADUATE ADMISSION REQUIREMENTS

1. GENERAL REQUIREMENTS
(a) To be eligible for admission to Washington State University, an applicant must be a high school graduate or its equivalent, or have completed a more advanced transferable credential from a regionally accredited college or university (e.g., a transferable Associate of Arts or Associate of Science degree).
(b) The total number of new students admitted for any one semester will be based on the number of students for whom facilities can be made available.
(c) Appeal of admission decisions may be made only to the Admissions Subcommittee of the Academic Affairs Committee or their designee.
(d) Anyone seeking admittance to the Graduate School must follow procedures in the Graduate School Policies and Procedures Manual available in the Graduate School.
(e) The University reserves a limited number of spaces in the incoming class for the admission of students with extraordinary talents. Refer to the admission of students with extraordinary talents component of the Admissions policies section of the university catalog.

2. FRESHMAN REQUIREMENTS. Freshman applicants are considered for admission based on required high school courses completed, grade point average and the results of the Washington Pre-College Test (WPCT), if taken prior to June 1, 1989, Scholastic Aptitude Test (SAT), or the American College Test (ACT), and personal statement. On the basis of these criteria, the most qualified applicants are offered admission.

Applicants are required to submit a high school transcript showing completion of the following:

- **English:** Four years (including at least one year each of composition and literature).
- **Mathematics:** Three years (one year of geometry and two years of algebra including an introductory component of trigonometry).
- **Science:** Two years (including at least one year of laboratory).
- **Social Science:** Three years (including at least one year of history).
- **World Language:** Two years of a single language (or approved sign language) other than English.
- **Fine Arts:** One year of fine, visual, or performing arts, or one additional year of academic elective.

Applicants from unaccredited high schools may be required to pass validating examinations.

ADVANCED STANDING (Transfer Applicants)

4. TRANSFER REQUIREMENTS
(a) Applicants who have completed a transferable Associate’s degree from a regionally accredited post-secondary institution will be admitted as space allows.
(b) Applicants without a transferable Associate’s degree, but with at least 27 semester (40 quarter) hours of transferable credit from a regionally accredited post-secondary institution normally will be admitted as space allows provided they have at least a 2.5 cumulative grade point average. Applicants whose cumulative grade point average is lower than a 2.5 will have their academic record reviewed more comprehensively to determine admission eligibility.
(c) Applicants with fewer than 27 semester (40 quarter) hours of transferable credit will be considered for admission if they also meet the freshman requirements. Applicants whose cumulative transfer grade point average is lower than a 2.5 will have their academic record reviewed more comprehensively to determine admission eligibility.
(d) In evaluating admission credentials of students with transfer work whose cumulative transfer grade point average is below 2.00, all of the post-secondary transfer credit from a previous institution may be disregarded, provided the work was completed not less than four years before the time of enrollment at Washington State University. Application of this policy is contingent upon the evidence of extenuating circumstances that present a significant probability of future academic success. The Faculty Admissions Subcommittee or its designee in the Office of Admissions will consider these admission requests. After the student has completed 15 semester hours of satisfactory work at WSU, the student may petition to restore the credits previously withheld. All credit earned in courses graded C or better will be considered for restoration and, if approved, only the courses and credit (not grades or grade points) will be restored.

6. TRANSFER CREDIT. (See Rule 114)
(a) Colleges and universities must be regionally accredited for transfer credit to be awarded.
(b) Ninety semester hours shall be the maximum allowed by transfer toward a four-year degree, and 120 semester hours shall be the maximum amount allowed by transfer toward a five-year degree.
(c) The maximum combined lower-division transfer credit allowed from regionally accredited institutions CLEP (College Level Examination Program), AP (Advanced Placement), IB (International Baccalaureate), and military credit shall be 73 semester hours toward a baccalaureate degree irrespective of when those hours were earned.
(d) Two full years of credit and completion of lower-division General Education Requirements normally will be granted to students who have been awarded the Direct Transfer Associate (AA) degree from a Washington community college. The Associate of Arts—Oregon transfer degree from an Oregon community college guarantees completion of the lower-division General Education Requirements, but does not guarantee junior standing or 60 semester credits. Certain approved Associate’s degrees from Arizona, California, Hawaii, and Idaho may also be considered to have fulfilled the lower division GERs for graduation, but do not guarantee junior status (60 semester credits). For details on specific degrees consult the Office of Admissions.
(e) Students who have completed at least 70 transferable quarter credit hours toward completion of an approved AA degree may complete the Direct Transfer Associate (AA) degrees from a Washington or Oregon two-year college after their initial enrollment at WSU.
(f) Students who have completed the Associate of Science Transfer Degree (AST) from a Washington Community College will receive the same priority consideration for admission to the baccalaureate institution as they would for completing the direct transfer associate degree and will be given junior status. Additional general education, cultural diversity, and world language requirements, as required by Washington State University, must be met prior to the completion of a baccalaureate degree. Students are responsible for checking specific major requirements in the year prior to transferring.
(g) Completion of lower-division General Education Requirements will be granted to students, who have completed all of the lower-division General Education Requirements at another regionally accredited Washington baccalaureate institution, provided the sending institution so certifies.

9. GRADE POINTS REQUIRED. Students entering with advanced standing must earn twice as many grade points for graduation as the number of hours which they have enrolled in this or any other institution.

14. CREDIT FROM NON-ACCREDITED INSTITUTIONS. Special examinations for advanced standing credit for work done in non-accredited institutions will be allowed only by permission of the Admissions Subcommittee.

15. CREDIT BY EXAMINATIONS. Subject to standards established in consultation with academic departments concerned, credit may be granted to entering or enrolled undergraduate students via various means including external examinations, institutional examinations, and approved military service schools. WSU does not accept credit by exam granted by other institutions.

Credits
by examination shall yield no grade points. Such credits may partially fulfill General Education Requirements for graduation. External examinations will include but not be limited to:

Advanced Placement (AP) Program examinations of the College Entrance Examinations Board; and subject College Level Examination Program (CLEP); and the Washington Pre-College Test Program (WPTC).

(a) Advanced Placement Program. Credit for AP examinations will be granted in an amount equal to the 100-200-level course or courses in the particular discipline tested, as approved by the specific academic department. The acceptable score for receiving credit is published in the catalog for the year in which the AP examination is taken.

(b) College Level Examination Program (CLEP)

(1) Students with university junior standing (60 semester credits or more) are not eligible for credit through CLEP examinations. Contact the Office of Admissions for specifics.

(2) General and Subject Examinations. Credit for CLEP will be granted if the examination is passed with scores established by the department concerned in consultation with the Director of Admission. Credit will be granted for courses in which they are not registered. Students may not take challenge examinations in courses which they have audited, or in which they have received a final grade. Upper-division students may not receive credit by challenge examination in lower-division courses in their major field. Undergraduate students may not receive credit by challenge examination in any course prerequisite to a course in which they are enrolled or have received a final grade. The maximum credit for challenge examinations is 30 semester hours unless permission is obtained from the student's academic dean. The fee for all challenge petitions is $244 per course.

(d) Military Credit. Credit will be granted for satisfactory completion of:

(1) Military service schools in the amount recommended by the American Council of Education in the publication, Guide to the Evaluation of Educational Experiences in the Armed Forces.

(2) United States Armed Forces Institute correspondence courses (under the rules applicable to other correspondence work).

(3) Danes Credit: Elective credit for DANES Subject Standardized Tests (DSSTs) will be granted for college-level academic subjects (non-vocational/technical courses) using the minimum score and credit amount recommendations of the American Council and Education.

(e) Peace Corps and Volunteers in Service to America (VISTA) Credit for training in the Peace Corps or VISTA will be granted for having completed specific courses, under regular catalog course numbers, as shown on a regular transcript from an accredited college or university.

(f) Other Test Programs. Credit for other testing programs such as the Washington Pre-College Test Program and WSU departmental placement examinations will be granted in accordance with policies established by the university and academic departments.

### AUDITING CLASSES

20. PERMISSION TO AUDIT. An auditor is a class visitor permitted on a space-available basis to observe class discussions but not to take examinations or consume the instructor's time. Attendance in class beyond 3 visits requires official approval on the Request for Permit to Audit card. Students may seek permission, after the start of classes, to audit a lecture course by securing the approval of the class instructor. Those wishing to audit or change from credit to audit must pay the appropriate fee and submit the signed audit card to the Office of the Registrar before the end of the fourth week of instruction in the semester. An enrollment change from audit to credit is limited to the first two weeks of instruction. A maximum of two audits are allowed for any semester or term. A registration fee per audit hour is charged for any semester or term for other than regularly enrolled full-fee-paying students. Senior citizens are exempt from this fee under the provisions of RCW 28B.15.540, provided the prescribed eligibility requirements are met. Personnel who have received authorization for the faculty/staff fee waiver are exempt from the audit fee up to 6 hours (including audits) in any one semester or 4 hours (including audits) in the summer session. Said limitation includes any combination of credit and audit hours. Audit fee is non-refundable.

21. NO CREDIT FOR AUDITING. No university credit will be allowed for auditing courses, nor may students apply for or take special examinations for university credit in courses which they have audited. Students may not take challenge examinations (see Rule 15c) in courses they have audited. (Audit enrollments will be recorded on the student's permanent record by listing the departmental prefix, course number and the statement, "OFFICIAL AUDIT NO CREDIT.")

23. MAKE-UP HOURS FOR UNIVERSITY HOLIDAYS. The presence of our one-day holidays in the academic calendar leads to fewer days of instruction for certain classes. Instructors have authority to require students to make-up lecture and laboratory contact hours, including scheduling such hours on evenings and Saturdays, whenever university holidays create unequal opportunities and time demands for students enrolled in the course. The make-up hours for a given course or section must be identified in the WSU Schedule of Classes and also in the course syllabus.

### CLASS STANDING OF STUDENTS

25. CLASS STANDING. Freshman Standing—below 30 semester hours; Sophomore—30 to 59 1/2 hours; Junior Standing—60 to 89 1/2 hours; Senior Standing—90 and above hours.

### Table: AP Examinations

<table>
<thead>
<tr>
<th>AP Examination</th>
<th>Score</th>
<th>WSU Course (credits)</th>
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<tbody>
<tr>
<td>Art: Studio (Drawing)</td>
<td>3</td>
<td>Fine Arts 110 (3)</td>
</tr>
<tr>
<td>Art: Studio (General)</td>
<td>3</td>
<td>Fine Arts Elective (3)</td>
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<td>Art: History</td>
<td>3</td>
<td>Fine Arts Elective [H] (3)</td>
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<tr>
<td>Biology</td>
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<td>Biol 106, 107 (8)</td>
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<tr>
<td>Calculus AB</td>
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<td>Math 171 (4)</td>
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<td>Calculus BC</td>
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<td>Math 171, 172 (8)</td>
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<td>Chemistry</td>
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<td>Chemistry Elective [P] (3)</td>
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<td>Computer Science A</td>
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<td>Computer Science AB</td>
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<td>Economics (Micro)</td>
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<td>Econ 101 (3)</td>
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<tr>
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<td>Classics Elective (4)</td>
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<td>Physics B</td>
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<td>Physics C: Mech.</td>
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</tr>
<tr>
<td>Physics C: E + M</td>
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<td>Physics Elective (no lab) [P] (3)</td>
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<td>Psychology</td>
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<tr>
<td>Spanish Literature</td>
<td>3</td>
<td>Spanish Elective (3)</td>
</tr>
<tr>
<td>Statistics</td>
<td>3</td>
<td>Math 205 (3)</td>
</tr>
</tbody>
</table>
CREDIT

27. CREDIT DEFINITION. Academic credit is a measure of the total minimum time commitment required of a typical student in a specific course. For the WSU semester system one semester credit is assigned for a minimum of 45 hours. The expected time commitment may include: 1) time spent in scheduled course activities organized by an instructor (lectures, discussions, workbooks, videotapes, laboratories, studios, fieldwork, etc.); 2) time spent in group activities related to course requirements; and 3) time spent in reading, studying, problem solving, writing, and other preparations for the course. The minimum in-class time commitment, based on a fifteen-week semester and a traditional format, should follow these guidelines: 1) lecture—one hour of lecture per week for each credit hour; 2) laboratory—three hours of laboratory per week for each credit hour; 3) studio—two hours of studio work per week for each credit hour; 4) ensemble-four hours of ensemble work per week for each credit hour. The minimum time commitment for independent study is three hours of work per week for each credit hour. Courses taught in different time frames than the fifteen-week semester or in a different format need to define how the time commitment leads to the achievement of stated course goals. Achievement of course goals may require more than the minimum time commitment.

28. HIGH SCHOOL STUDENTS. High school students may enroll at Washington State University provided they are admitted to the university and pay the appropriate fees. Such enrollments may be for high school or university credit or both. For fall and spring semesters, all eligible high school students enroll through Running Start. For Summer Session, special fees may apply.

29. WORK FROM HIGH SCHOOLS, BUSINESS COLLEGES, AND COLLEGES AND UNIVERSITIES WITHOUT REGIONAL ACCREDITATION. No university credit shall be given for work from high schools, business colleges, or colleges and universities without regional accreditation.

31. CREDIT TO HIGH SCHOOL STUDENTS FOR COURSES COMPLETED PRIOR TO HIGH SCHOOL GRADUATION. Washington State University encourages students to complete rigorous college preparatory courses in high school, or to take college courses while in high school if they have adequate preparation. In some cases college credit may be awarded when consistent with the following criteria:
   (a) High School Courses: Some high schools may offer instruction at the college level, and when consistent with university and academic department policies, college credit will be awarded if student achievement is validated by an approved national examination such as Advanced Placement or International Baccalaureate, or a review or examination administered by the university.
   (b) Running Start Program:
      (1) Credit will be awarded for college courses taken prior to high school graduation when such courses are completed through the state of Washington's Running Start Program.
      (2) Courses offered by Washington State University to high school students participating in Running Start will have an enrollment of at least seventy percent of regularly admitted students in each course section.
   (c) Other Courses: College credit may be awarded for courses taken in high school when consistent with the following conditions:
      (1) The course must also be currently available on the campus of the regionally accredited college or university and must be listed in the college or university catalog. The course, regardless of setting, must use the college or university curriculum.
      (2) Students interested in credit must register and pay fees at the beginning of the term and would be subject to the same grading and tuition refund policies as students on the campus of the regionally accredited college or university.
      (3) The faculty teaching the course in high school must carry a regular or adjunct faculty appointment at the regionally accredited college or university.
      (4) The students taking the course in the high school must be assessed and graded in the same manner as students taking the course on the campus of the regionally accredited college or university. Student work, whether completed for the course offered on-campus or at the high school, must be graded and evaluated by the same standards.

34. REPEAT COURSES. Students may ONLY repeat a course in which they have received a grade of C- or below, a withdrawal (W), or when a course may be repeated for additional credit. Students may enroll more than once in the same course in any given term (fall, spring, or summer) provided that the particular periods of enrollment do not overlap and that other conditions for allowed repeats are met.
   a. Repeating courses graded C- or below. To improve the cumulative or resident grade point average, a student may only repeat courses in which a C- or below was received. When such a course is repeated, only the last grade contributes to the grade point average and total hours earned. Students may only repeat a course graded C- or below one time at WSU during fall or spring semesters. Additional repeats are allowed from another institution or at WSU during summer terms or by special permission of the academic unit offering the course. However, the series of repeats and grades is retained on the student’s academic record.
      1. Only courses identified as acceptable equivalents according to the appropriate department, the Transfer Guide, or the Admissions Office are treated as repeats. If courses deemed equivalent in content differ in credit hours, the credit hours of the repeat course supersede the credit hours of the original course.
      2. Once a student has graduated from WSU, repeated courses cannot change the pre-degree transcript.
   b. Repeating for additional credit.
      1. Some courses have been approved for repeat credit, i.e., the student may re-enroll in the course during a subsequent semester and credit may be accumulated. Such courses are designated in the WSU catalog as “May be repeated for credit” and will list the maximum credit limitation.
      2. Courses which have been approved for repeat credit, such as topics, may offer multiple sections of a course during any one semester. Students may enroll in more than one section of these courses in any one term provided that the specified particular topics and titles differ; the repeat credit approval applies only to re-enrollment in a subsequent semester.

UNDERGRADUATE ACADEMIC DEFICIENCY

35. Washington State University expects students to maintain academic standards of excellence and make satisfactory academic progress toward their degree objectives. Undergraduate students are in good academic standing if both their current WSU semester and cumulative grade point averages are 2.00 or above. Students not meeting the criteria above are considered academically deficient.

36. All WSU academic deficiency policies apply even when a student is in good academic standing.

37. An undergraduate (undeclared or certified major) student, regardless of his/her cumulative grade point average, but whose grade point average in each of the last two semesters is below 2.00 will be considered deficient and will be dismissed from the university. For process see Rule 40.

38. As a condition of continued enrollment, an undergraduate (undeclared or certified major) who at the end of any semester has failed to maintain a 2.00 cumulative grade point average and who is thus considered academically deficient must complete an interview scheduled through the Student Advising and Learning Center. A certified major who has been interviewed by SALC may be decertified by the department.

39. An undergraduate student who, at the end of any two consecutive or any total of 3 semesters, has failed to maintain a 2.00 cumulative grade point average will be dismissed from the university. For process see Rule 40.

40. Students who are dismissed from the University are required to remain out of WSU for at least one academic year. Dismissed students, including certified majors, may apply for reinstatement early by applying to a Review Board administered by the Student Advising and Learning Center. Early reinstatement will be granted only when extenuating circumstances are present. In all cases, written documentation to support the application for early reinstatement is required. Declarations of good intentions are not sufficient. Students seeking future reinstatement after the year away from WSU must provide, as part of the application for readmission, additional documentation to the Student Advising and Learning Center that demonstrates improved academic performance at the college level and a readiness for academic success at WSU.
41. An undergraduate student who has been reinstated after becoming deficient under Rules 37 or 39 or is enrolled under 38 will be on academic probation for one semester. The specific conditions of enrollment for students who are on official probation will be determined by the interviewer or a Review Board. Students on probation who fail to comply with the conditions of their probationary enrollment will be dismissed from the University.

42. Students enrolled in professional programs (e.g., clinical courses in nursing) that involve human health care may be subject to more stringent requirements in grading, repeating course work, and retention provided the more stringent requirements are approved through Faculty Senate channels and are published and are made available to students prior to certification. Students are referred to the nursing and pharmacy offices for specific requirements.

43. Former WSU students, dismissed under any academic deficiency rule, who have not been enrolled at WSU for four years or more may request at the time that they apply for reinstatement that all previous WSU work be disregarded. This includes all credits and grade points earned. The student’s transcript will be marked to indicate that the previous work is not considered as credit earned. After completion of 15 semester hours of course work with a cumulative grade point average of 2.0 or higher at WSU, the student may petition to restore credits earned in courses graded C or better. If approved, only the courses and credit, not grades or grade points, will be restored. Requests for reinstatement and petitions for credit restoration for former WSU students will be considered by the Academic Advising and Reinstatement Subcommittee or its designee in the Student Advising and Learning Center.

CONDUCT

45. Washington State University is guided by a commitment to excellence embodied in a set of core values. The University aims to create an environment that cultivates individual virtues and institutional integrity in the community. The mission of the University is supported when students uphold and take responsibility for the full scope of these values. The University’s core values are embodied in a set of core values. The University aims to create an environment that cultivates individual virtues and institutional integrity in the community.

ENROLLMENT, REGISTRATION, DROPPING COURSES, AND WITHDRAWALS

47. PLACEMENT TESTS. All students will be required to take the regulation placement tests as a prerequisite to enrollment in appropriate courses.

50. PASS, FAIL GRADING OPTIONS. Pass, fail options are available for undergraduates and graduate students. The advisor’s approval is required for undergraduates. No courses designated as meeting General Education Requirements for Graduation may be taken pass, fail by any undergraduate. No more than two courses may be taken on a pass, fail basis during any given semester. Two courses is the limit for summer session.

54. MINOR OR SECOND MAJOR. A student who has completed 60 semester hours and is certified in a major may petition for exceptions to a academic calendar requirements, a student may certify in an academic major with the approval of the appropriate academic department, program, or school, and upon notification to the Student Advising and Learning Center. Departments, programs, or schools may require additional criteria beyond the minimum 24 hours for certification and a grade point average higher than the minimum of 2.00. Typically, students with 60 or more semester hours should be certified into a major. Consult the catalog for specific certification requirements.

55. CHANGE OF MAJOR. A student may change from one department to another only on approval of the chairpersons of the departments or deans concerned.

56. DECERTIFICATION AND RECERTIFICATION. A certified major who becomes academically deficient under Rules 37, 38 or 39 and is decertified by the major department or program will be eligible to recertify, on a space-available basis, when the cumulative and major grade point averages are at or above the minimum level required for certification into the department.

57. STUDENT PETITIONS FOR EXCEPTIONS TO ACADEMIC CALENDAR DEADLINES AND WITHDRAWAL LIMITS. Students may, with the payment of a service fee, petition for exceptions to the academic calendar deadlines (e.g., withdrawal after the deadline) or withdrawal from an individual course after the student has used the maximum number allowed. Petitions are considered only in the case of extraordinary circumstances such as a medical emergency and require supporting documentation. Undergraduate and professional students may petition through the Registrar’s Office. Graduate students may petition...
through the Graduate School. Requests for exceptions to the calendar deadlines must be made within two years of the date of enrollment in the course. Petitions for exception to the withdrawal limit must be filed by the end of the term in which the course was taken.

58. PERMISSION TO REGISTER LATE. A student may not register after the second week of any session, except with the permission of the Registrar.

61. LATE SERVICE FEE. A student who does not enroll before classes start or pay fees on or before the due date will be assessed a service charge. A charge of $100.00 will be assessed to late registrations that occur after the tenth day of classes. Late payment fees will be assessed those who pay tuition and fees after the due dates.

66. ADDING A COURSE. Students may add course enrollments only through the 5th day of the semester. (NOTE: If the course is being added pass, fail the approval of the student's faculty advisor is also required.) A student wishing to petition for an exception to the five-day deadline listed above must obtain the approval of the instructor.

67. DROPPING A COURSE. A student may drop a course without record up to the end of the 30th day of the semester in which the course is offered or according to a prorated schedule for shorter academic terms.

68. WITHDRAWAL FROM A COURSE BETWEEN THE 5TH WEEK AND THE END OF THE 9TH WEEK. A student may, with the payment of a service fee withdraw from a course between the 5th week and the end of the 9th week with a grade of W. For undergraduates who enter WSU in fall 1998 or later, the maximum number of WSU withdrawals is 6, not counting withdrawals that result from the cancellation of enrollment. For undergraduates who enter WSU in the fall 2004 or later, the maximum number of WSU withdrawals is 4, not counting withdrawals that result from the cancellation of enrollment. After the 4th or 6th withdrawal, a student may, in exceptional circumstances, submit a petition through the Registrar's Office for an exception to the withdrawal limit. The petition must be filed by the end of the term in which the course was taken. If an undergraduate student uses a withdrawal during the semester and then must completely cancel enrollment for the semester, the previous withdrawal will not count toward the total of 4 or 6.

69. WITHDRAWAL FROM A COURSE AFTER THE 9TH WEEK OF A SEMESTER. Withdrawal from a course after the 9th week of a semester is available under the following conditions:

(a) Withdrawal may be granted for a course if withdrawal is recommended by the Director of Health and Wellness Services as a result of illness, or the Director of Counseling Services because of documented extenuating circumstances or if withdrawal is recommended by the academic dean of the unit in which the course is taught, because of other documented extenuating circumstances.

(b) From the end of the 9th week through the last day of instruction, under-graduate students are eligible to use up to two uncontested course withdrawals during their undergraduate careers, regardless of the number of undergraduate degrees earned.

(c) The grade shall be marked W, and the service fee shall be mandatory.

(d) For undergraduates who enter WSU in fall 1998 or later, the maximum number of WSU withdrawals (including the two uncontested withdrawals) is 6, not counting withdrawals that result from the cancellation of enrollment. For undergraduates who enter WSU in fall 2004 or later, the maximum number of WSU withdrawals (including the two uncontested withdrawals) is 4, not counting withdrawals that result from the cancellation of enrollment. Only two of these withdrawals can come after the 9th week of the semester. After the 4th or 6th withdrawal, a student may, in exceptional circumstances, submit a petition through the Registrar's Office for an exception to the withdrawal limit. The petition must be filed by the end of the term in which the course was taken.

(e) If an undergraduate student uses a withdrawal during the semester and then must completely cancel enrollment for the semester, the previous withdrawal will not count toward the total of 4 or 6.

70. Cancellation of Enrollment. Students who wish to withdraw from the institution and disenroll from all of their classes initiate the cancellation through the Office of the Registrar at WSU Pullman or the Student Services Office at WSU Spokane, WSU Tri-Cities or WSU Vancouver, or through the Distance Degree Programs Office. Students seeking to cancel their enrollment after completing one or more courses may petition for an exception to the academic calendar deadlines in the event of extraordinary circumstances (see Academic Regulations 57).

(a) Students canceling their enrollment during the first four weeks of the semester will have their permanent records marked "withdrew (date)." (Individual course enrollments will not be recorded.)

(b) Students canceling their enrollment after the fourth week through the last day of instruction (end of the 15th week) will have their permanent records marked "withdrew (date)," and a grade of W will be recorded for each course enrollment.

(c) Students on academic probation during the semester of their cancellation must obtain permission of the Student Advising and Learning Center to re-enroll.

ATTENDANCE

71. ADMISSION TO CLASSES. Instructors shall not permit a student to be enrolled in a class or admit a student more than three times as a visitor without an official enrollment notice.

72. CLASS ATTENDANCE DURING THE FIRST WEEK TO ENSURE ENROLLMENT. Students who have not attended class and laboratory meetings during the first week of the semester will be dropped from the course by the department. (Students should not assume that they have been dropped without verification from the department or Registrar's Office.) Students having extenuating circumstances which prevent their attendance during the first week should notify the Office of Student Affairs. Student Affairs will notify instructors of the absence and the reason for it. Valid reasons for missing classes do not relieve the student of making up the work missed.

73. ABSENCES. Absences impede a student's academic progress and should be avoided.

(a) UNIVERSITY SPONSORED. Any student who is required to participate in off-campus, university-sponsored activities such as field trips, musical performances, judging teams, intercollegiate athletic events, etc., should obtain an official Class Absence Request form from the faculty or staff member supervising the off-campus activity. The form must contain specific information concerning the activity and date, be signed by the supervising faculty or staff member, and be submitted by the student at least one week in advance to the individual instructors of the student's classes. It is requested that a student not be penalized for absence from class provided a properly signed Class Absence Request form has been filed with the instructor prior to the absence. These university sponsored absences are subject to an instructor's attendance policy and are not intended to imply additional acceptable absences. In all instances, it is the student's responsibility to make up all work missed. Problem cases should follow the Academic Complaint Procedures, Rule 104.

(b) OTHER EXCUSED ABSENCES. Students must sometimes miss examinations or other academic obligations affecting their grades because of illness, personal crises, mandated court appearances, parental responsibilities, and the like. As long as such absences are not excessive, it is hoped that the instructor will provide and document reasonable accommodation. The instructor may require the student to submit a written explanation of the absence, but written excuses from health care personnel should not be required since these requests frequently put the health care personnel in untenable positions. A student who is dissatisfied with the instructor's accommodation may follow the Academic Complaint Procedure, Rule 104. It is recommended that the instructor explain the procedures for excused absences early in the semester, preferably in a written syllabus distributed to all students in each class. Once announced, these procedures should be scrupulously followed unless extraordinary circumstances require an exception. Students who attempt to gain advantage through abuse of this policy (e.g., by providing an instructor with false information) may be referred to the Office of Student Affairs for disciplinary action.
EXAMINATIONS

74. FINAL EXAMINATIONS WEEK. The final examination week for each fall and spring semester will span five days, from the Monday through the Friday immediately following the fifteenth week of the semester. Special examinations will be scheduled for the Saturday following the Friday of final examination week. Summer Session final exams will be confined to the designated class meeting times scheduled for the course or lab.

75. FINAL EXAMINATION SCHEDULE. The final examination schedule will be determined before the start of each semester and published in the semester schedule of classes by the Registrar based on previous enrollment for that semester. After publication, the schedule cannot be altered except as provided.

76. SCHEDULING ALL COMMON MORNING/EVENING EXAMS. Undergraduate (100-400-level) courses having an enrollment of at least two percent of the total student body or courses with multiple lecture sections may schedule no more than three examinations each semester at the periods of 7:00 to 8:00 a.m., 6:00 to 7:15 p.m. and 8:30 to 9:45 p.m., Monday through Friday, with the exception of Monday morning and Friday evening. The actual test-taking time may not exceed the regularly scheduled lecture time (50 or 75 minutes) — however, instructors may require that students arrive up to 15 minutes early to check in. If permission is to be granted for a large group exam, all sections of the course must give the exam on the same day and within the same time block unless given during the regular scheduled class time. One class lecture period shall be omitted to compensate for each hour of examination. A class lecture period lost to Labor Day, Veterans Day, Martin Luther King, Jr. Day, and/or Presidents Day holiday(s) may be counted toward this compensation for an evening exam. Proposed examination dates must be submitted to the Registrar's Office no later than the first week of each semester.

(Note: Officially approved and scheduled night examinations have priority over all other academic and non-academic evening activities.)

77. SPECIAL PERIODS FOR FINAL EXAMINATIONS. During examination week time will be allowed to large courses for special examinations of the entire group. The privilege of giving such special examinations is necessarily limited in terms of periods available for such tests. The courses having the greatest number of students will be given first opportunity to utilize the special examination periods available.

78. THREE OR MORE IN ONE DAY. During final examination week, if the scheduled arrangement results in students having three or more examinations scheduled for any one day, any one of their instructors is authorized to excuse the students from the regularly scheduled examination and give a final examination to the students during the special exams time blocks.

In cases of difficulty in arriving at a solution, students shall refer the matter to the chairpersons of their departments or to their academic advisors.

79. CLOSED WEEK. No examinations or quizzes (other than laboratory examinations, make-up examinations and make-up quizzes) may be given during the last week of instruction.

80. NO EARLY EXAMINATIONS. A student will not be granted special examinations for the purpose of leaving the institution before the close of the semester.

81. LENGTH OF EXAMINATIONS. All regular examinations in undergraduate courses during the regular fifteen weeks of instruction, except for common morning/evening examinations and take-home examinations will be confined to the designated class meeting times scheduled for lecture, studio, laboratory, independent student or ensemble. Summer Session exams will be confined to the designated class meeting times scheduled for the courses or lab.

82. ACCOMMODATIONS OF RELIGIOUS OBSERVANCES IN THE ADMINISTRATION OF EXAMINATIONS. Washington State University is committed to providing people of diverse religious backgrounds access to education. In addition, law requires reasonable accommodation of religious beliefs and practices. Because religious observances do not always conform to state and university holidays, accommodation of these religious observances may be necessary in the administration of examinations. It is the policy of the university to provide reasonable accommodation consistent with the fair, efficient and secure administration of its programs. When tests or examinations fall on days objectionable to a student because of religious beliefs, the student should contact the instructor as soon as possible. The instructor may require the student to submit a concise, written statement of the reasons for the request. If the request appears to be made in good faith, the instructor should make alternate arrangements for administration of the examination or test, considering the integrity of the testing process, and fairness to all the students. If the instructor believes the request not to be in good faith, or if the instructor and the student are unable to agree on arrangements, the student or the instructor should seek the assistance of the department chair, cognizant dean, or the Vice Provost for Academic Affairs, in that order. The student may also contact the University Ombudsman. Students should understand that fairness in the examination process is an important consideration in the educational process and that they have a duty to cooperate in making alternate arrangements.

83. ACCOMMODATION OF DISABILITIES IN THE ADMINISTRATION OF EXAMINATIONS. Washington State University is committed to providing access to education for all of its students. In addition, federal law states that academic requirements must be modified on a case-by-case basis to afford qualified students with handicaps an equal educational opportunity. The nature of certain disabilities may necessitate accommodation of these disabilities in the administration of exams. It is the policy of the university to provide reasonable accommodation consistent with the fair and secure administration of its programs.

A student with a disability who may require special accommodation should contact the Student Disability Resource Center (DRC) when he or she arrives on the WSU Pullman campus. On the branch campuses a student should contact the Office of Student Services. A file documenting the disability will be established, and an accommodation form initiated. The instructor may ask for verification of a disability when a student requests an accommodation for an examination. The Office of Student Services or DRC provides the disabled student with a disability with an accommodation form verifying a disability and specifying the appropriate testing accommodation designed to fit the individual needs of that student. If the instructor disagrees with the arrangements as presented in the form, the instructor and/or student should seek the assistance of the DRC, department chair, cognizant dean or Vice Provost for Academic Affairs, in that order. The student and instructor may also contact the University Ombudsman or Center for Human Rights.

88. PENALTY FOR ACADEMIC DISHONESTY. Cases of academic dishonesty shall be processed in accordance with the Academic Integrity Policy, as printed in the Student Handbook and the Faculty Manual and as available from the Office of Student Affairs.

89. FINAL GRADE SUBMITTAL. Final grades will be submitted to the Registrar's Office by 5:00 p.m. on the second working day after the close of finals week. (Final grades for Summer Session will be submitted to the Registrar's Office by 5:00 p.m. on the second working day following the last day of Summer Session. Departments may be requested to submit final grades for summer courses earlier than the official submission deadline to facilitate grade reporting to students.)

GRADES AND GRADE POINTS

90. GRADES AND GRADE POINTS. Washington State University uses letter grades and the four (4) point maximum grading scale. The grade A is the highest possible grade, and grades below D are considered failing. Plus (+) or minus (-) symbols are used to indicate grades that fall above or below the letter grades, but grades of A+ and D- are not used. For purposes of calculating grade points and averages, the plus (+) is equal to .3 and minus (-) equals .7 (e.g., a grade B+ is equivalent to 3.3 and A- is 3.7). A student's work is normally rated in accordance with the following definitions:

90a. A. Student work demonstrates consistently excellent scholastic performance; thorough comprehension; ability to correlate the material with other ideas, to communicate and to deal effectively with course concepts and new material; reliability in attendance and attention to assignments.

90b. B. Student work demonstrates superior scholastic performance overall, reliability in attendance, and attention to assignments; may demonstrate excellence but be less consistent than the work of an A student.
90c. C. Student work demonstrates satisfactory performance overall, as well as reliability in attendance, and attention to assignments.

90d. D. Student work demonstrates minimal, barely passing performance overall; limited knowledge of subject matter.

90e. E. Student work demonstrates unsatisfactory performance and comprehension or unfulfilled requirements. The grade is failing.

90f. S. (Satisfactory.) Grade given upon satisfactory completion of courses numbered 499, 600, 700, 702, 800, special examinations (Rule 15) and other courses duly authorized for S, F grading by the Faculty Senate. (Courses approved for S, F grading are footnoted in the Schedules of Classes.) A, S, or F grades only are used to report physical education activity grades. S, M (marginally satisfactory), F grades only are used to report grades for designated courses within the College of Veterinary Medicine. Courses approved for S, F grading may also be graded S at midterm indicating satisfactory progress.

90g. P. (Passing.) A satisfactory grade for a course taken under the pass, fail Grading Option. Instructors will turn in regular letter grades for all students enrolled in courses under the pass, fail option but grades will appear on the student's permanent record as P (Passing) or F (Failure).

90h. I. (Incomplete.) The term is used to indicate that a grade has been deferred. It is for students who for reasons beyond their control are unable to complete their work on time. It is strongly recommended that students who are granted an Incomplete limit their total number of credits to 18 credits (including credits for the Incomplete course and any new courses) during the semester when they are finishing an Incomplete. Undergraduates or graduates who receive an I grade in an undergraduate course (100-499) have up to the end of the ensuing year to complete the course, unless a shorter interval is specified by the instructor. If the incomplete is not made up during the specified time or the student repeats the course, the I is changed to an F. (See Rule 34.) Faculty are required to submit an Incomplete Grade Report (IGR) to the departmental office with every I given. The IGR must specify conditions and requirements for completing the incomplete, as well as any time limitations less than one year.

90i. W. This is the term to be used if the student has filed, in the Registrar's Office, official notice of a withdrawal from the course prior to the end of the 9th week, or withdrew passing in accordance with Rule 69, or withdrew from the university in accordance with Rule 70.

90j. X. Denotes continuing progress toward completion of special problems, research, thesis, doctoral dissertation (i.e., 499, 600, 700, 702, 800), or flexible enrollment courses; X grades are converted to S or to a letter grade upon satisfactory completion. An X grade may also be used when no final grade is reported due to instructor's illness or absence from town.

92. GRADE RECORDS. Class grade records (the records from which final grades for a given class are determined) are university records which must be maintained for five years after the end of the term. Department chairs or directors are responsible for identifying appropriate storage location, which may include the instructor's campus office. Both the chair or director or their designees and the instructor shall have ready access to these records.

93. RETENTION OF FINAL EXAMINATIONS, FINAL PROJECTS, AND FINAL PAPERS. Final examinations, final projects, and final papers are university records which must be maintained for one year after the end of the term, unless they are returned directly to the student. Department chairs or directors are responsible for identifying appropriate storage location, which may include the instructor's campus office. Both the chair or the director or their designees and the instructor shall have ready access to these final examinations, final projects, and final papers.

98. CORRECTION OF GRADE ERRORS. An instructor may not change a grade after it has been filed with the Registrar, except in the case of clerical error, which the instructor may correct by so certifying to the Registrar. Such change must be approved (signature required) by the chairperson of the department in which the course was offered. Grade corrections must be processed within one year of the end of the term for which the original grade was given. In extenuating circumstances, exceptions to the one-year limit for correction of grade errors may be considered by petition to the Registrar's Office.

99. GRADUATE STUDENT GRADES. On a program leading to an advanced degree, graduate students must attain a minimum grade point average of 3.00 on their graduate programs and a minimum grade point average of 3.00 in all 300-400-level and graduate courses. No grade below C is accepted in any course for graduate credit.

100. THE GRADE POINT SYSTEM

A provides 4.0 grade points per credit hour.
A- provides 3.7 grade points per credit hour.
B+ provides 3.3 grade points per credit hour.
B provides 3.0 grade points per credit hour.
B- provides 2.7 grade points per credit hour.
C+ provides 2.3 grade points per credit hour.
C provides 2.0 grade points per credit hour.
C- provides 1.7 grade points per credit hour.
D+ provides 1.3 grade points per credit hour.
D provides 1.0 grade points per credit hour.
F provides no credit or grade points.
(P credit given—grade points not calculated.
S credit given—grade points not calculated.
M grade given—grade points not calculated.
I provides no credit or grade points.
W provides no credit or grade points.
X provides no credit or grade points.

102. STUDENT'S SCHOLASTIC AVERAGE. A student's scholastic average is determined by adding the grade points earned in all WSU course work and dividing by the total number of hours in which the student has been enrolled at WSU, I, W, S, P, and X grades are disregarded.

103. GROUP AVERAGES. Group averages, honor rolls, eligibility lists for honors, and similar lists are calculated on the basis of grades received in the Registrar's Office by 5:00 p.m. two working days following the last day of final examinations.

104. ACADEMIC COMPLAINT PROCEDURES. Students having complaints about instruction or grading should refer them first to the instructor. If the complaint is not resolved, then the student may refer the complaint in writing to the chairperson of the department in which the course is offered by the end of the last day of the following semester (excluding summer term). The chair's decision shall be rendered within 20 business days. After the chair's decision, the student or the instructor may appeal to the Dean's Office. Complaints must be presented in writing to the dean within 20 business days of the chair's decision. The written statement should describe the complaint, indicate how it affects the individual or unit, and include the remedy sought from the dean. The death of the dean is the final step and shall be made within 20 business days. The University Ombudsman is available at any stage for advice or assistance in resolving academic complaints. At the branch campuses, the procedure is identical except that the academic area coordinator shall substitute for the department chair and the campus dean shall substitute for the college dean.

105. FINAL GRADE APPEALS PROCESS

If a chair, dean, Graduate School Dean, or ombudsman finds that a change of a final grade is warranted on the basis of academic wrongdoing, they may refer the case to the University Grade Appeals Board for review within one semester of the posting of the grade (excluding summer term). Students may not take a grade appeal directly to the Board. In the case of graduate students, the Dean of the Graduate School may refer a case to the board upon completion of the Graduate School appeal process, as published in the Graduate School Bulletin. The University Grade Appeals Board shall have jurisdiction over decisions of any faculty member and/or administrator on matters of University course grading appeals. The decision of the board is final and not subject to further appeal.

GRADUATION
the end of the junior year. The Registrar will furnish candidates with records of their grade points and the hours completed to date, and lists of major and General Education Requirements yet to be completed. The chairperson of the department is held responsible for checking all departmental requirements, including prerequisites for all courses and the courses required in other departments. A graduation fee must be paid at the time of application.

108. STUDENT RESPONSIBILITY FOR GRADUATION. Together with the advisor, the student plans the program of study each semester. However, the written curriculum requirements described in the bulletin and catalog supplements are binding, and no advisor may waive or alter them. The student has the ultimate responsibility for meeting university, college and departmental graduation requirements.

109. PETITIONS FOR UNDERGRADUATE GRADUATION REQUIREMENTS. Students may petition for a change in graduation requirements or by obtaining the signatures of their department chairperson or director and dean on the appropriate form available in the undergraduate degree office of the Registrar's Office.

114. REQUIREMENTS FOR UNDERGRADUATE DEGREES
(a) The four-year degree (BA, BS, B FA, B Lib A, B Mus):
1. Meet the General Education Requirements for Graduation.
2. Earn twice as many grade points as the number of hours enrolled in graded course work, in this or any institution for which a grade has been received.
3. Earn twice as many grade points in the major subject as the number of hours enrolled graded course work in that major subject at Washington State University.
4. Complete any of the four-year programs.
5. Complete the senior year under the direction of the college in which the degree is to be granted. If any portion of the final year's work is to be completed at another institution, advance approval must be obtained, in writing, from both the department chairperson and the dean of the college.
6. Earn a minimum of 120 semester hours of credit, no more than 8 of which may be PEACT (Physical Education Activity) courses. (At least 30 must be WSU hours; see Rule 6.)
7. Earn a minimum of 40 semester hours of credit in 300-400-level courses; 500-level courses will count toward the 300-400-level requirement, but an undergraduate may not be required to enroll in or complete a 500-level course as a requirement for the baccalaureate degree.
8. The award of a degree is conditioned upon the student's good standing in the university and satisfaction of all University graduation requirements. “Good standing” means the student has resolved any unpaid fees or acts of academic or behavioral misconduct, and complied with all sanctions imposed as a result of the misconduct. The University shall deny the award of a degree if the student is dismissed from the University based on his or her misconduct. (See Rule 45 and the Standards of Conduct for Students.)
(b) The five-year degree (B Arch, BS Cat M, B Phar):
1. Meet requirements 1, 2, 3, and 7 listed under (a) above.
2. Complete any of the five-year programs.
3. Complete the fifth year under the direction of the college in which the degree is to be granted. If any portion of the final year's work is to be completed at another institution, advance approval must be obtained in writing, from both the department chairperson and the dean of the college.
4. Earn a minimum of 150 semester hours of credit, no more than 10 of which may be from PEACT (Physical Education Activity) courses. (See Rule 6.)

115. REQUIREMENTS FOR THE DOCTOR OF VETERINARY MEDICINE DEGREE (DVM)
(a) Complete the four-year professional program.
(b) Earn a baccalaureate degree from an accredited institution.
(c) Earn twice as many grade points as the number of graded hours required in the professional program.

116. REQUIREMENTS FOR MASTER'S DEGREES
(a) Spend not less than the equivalent of two semesters in residence (except for external programs approved by the Graduate Studies Committee).
(b) Earn not less than 30 semester hours of credit with a minimum of 21 semester hours of course work for a thesis degree program or 26 semester hours of course work for a nonthesis degree program.
(c) Earn a minimum grade point average of 3.00 on a graduate program in all upper-division and graduate course work completed for the master's degree.
(d) Earn a minimum grade point average of 3.00 for all course work taken as a graduate student.
(e) Successfully complete graduate examinations.

117. REQUIREMENTS FOR DOCTOR'S DEGREES
(a) Spend not less than six semesters beyond the baccalaureate degree at least four of which must be at Washington State University.
(b) Spend not less than a minimum of two consecutive semesters in residence at Washington State University.
(c) Earn not less than 72 semester credit hours beyond the baccalaureate degree to include a minimum of 34 semester hours for the Doctor of Arts degree and 42 semester hours for the Doctor of Education degree) of 400- and 500-level course work listed in the Graduate Study Bulletin.
(d) Earn a minimum grade point average of 3.00 on a graduate program and in all 300-400-level and graduate course work completed for the doctor's degree.
(e) Earn a minimum grade point average of 3.00 for all course work taken as a graduate student.
(f) Successfully complete graduate examinations.

118. TWO OR MORE BACHELOR'S DEGREES FROM WSU. One four-year undergraduate degree requires a minimum of 120 semester hours. For each additional bachelor's degree, the student must complete an additional 30 semester hours and satisfy all requirements of the second degree program.

121. SUMMER SESSION CREDITS. Credit earned during summer sessions may be applied toward the fulfillment of requirements for baccalaureate and advanced degrees in the same manner and subject to the same rules as credit earned during semesters of regular academic years.

123. LIMIT ON FLEXIBLE ENROLLMENT CREDIT. A student working for a degree at Washington State University shall be limited on flexible enrollment course credit to not more than 25% of the total hours required for any undergraduate degree.

125. DATE OF GRADUATION. Students will be recommended for their degrees at the end of the semester or term in which they complete their requirements. Diplomas will be dated the Saturday following the last day of final examination week for the fall semester, the day of commencement for the spring semester, and the Saturday following the last day of instruction for summer session.

HONORS
Honor rolls and lists are calculated on the basis of grades received by 5:00 p.m. two working days following the last day of final examinations. (See Rule 103.)

133. PRESIDENT'S HONOR ROLL. An undergraduate will be named to the President's Honor Roll under either of the following conditions:
(a) By achieving an overall grade point of 3.75 while enrolled in at least 9 graded hours in a single semester at Washington State University.
(b) By achieving a cumulative grade point average of 3.50 based on at least 15 cumulative hours of graded work at Washington State University.

137. RECOGNITION FOR SELECTED BACCALAUREATE DEGREE CANDIDATES. Candidates for baccalaureate degrees who have completed at least 30 hours of graded work (grades in which grade points are awarded) at Washington State University will graduate summa cum laude if the cumulative grade point average for work completed at Washington State University is 3.90 or better, will graduate magna cum laude if the minimum cumulative grade point average is 3.70 but less than 3.90, and will graduate cum laude if the minimum cumulative grade point average is 3.50 but less than 3.70.

The appropriate Latin phrase will be printed on the diploma and on the final
transcript. Qualified students electing to participate in the Honors College who complete its requirements satisfactorily, regardless of whether they qualify to graduate summa cum laude, magna cum laude, or cum laude, will receive a certificate of completion and a printed notation on the final transcript.

Computation of graduation honors will be done prior to the end of the final semester to allow for publication of the appropriate honors in advance of graduation. However, following the student's final semester, the Registrar will recompute the student's GPA including the last semester's work, and only this computation will determine official graduation honors.

Washington State University and its various colleges reserve the right to change the rules regulating admission to, instruction in, and graduation from Washington State University and any other regulations affecting the student body. Such regulations shall go into effect whenever the proper authorities may determine and shall apply to prospective students and to those who may at that time be enrolled.

SOLICITING

150. No agent, solicitor, or university individual or group shall be permitted to canvass or solicit faculty members during office hours in the interests of business, charity, or any other purpose not directly connected with university interest or official duties.
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Washington State University is located in Pullman, 80 miles south of Spokane and 285 miles east of Seattle.