Washington State University subscribes to the principles and laws of the state of Washington and the federal government, including applicable Executive Orders, pertaining to civil rights, equal opportunity, and affirmative action. Washington State University policy prohibits discrimination on the basis of race, sex, including sexual harassment, religion, age, color, creed, national or ethnic origin, physical, mental, or sensory disability, marital status, sexual orientation, and status as a Vietnam-era or disabled veteran in the recruitment and admission of students, the recruitment, employment, and retention of faculty and staff, and the operation of all University programs, activities, and services. Evidence of practices which are inconsistent with this policy should be reported to the Director, Center for Human Rights, (1022) French Administration Building, Room 225, 509-335-8288.

For further information, write to:
Office of the Registrar
PO Box 641035
Pullman, WA 99164-1035
509-335-5346

For directory assistance, call:
509-335-3564

Alternate formats of this and any other Registrar's Office publication are available upon request for persons with disabilities. Please contact the Registrar's Office by calling 509-335-5346 or by writing to Registrar's Office, PO Box 641035, Pullman, WA 99164-1035.

Washington State University's academic programs of study are approved by the Higher Education Coordinating Board's State Approving Agency (HECB/SAA) for the enrollment of persons eligible to receive benefits under Title 38 and Title 10, U.S. Code.
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The WSU faculty listing may be found online at catalog.wsu.edu.
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 iv-48

The general information section provides you with information about admissions, student services, financial aid, and housing, to name a few.

✓ General Education Requirements and Courses 49-56

It is particularly important to understand WSU’s General Education Requirements (GERs), since you must fulfill them in order to graduate. The General Education section lists all courses which fulfill particular GERs. Vancouver students follow GER requirements described under the Vancouver Campus section of this catalog.

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.

✓ Departments, Requirements, and Courses 59-313

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 College 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 Course Descriptions

Below are examples of course descriptions with definitions for each part. Important! Prerequisites will be listed if there are courses you need to take before you enroll in any particular class.

In the first example, the course prefix, “Biol”, is followed by the course number, and then by “[B]”, which indicates that this course is a biological science GER course. The credit hours are shown next. This is a 4-credit course, with three hours in lecture and three hours in lab each week. Next are the prerequisites required for enrolling in the course; “c//” indicates that you may take chemistry at the same time you take Biol 107.

Biol

107 [B] Introductory Biology 4 (3-3) Prereq one semester of chemistry or c//. First semester of a one-year sequence for science majors. Continuation of Biol 106. Cellular and molecular biology including genetics. Students may not take 106 and/or 107 for credit and also receive credit for 102, 101, and/or 105 (or vice versa).

In the second example, this “Topics” course indicates that the subject matter for the class will change each term and that the class may be repeated for additional credit. The course is also a variable credit class and 3 - 6 credits may be offered or taken each term.

Anth

395 Topics in Anthropology V 3-6 May be repeated for credit; cumulative maximum 6 hours. Prereq junior standing. Examination of selected topics in contemporary anthropological theory and practice.

✓ Understanding the Schedule of Studies

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

First Year

(1) First Semester Hours
Arts & Humanities [H,G] (GER)* 3
Degree Program Course1 3
(2) 
Foreign Language, if necessary, or Elective* 4
Math Proficiency [N] (GER) 3 or 4
Tier I Science [Q] (GER) 3

(1) You are required to take a certain number of General Education Requirements from different areas. In this case, you need to choose an Arts & Humanities course. Here you have a choice of any course that is designated with an [H] or a [G] from the catalog. 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. A complete list of all GER courses can be found under the General Education section of this catalog.

(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.

Many departments allow you to take the required courses in a different order. Your advisor can tell you how much flexibility you have in rearranging the courses that are required for your degree.
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 Current Students homepage: www.wsu.edu/current-students, then click on myWSU, then click on Academics and then click on Register & Plan. 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 DARS 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 website.

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 PROSPECTIVE TRANSFER STUDENTS

Student Advising and Learning Center Transfer Center
Lighty Student Services Building, Room 260
PO Box 641064
Pullman, WA 99164-1064
509-335-6000 or 800-978-7252
transfer@mail.salc.wsu.edu
salc.wsu.edu/transfer

Cougar TRACS
www.wsu.edu/transfer/TRACS

With the Cougar TRACS system on the Web, you can know from the convenience of your computer how your college credits will transfer to WSU. Track how your credits will transfer in seconds with Cougar TRACS. Log onto www.wsu.edu/transfer/TRACS to:

- Find out how your credits will transfer to meet General Education Requirements and WSU departmental requirements
- Explore different academic major requirements using “what if” scenarios
- Determine how to plan your schedule at your current college or university to fulfill WSU requirements

This innovative transfer tool enables you to plan your course of study, save it, and revisit it as your course work progresses. You can view the University, general education, and specific course requirements for any degree program offered at WSU. You can also enter your transfer course work from other schools (based on the courses in our database), then view a custom report which shows how the course work you’ve already taken applies 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.

FOR ALL STUDENTS

Transfer Course Equivalency Web Site
www.wsu.edu/advising/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 WSU course. It is provided for planning purposes only. Please note that the final authority concerning all transfer course equivalencies rests with the WSU Office of Admissions, in consultation with individual academic units.

Exploring Undergraduate Majors
academics.wsu.edu

Students seeking an undergraduate degree at WSU can select a major from more than 250 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 regional campuses, and to information about graduate programs.

WSU’s Online Catalog
catalog.wsu.edu

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

(Note: Students attending Washington State University Vancouver should refer to the Vancouver Campus section of this catalog for information on general education requirements. See catalog.wsu.edu/Catalog/Apps/GeneralInfo.ASP?SI=D25).

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

### Additional graduation requirements

#### COLLEGE OF SCIENCES

#### COLLEGE OF LIBERAL ARTS

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

**Foreign Language**
Complete 2 years high school or 1 year of college in a single 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
- 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.

#### 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**
Students must satisfy this requirement once they have earned 60 credit hours.

**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.

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

(Note: Students attending Washington State University Vancouver should refer to the Vancouver Campus section of this catalog for information on general education requirements. See catalog.wsu.edu/Catalog/Apps/GeneralInfo.asp?St=D25).

Past changes are summarized on the University Graduation Requirements page. See the General Education Program 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 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.

<table>
<thead>
<tr>
<th>Tier I: 15 semester credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Civilizations [A] GenEd 110 and 111</td>
</tr>
<tr>
<td>Written Communication [W]</td>
</tr>
<tr>
<td>Mathematics Proficiency [N]</td>
</tr>
<tr>
<td>Sciences [Q]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tier II: 22 semester credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Proficiency [W], [C]</td>
</tr>
<tr>
<td>Arts and Humanities* [H], [G]</td>
</tr>
<tr>
<td>Social Sciences* [S], [K]</td>
</tr>
<tr>
<td>Arts and Humanities/Social Sciences* [H], [G], [S], [K]</td>
</tr>
<tr>
<td>Intercultural [I], [G], [K]</td>
</tr>
<tr>
<td>Sciences* [B], [P]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tier III: 3 semester credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier III Course</td>
</tr>
<tr>
<td>American Diversity course* [D]</td>
</tr>
<tr>
<td>total hours</td>
</tr>
</tbody>
</table>

* A total of 9 hours of Arts and Humanities and Social Sciences with a minimum of 3 in either.

1 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.

2 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.

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. For more information, contact the Writing Assessment Office in CUE 305, or call 509-335-7959 or visit us at www.wsu.edu/~wassess/.
   c. All Honors College students are required to take the Honors College Writing Diagnostic for placement into Honors 298—Honors Writing and Research. The Honors College Writing Diagnostic is offered during the first and third sessions of Alive!, during a session scheduled during the Week of Welcome in conjunction with the Honors College Orientation, and in conjunction with spring semester priority registration. All students who have been admitted to WSU’s Honors College must take the Honors College Writing Diagnostic unless they have credit for a 200-level composition course from another college or university. An AP score of 4 or higher in English composition does NOT fulfill this requirement. For more information, contact the Writing Assessment Office in CUE 305, or call 509-335-7959 or visit us at www.wsu.edu/~wassess/.
   d. 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 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.juniortfolio.wsu.edu for more information.

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 must complete the University Writing Portfolio before enrolling in an [M] course.

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 and the upper-division capstone course are not lower-division requirements and therefore cannot be satisfied by the approved associate degrees.
<table>
<thead>
<tr>
<th>Academic Calendar</th>
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</thead>
<tbody>
<tr>
<td><strong>First Semester (Fall)</strong></td>
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<tr>
<td>Labor Day holiday</td>
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<tr>
<td>Midsemester grades due, 5:00 pm.</td>
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<tr>
<td>Veterans’ Day holiday</td>
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<tr>
<td>Thanksgiving Vacation</td>
</tr>
<tr>
<td>Commencement</td>
</tr>
<tr>
<td>Final Exams, Monday–Friday</td>
</tr>
<tr>
<td>Final grades due, 5:00 p.m.</td>
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<tr>
<td><strong>Second Semester (Spring)</strong></td>
</tr>
<tr>
<td>Classes begin</td>
</tr>
<tr>
<td>Martin Luther King Jr. Day holiday</td>
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<tr>
<td>Presidents’ Day holiday</td>
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<tr>
<td>Midsemester grades due, 5:00 pm.</td>
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<tr>
<td>Spring Vacation</td>
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<tr>
<td>Final Exams, Monday–Friday</td>
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<tr>
<td>Commencement</td>
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<tr>
<td>Final grades due, 5:00 p.m.</td>
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<tr>
<td><strong>Summer Session</strong></td>
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<tr>
<td>Early Session begins</td>
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<tr>
<td>Memorial Day holiday</td>
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<tr>
<td>Eight-Week Session begins</td>
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<tr>
<td>Late Six-Week Session begins</td>
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<tr>
<td>Independence Day holiday</td>
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<tr>
<td>Summer Session ends, Friday</td>
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<tr>
<td>Final grades due, 5:00 p.m.</td>
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Please note: Faculty advising and registration for continuing students will be held prior to the end of the previous term.

<table>
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<th>Specialized Accreditations</th>
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<tr>
<td>Washington State University is accredited by the Commission on Colleges of the Northwest Association of Schools and Colleges, 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.</td>
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<tr>
<td>Accrediting Commission on Education for Health Services Administration</td>
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<td>American Animal Hospital Association</td>
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<td>American Assembly of Collegiate Schools of Business: The International Association for Management Education</td>
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<td>American Association for Accreditation of Laboratory Animal Care</td>
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<td>American Association of Colleges for Teacher Education</td>
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<td>American Association of Veterinary Laboratory Diagnosticians</td>
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<td>American Chemical Society</td>
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<td>American Council for Construction Education</td>
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<td>American Council on Pharmaceutical Education</td>
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<td>American Dietetic Association</td>
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Board of Regents

French Administration Room 422
Pullman, Washington 99164-1048
509-335-6666
www.regents.wsu.edu

Governor Christine Gregoire
State of Washington
Advisory Member Ex Officio

Kenneth Alhadeff, Chair of the Board
Seattle

Connie Niva, Vice Chair of the Board
Everett

Theodor P. Baseler
Bellevue

Harold Cochran
Walla Walla

Elizabeth Cowles
Spokane

Francois X. Forgette
Kennewick

Laura Jennings
Seattle

Kyle M. Smith, Student Regent
Pullman

V. Rafael Stone
Seattle

Michael C. Worthy
Vancouver

Elson S. Floyd, Secretary

Gregory P. Royer, Treasurer
# Officers of the University

## EXECUTIVE OFFICERS

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elson S. Floyd</td>
<td>President</td>
</tr>
<tr>
<td>Robert C. Bates</td>
<td>Provost and Executive Vice President</td>
</tr>
<tr>
<td>Karl A. Boehmke</td>
<td>Executive Budget Director</td>
</tr>
<tr>
<td>Mary H. Doyle</td>
<td>Vice Provost for Administration and Chief Technology Officer</td>
</tr>
<tr>
<td>Larry G. James</td>
<td>Associate Executive Vice President</td>
</tr>
<tr>
<td>Alton L. Jamison</td>
<td>Acting Vice President for Student Affairs and Associate Vice President for Educational Development</td>
</tr>
<tr>
<td>Leonard Jessup</td>
<td>Vice President for University Development</td>
</tr>
<tr>
<td>Frances K. McSweeney</td>
<td>Vice Provost for Faculty Affairs</td>
</tr>
<tr>
<td>James N. Petersen</td>
<td>Vice Provost for Research</td>
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<tr>
<td>Gregory P. Royer</td>
<td>Vice President for Business Affairs</td>
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<tr>
<td>Sally Savage</td>
<td>Vice President for University Relations</td>
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<tr>
<td>James M. Sterk</td>
<td>Director, Intercollegiate Athletics</td>
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<tr>
<td>Michael J. Tate</td>
<td>Vice President for Equity and Diversity</td>
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## ACADEMIC DEANS AND DIRECTORS

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<thead>
<tr>
<th>Name</th>
<th>Title and Role</th>
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<tr>
<td>Warwick M. Bayly</td>
<td>College of Veterinary Medicine</td>
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<tr>
<td>Daniel J. Bernardo</td>
<td>College of Agricultural, Human, and Natural Resource Sciences</td>
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<tr>
<td>Candis S. Claiborn</td>
<td>College of Engineering and Architecture</td>
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<tr>
<td>Patricia G. Butterfield</td>
<td>College of Nursing</td>
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<tr>
<td>Linda Kirk Fox</td>
<td>WSU Extension</td>
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<tr>
<td>Howard D. Grimes</td>
<td>Graduate School</td>
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<tr>
<td>Michael D. Griswold</td>
<td>College of Sciences</td>
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<tr>
<td>Cindy S. Kaag</td>
<td>Libraries</td>
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<td>James P. Kehrer</td>
<td>College of Pharmacy</td>
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<tr>
<td>Erich J. Lear</td>
<td>College of Liberal Arts</td>
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<tr>
<td>Judy N. Mitchell</td>
<td>College of Education</td>
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<tr>
<td>Muriel K. Oaks</td>
<td>Extended University Services</td>
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<tr>
<td>Eric B. Spangenberg</td>
<td>College of Business</td>
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<tr>
<td>Mary F. Wack</td>
<td>University Honors College</td>
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## CHANCELLORS

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<th>Name</th>
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<tr>
<td>Harold A. Dengerink</td>
<td>WSU Vancouver</td>
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<tr>
<td>Vicky Carwein</td>
<td>WSU Tri-Cities</td>
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<tr>
<td>Brian Pitcher</td>
<td>WSU Spokane</td>
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## LEGAL COUNSEL

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<th>Name</th>
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<tr>
<td>Antoinette Ursich</td>
<td>Division Chief, WSU Division of State Attorney General’s Office</td>
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Washington State University

www.wsu.edu

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 more than 250 fields of study, including majors, 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 5,000 bachelor’s, master’s, professional, and doctoral degrees statewide in a typical year.

The state’s land-grant research university, Washington State University was founded in Pullman in 1890. Today, it is co-located in Pullman and Spokane with additional campuses in the Tri-Cities (Richland, Pasco, and Kennewick) and in Vancouver, across the Columbia River from Portland, Ore. Regional Learning Centers and the Distance Degree Programs offer access to WSU degrees statewide.

WSU programs in Spokane, about 80 miles north of Pullman, play an important role in the University’s educational and research mission. For example, the Intercollegiate College of Nursing/WSU College of Nursing is located in Spokane. Doctor of Pharmacy students are based in Spokane for their third and fourth professional years. Also completing their degrees in Spokane—in the Interdisciplinary Design Institute at WSU Spokane on its Riverpoint campus—are architecture, interior design, landscape architecture, and construction management students.

More than 1,300 instructional faculty members provide learning opportunities that open students’ minds to the most recent knowledge and discoveries. The chance for students to know and work closely with their teachers is a Washington State University tradition.

WSU President Elson S. Floyd says affordability, accessibility and accountability are keystones to his administration leading Washington State University. The university is committed to providing a quality educational and research experience for its undergraduate and graduate students, he said. Floyd puts high priority on WSU being a research leader and having a global presence.

Washington State University realizes the importance of research in all sectors of society. It has produced an impressive and extensive history of basic and applied research since its founding. WSU is known for research strengths in areas diverse as biotechnology, shock physics, viticulture, sleep, wood technology, computer chips, and advertising’s impact on healthy decision-making.

WSU’s research quality is reflected in the fact that seven of its faculty members have achieved the country’s highest honor for scientists and engineers as members of either the National Academy of Sciences or the National Academy of Engineering. Another quality indicator is the University’s success in increasing funding for its research efforts. Both facts support WSU’s position among the nation’s premier research institutions.

The Pullman campus serves more than 18,600 undergraduate and graduate students. (This figure includes those in the Distance Degree Programs). Statewide, WSU has more than 23,300 students.

WSU’s Pullman campus is residential in nature, with some 46 percent of the student body living in residence halls. University-owned single and family student apartments, and fraternity and sorority houses. Students enjoy a variety of cultural activities in an area that benefits from two universities. The University of Idaho is eight miles away in Moscow, Idaho.

WSU students of diverse social, economic, and ethnic backgrounds from throughout the nation and more than 90 foreign countries come together in an academic community committed to education and leadership development. Located on College Hill in Pullman, WSU’s 620-acre core campus features modern classrooms and libraries, laboratories, museums, student residences, and recreational and athletic facilities. For example, the 94,000-plus-square-foot Smith Center for Undergraduate Education includes classrooms with Internet access at every seat, a cyber café, computer labs, and much more. Students enjoy using the new Student Recreation Center and 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 Pac-10 Conference, in on-campus venues.

Degrees Granted

Accounting, MAcc
Agribusiness, BS
Agricultural Economics, PhD
Agricultural Economics and Management, BS
Agricultural and Food Systems, BS
Agriculture, MS
American Studies, BA, MA, PhD
Animal Sciences, BS, MS, PhD
Anthropology, BA, MA, PhD
Apparel, Merchandising, and Textiles, BA, MA
Applied Economics, MA
Architectural Studies, BS
Architecture, MArch, MS
Asian Studies, BA
Biochemistry, BS, MS, PhD
Bioengineering, BS
Biological and Agricultural Engineering, MS, PhD
Biology, BS, MS
Biotechnology, BS
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, DDes
Digital Technology and Culture, BA
Economics, BA, PhD
Education, BA, EdM, MA, MIT, EdD, PhD
Electrical and Computer Engineering, PhD
Electrical Engineering, BS, MS
Engineering, MS
Engineering and Technology Management, METM
Engineering Science, PhD
English, BA, MA, PhD
Entomology, MS, PhD
Environmental Engineering, MS
Environmental and Natural Resource Sciences, PhD
Environmental and Resource Economics and Management, BS
Environmental Science, BS, MS
Exercise Physiology and Metabolism, BS
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
Health Policy and Administration, MPH
History, BA, MA, PhD
Human Development, BA, MA
Hospitality Business Management, BA
Human Nutrition, MS
Humanities, BA
Individual Interdisciplinary, PhD
Integrated Cycling Systems, BS
Interior Design, BA, MA
Kinesiology, BS
Landscape Architecture, BLA, MS
Leadership and Professional Studies, BA
Liberal Arts, BLibA
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, BMus, MA
Natural Resource Management, BS
Natural Resource Sciences, BS, MS
Natural Resources, MS
Neuroscience, BS, MS, PhD
Nursing, BS, MNurs
Nutrition, PhD
Pharmacology and Toxicology, MS, PhD
Pharmacy, PharmD
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
Public Health, MPH
Public Policy, MS
Public Policy and Administration, MS
Public Policy and Management, MA
Public Policy and Management, MPH
Public Policy, MS, PhD
Public Policy and Management, MS
Research, MS
Rural 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 (including over 2 million book volumes), is an integral part of WSU’s educational resources. The libraries receive approximately 30,000 serial publications, including scientific, scholarly, and specialized journals and periodicals; regional and national newspapers; foreign, federal, state, and municipal documents; United Nations publications; and other materials in a variety of print, electronic, multimedia, and micro-formats.

The libraries’ online catalog, Griffin, provides access to information on books, journals, documents, media materials, and select electronic resources available through the libraries. Summit, a joint catalog that WSU shares with 34 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 reference service 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 and Terrell Libraries provide extensive collections in the social sciences, business, fine arts, and the humanities, as well as sophisticated service components designed to assist students, faculty, and researchers in utilizing these resources. Manuscripts, Archives, and Special Collections contain rich collections of primary resource materials including books, manuscripts, and photographs to support study and research in a number of fields, including Pacific Northwest history, modern British literature, regional publishing, veterinary history, agricultural history, wildlife and outdoor recreation, WSU history, and other subjects. Media Materials and Reserves houses equipment and provides videotapes, 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, Pitzer Classic Radio Tapes, and others.

Owen Science and Engineering Library supports study and research in the pure and applied sciences with substantial traditional and electronic collections in these disciplines.

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

The Health Sciences Library, located in Wegner Hall, offers top quality biomedical collections and services to 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 and Construction Management, 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 to advantage. 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 application and course listing is available beginning mid November on the Summer Session Web page, www.summer.wsu.edu, or contact the Summer Session Office, summer@wsu.edu, to request a brochure.

Washington State University Foundation

WSU Foundation, 800-448-2978, PO Box 641925, Pullman, WA 99164-1925
wsufoundation.wsu.edu

The mission of the Washington State University Foundation is to promote, accept, and maximize private support for programs, initiatives, and properties of Washington State University and its regional campuses. The WSU Foundation also prudently manages, invests, and stewards the assets entrusted to it by WSU and its alumni, friends, and donors. Since its creation in 1979, the WSU Foundation has raised more than $850 million in support of WSU’s world-class educational experience, research, and community outreach. Private contributions to the WSU Foundation fund scholarships for deserving undergraduate and graduate students, attract and retain top faculty, build state-of-the-art facilities, and enable cutting-edge research and educational programs to flourish at Washington State University. For more information, visit the WSU 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.
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 Beta Kappa. Phi Beta 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 elected officers and representatives through the Associated Students of Washington State University (ASWSU). ASWSU is interested in a wide range of issues relating to the student's life at WSU and is led by the president and vice president. The senate is directly involved in the allocation of 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).

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.
Student Services and Facilities

Campus Involvement
Ad Annex 104
509-335-9667
www.getinvolved.wsu.edu

Campus Involvement strives for knowledge, integrity, and a commitment to civic engagement and social justice. It is committed to developing students of Washington State University to be critically reflective and engaged participants in a global society, effective communicators, rigorous scholars, and passionate leaders who welcome the challenge to work and collaborate on behalf of their communities.

In achieving these goals, Campus Involvement is dedicated to fostering a campus that embraces diversity by encouraging a culture of understanding, belonging, and civility; a learning community with close student and academic engagement fostering partnerships for discovery; diverse and innovative opportunities for leadership development; a work environment where community is valued, respected, and promotes continuous improvement; effective relationships through responsible stewardship of resources, innovation, and creative problem solving; and rituals affirming tradition and where change is shared and celebrated. Programs include:

Up All Night. Up All Night offers free weekend entertainment for WSU students. These themed programs always offer a number of forms of entertainment such as movies, bands, comedians, hypnotists, magicians, interactive games, as well as arts and craft making projects. Up All Night also sponsors many evening self-development nights, which include speakers, panel discussions, debates, College Bowl, Poetry Slam, and, as always, free food, fun, and entertainment.

Arts and Culture. Campus Involvement is a major contributor to the arts scene on the WSU campus. Each year the Visual, Performing, and Literary Arts Committee (VPLAC) presents a series of musical and theater performances, literary readings, and visual arts exhibits that relate to a central theme. Art à la Carte (in collaboration with the Museum of Art) offers a series of noontime art programs each semester featuring local artists and WSU faculty and students. The Compton Union Gallery on the Move features work by local and visiting artists, student projects, traveling exhibits, and displays that are entertaining as well as educational.

Summer Programs. Summer programs include film, music, lecture, and book series that are designed to provide social and educational entertainment through a diverse array of programming during the summer months.

Student Organization Services. Washington State University offers the opportunity to be involved in over 240 different student organizations. Registered Student Organizations (RSOs) represent the full spectrum of interests of WSU students in areas including cultural activities, academics, recreation, religious, social, and other interests. We also coordinate registration of student events on campus. Campus Involvement serves as a clearinghouse and resource center for faculty and staff who serve as advisors to student organizations. Our Web site, www.geninvolved.wsu.edu, includes a link to the RSO Portal, which is a database of all student organizations at WSU. This database includes leaders, descriptions, and other pertinent information. Campus Involvement staff serve as advisors to ASWSU and its committees.

Leadership Programs. Students learn the foundations of leadership, engage others, act as responsible leaders, develop themselves and others through the learning process, and serve the local and global community. Leadership Programs offers workshops for student organizations and university departments, facilitates annual weekend programs, coordinates the President’s Award and instructs academic courses.

Career Services
Lighty Building, Room 180
509-335-2846
www.careers.wsu.edu

Career Services offers a comprehensive program of services. Counselors assist students in assessing skills, interests, and work values; developing decision-making skills; identifying and exploring career options; connecting academic majors to internship opportunities and future careers; preparing for graduate/professional school; and planning job search strategies. Counselors also offer daily drop-in hours for review of resumes and cover letters. Each semester, Career Services offers two 1-credit courses (Univ 100 and Univ 300) to help students enhance their career decision-making skills and better understand how to connect their academic experiences with the world of work. An interactive computer-assisted program (called SIGI+) is also available to help students with self-assessment and information about career options. The Career Resource Center maintains information on WSU majors, occupations, job search and graduate school preparation materials, employer literature and directories, and Internet resources. In addition, Career Services sponsors two major career fairs and associated events each year.

Through on-campus interviews, students can interview for internships 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. The Student Employment Program lists both on- and off-campus, work-study, and hourly student jobs. To access job and internship listings, 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.

Center for Civic Engagement
(formerly the Community Service Learning Center)
Smith Gymnasium, Room 212
509-335-7708
cc.e.wsu.edu

The Center for Civic Engagement (CCE) promotes student learning through civic engagement in community service, service learning, advocacy, and civic leadership. Student civic engagement includes the exploration of “self in society” through enhanced self awareness, knowledge of community issues and development of civic responsibility. The CCE is a resource for students seeking to make stronger connections with community and faculty seeking to incorporate community-based learning and citizenship development into the academic curriculum. Established partnerships with local, regional, national and international organizations provide students with diverse opportunities for learning the skills necessary to make positive changes in the world.

Community Projects and Placements. The CCE offers hundreds of organized community projects each year led by student project leaders who coordinate project details, provide transportation, and facilitate post-project reflection. CCE staff work with student organizations or other groups to initiate, develop, and implement campus and community-based projects to address or raise awareness of a community issue. CCE partnerships with community organizations provide long-term placement opportunities tailored to meet personal, academic or career goals. Student peer mentors provide selection assistance and support.

Academic Service Learning. Academic courses that integrate service learning are available in many departments at WSU. Choose from over 70 classes a year that include community-based learning for a memorable and meaningful experience.

Students in Service. Students engaged in long-term community service may be eligible for a ‘Students in Service’ educational award through AmeriCorps.

Events. Annual CCE events provide numerous opportunities for student civic engagement, including National Hunger and Homelessness Awareness Week (November); Campus on the Run (March); and Civic Engagement Week (April).

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

The mission of the Center for Human Rights (CHR) is to carry out investigative and monitoring activities to ensure equal employment opportunity and respect for human rights at WSU and promote improvements in relevant policies and procedures. Increasingly, CHR also conducts affirmative, pro-active activities that
educate, train and inform the broader WSU community in equal employment and human rights issues, and assist University units to detect and address relevant issues before they become problems.

**CHR’s Program Areas**
- Equal Employment Opportunity/Affirmative Action Compliance
- Discrimination, Sexual Harassment and Hate/Bias Complaint Investigation Consultations
- Human Rights/EEO/AA/ADA Training and Education
- Climate Issues
- Public Events/Forums
- Outreach Activities
- Workforce Recruitment, Retention, and Diversification Efforts

**WSU Children’s Center**
509-335-8847

The 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 the 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 7:30 a.m. to 5:30 p.m.

Evening child care is also available to students, staff, and faculty families regardless of whether or not the child attends the daytime 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 available to students for observation and participation for classes. Work-study jobs are also available.

CCAMPIS grants are available to assist eligible student parents with child care costs at accredited centers in the Pullman area. Inquire at the Children’s Center.

**Counseling and Testing Services**

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

Counseling Services offers psychological counseling and consultation to WSU Pullman students. Psychologists and counselors are available to provide confidential assistance to students with personal, social, and academic concerns. Groups and workshops are offered on such topics as test anxiety, stress management, substance abuse, relationships, and sexual orientation/gender identity. 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.drc.wsu.edu

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 and Public Media**

**www.epm.wsu.edu**

Educational and Public Media (EPM), www.epm.wsu.edu, is responsible for public broadcasting, interactive video services, web-based audio and video applications, direct support of academic classrooms and other telecommunications services. EPM can trace 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 latter 1920s. Television 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:** WWSU operates thirteen 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.nwprr.org. Northwest Public Radio has studios in Pullman (main), Moscow and Richland and is in the process of converting existing stations to High Definition (HD) transmission technology.

WSU has separate PBS memberships for its television 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-DT and KWSU-DT offer digital signals of its services on Channels 38 and 17, respectively. More information on WSU’s public television services are found at www.kwsu.org.

**AMS:** Academic Media Services (formerly WHETS and Instructional Support Services), www.ams.wsu.edu, provides media support to general university classrooms on the Pullman campus and via videoconference facilities to campuses a learning centers throughout Washington. AMS videoconferencing services operates interactive video classrooms statewide interconnected with telecommunications facilities provided by the Washington K-20 Education Network. It has access to any public university, community college or school district in the state as well as out-of-state educational facilities. AMS was originally built to interconnect WSU’s campuses in order to share faculty resources and provide the capability of course origination from each site.

AMS provides about 14,000 hours per year of programming, 90% of it for classes, and the remainder for meetings involving about 15,000 participants. There are nearly 9,000 enrollments and about 900 average annual FTE students involved in 300 courses.

AMS also provides high quality technical support of academic programs scheduled by the Registrars Office in WSU’S 140 General University Classrooms. Services include technical classroom support media equipment checkout, self-service editing, and the design and planning for new and remodeled classrooms.

**Gender Identity/Expression and Sexual Orientation Resource Center**

**Smith Gym, Room 303**
509-335-6388
www.thecenter.wsu.edu

The WSU Gender Identity/Expression and Sexual Orientation Resource Center (GIESORC) 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 GIESORC 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
Washington Building
1125 NE Washington Ave.
509-335-3575
www.hws.wsu.edu

Medical Clinic
The HWS medical clinic is fully accredited and staffed by board certified physicians and health care professionals that provide primary, preventative, and mental health care for WSU students. For a complete list of services, please visit www.hws.wsu.edu.

Every full-time student automatically pays a fee with tuition that provides office visits at the medical clinic. Students are charged for supplies, lab tests, x-rays, and medications, but these costs are kept as low as possible.

HWS is located in the Washington Building, across Stadium Way from the Stephenson Complex, on the south end of campus. Regular clinic hours are Monday through Friday with urgent care available most Saturdays. A 24-hour telephone nurse service is available at all times.

Pharmacy 509-335-5742
The full-service pharmacy is located inside the medical clinic and is open Monday through Friday. The pharmacy will transfer prescriptions from other pharmacies and accept prescriptions from providers outside of Health & Wellness Services.

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 on the second floor of the clinic building.

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. 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, the Yakama apartments, and administrative offices. Telephone troubleshooting and repair service is also available.

• Residence Halls: All residence hall phones come with a data connection and a digital telephone instrument with the option of activating phone service with or without voice mail. 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.

• 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 different monthly service plans. Statements will be sent directly to the student from Verizon. Payment will be sent back to Verizon.

The PhoneDesk also assists students, faculty, and staff with creation, management, and troubleshooting of e-mail accounts, Network IDs, one time access codes, AIS accounts, active directory, RONET, student billing, and elinfoCenter.

ITS Student Computing Services
Information Technology Building, Room 2071
509-335-HELP

Student Computing Services (SCS) offers many technology opportunities to students and faculty across campus. SCS Technology Labs offer PC and Macintosh computers running word processing, spreadsheet, multimedia, graphics and video editing, and other commonly used software. In addition, a variety of specialized hardware such as laser color and B&W printers, scanners, CD and DVD burners, Zip drives, and digital video editing stations adorn the Technology Labs. Also, digital cameras, digital video cameras, and wireless ethernet laptops are available for checkout in the labs. SCS Technology Labs are located in Gannon/Goldsworthy 58, Stephenson Residential Complex 206, Streit Hall 60, Honors Hall 10, and SCUE 302-402. A student technology consultant is always on duty to assist customers with using the computers and software. Students living in a residence hall have unlimited access to the residence hall labs in Stephenson, Streit, Gannon, and Honors. In addition to unlimited residence hall lab access, free software training is available to residents in Thompson 1. For students living off-campus, semester, yearly, and hourly passes are available for purchase at each lab or can be purchased directly from the METRO registration page. Students purchasing year-long or semester passes also have access to free software training in the Training Lab in Thompson 1.

SCS also offers the ResNet program which provides ethernet cards, cables, and installations to students living in the residence halls on campus. Ethernet cards and cables are available for purchase in the five labs. Network Support Services (NSS), for a fee, can help students who wish to bring their computer into ITB 2071.

The SCS Student HelpDesk is located in ITB 2071. HelpDesk consultants are available to answer questions regarding UNIX and Network ID accounts. In addition, the HelpDesk provides Network Support Services to students, both on and off-campus, who connect to the campus network using either ethernet or the WSU dial-up modem pool. NSS also helps with other network related issues such as virus elimination. Information technology services is available to students by coming to the HelpDesk or by telephone.

WSU Telecommunication Services for Students
Information Technology Services provides phone and data service for the Yakama apartments.

• 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 residents are responsible for providing their own telephone instruments. Each apartment is provided with an optional 10MB data connection that provides high speed access to WSU data services and the Internet.

• Residence Halls: Each room is 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.

• 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.

• Sprint Cell Service: Sprint cell service is available to students under the WSU Sprint Wireless agreement. For more information go to: http://infotech.wsu.edu/communications/services/mainstudentservices.htm.
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, Chicana/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. Our newest program is the Intercultural Leadership Initiatives and Student Development Program which promotes student events and seeks leadership opportunities for students of color to develop their leadership skills.

Museums and Collections

The Museum of Anthropology

College Hall, Room 110
509-335-3936
libarts.wsu.edu/anthro/museum

The Museum of Anthropology is one of the major repositories for archaeological 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 exhibitions focusing on special topics are hosted each year. The exhibit area is open 9 a.m. to 4 p.m. 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 six days a week, from September through July. The gallery is closed on Sundays, 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 fish, 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. Admission is free. School groups are welcome.

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, zooarchaeology, 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.sees.wsu.edu/Museums

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 School of Earth and Environmental Sciences office 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 Ellett 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 5,000 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 primarily in storage pending new facilities with selected items being accessed for classroom examination.

The Office of Multicultural Student Services

Owen Science Library Concourse, Room 270
509-335-7852
www.mss.wsu.edu

Conner Museum

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

Culver Memorial, Jacklin, and McCaw Geological Collections

Webster Hall, Room 122
www.sees.wsu.edu/Museums

Drucker Collection

509-335-3823

The Historic Textiles and Costume Collection

509-335-3823

The Academic Enrichment Center offers free access to a computer lab, tutoring services, and workshop series to support students’ academic goals. Our newest program is the Intercultural Leadership Initiatives and Student Development Program which promotes student events and seeks leadership opportunities for students of color to develop their leadership skills.
James Entomological Collection

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

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 refactor 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 maintained by the Department of Plant Pathology, and is housed in the Plant Biosciences Building, Rooms B6 and B8. The herbarium was founded by Frederick D. Heald, the first chairman of the department, in 1915 and now contains more than 71,000 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 and visitors are welcome and are asked to make advance arrangements with the Director, Professor Jack D. Rogers, Department of Plant Pathology, 509-335-9541, 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/~wsher

The Marion Ownbey Herbarium is an internationally recognized resource for research, teaching, and service. The herbarium houses about 370,000 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

Plant Biosciences Building, Room 43
509-335-3475

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 the Plant Biosciences Building, Room 43, and may be viewed any time the building is open. Persons or groups interested in touring the collection should contact Bill Pan at 509-335-3471. Additional information about the Soil Science program can be viewed at www.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
libarts.wsu.edu/musicandtheatre

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

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 in the “Arts on the Palouse” calendar and in a monthly calendar of events which is available on the SMTA Web site at www.libarts.wsu.edu/musicandtheatre or by calling 509-335-8524, the SMTA events line.

The School of Music, 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 program offering many opportunities for participation in major productions in Daggy Hall theatres as well experimental and student-directed productions. Interested students should contact the Theatre Program for information regarding aspects of the program such as acting, directing, criticism, technical production and dance. Auditions for mainstage productions are open to all members of the University and the 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 a.m. to 4 p.m. daily while classes are in session.

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 therapeutic treatment to individuals 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 developmental delays, brain injury, or neuromuscular disability. Individuals with auditory processing disorders, learning disabilities, cochlear implants, and augmentative communication systems 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
- 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 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
509-335-8732 (UREC)
www.urec.wsu.edu

The Student Recreation Center (SRC) 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 SRC, 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, and a fireplace; outdoor sundeck; and other amenities.

The newest addition to the SRC, 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 SRC, and equipment is available for checkout at no cost to students/members inside the building.

The SRC 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, and has recently added wireless internet to aid in student leisure and studying.

Those 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 www.urec.wsu.edu or at the SRC during operating hours.

Student Support Services TRiO Program
Lighty Building, Room 260
509-335-7324
www.sss.wsu.edu

The 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 limited income family (according to prescribed federal guidelines)
- Student has a documented disability

Students are accepted on a first-come, first-served 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.women.wsu.edu

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 Transit 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.
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.

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 the University's 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. Students interested in the Global Studies Minor should contact International Programs for additional information. International Programs at WSU is organized into programmatic areas to serve its University-wide responsibilities.

IP/Global Studies

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

An interdisciplinary Global Studies minor is available. Students interested in the Global Studies Minor should contact International Programs for additional information.

IP/Office of International Students and Scholars (OISS)

Bryan Hall, Room 108
509-335-4508
www.ip.wsu.edu/oiss

OISS assists international students and visiting faculty at WSU in the immigration requirements and academic and social adjustments necessary for a successful educational, research, and cultural experience at WSU. OISS is also responsible for assisting departments and the University in filing immigrant petitions for international faculty hired into permanent tenure track positions.

IP/International Center

Smith Gym, Room 214
509-335-4223
www.ip.wsu.edu/intlcenter

The International Center is a joint initiative of the International Students' Council and International Programs. The International Center offers services to international and domestic students as well as faculty and staff with international interests. The International Center hosts a variety of programs, serves as a home to the International Students' Council and international registered student organizations, and provides a cross-cultural gathering place.

IP/Education Abroad (EA)

Bryan Hall, Room 105
509-335-6204
www.ip.wsu.edu/education_abroad

Education Abroad is responsible for advising students who wish to study abroad and helping incoming exchange students settle into WSU campus and community life. With many program choices available for WSU students going abroad to study, students are encouraged to incorporate an overseas experience into their major or minor field of study. The EA office will assist students in finding the best program for them, whether it is through a third-party provider, an exchange program, a faculty-led program, or an academic internship. Over 500 students each year take advantage of the opportunity to engage in academic and culturally enriching experiences. The EA Office assists students with all aspects of studying abroad: identifying a program, applying, obtaining financial aid or scholarships, selecting courses, obtaining travel documents and so on. Students interested in studying abroad are encouraged to contact the EA office early in their academic career.

IP/International Research & Development (IPR&D)

Bryan Hall, Room 206
509-335-2980
www.ip.wsu.edu

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
www.ip.wsu.edu/ialc

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 various 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, composition, grammar, listening, various special interest courses, and the Test of English as a Foreign Language (TOEFL) preparation, using both classrooms and microcomputer labs. Advanced students concentrate on academic studies. Students are placed in one of six levels, according to their individual proficiencies in English.
COURSES INCLUDE: Beginning and Low Intermediate Levels—Listening and Speaking (9 hrs/week), Reading and Writing (6 hrs/week), Grammar (3 hrs/week); Intermediate and High Intermediate Levels—Listening and Speaking (6 hrs/week), Reading and Composition (9 hrs/week), Grammar (3 hrs/week); Advanced Level—Listening and Speaking (6 hrs/week), Reading and Composition (9 hrs/week), Academic Writing (6 hrs/week), Academic Listening Skills and Strategies (3 hrs/week); Graduate School Preparation—Listening and Speaking (6 hrs/week), Reading and Composition (9 hrs/week), Research Writing (6 hrs/week); Electives include—Pronunciation (3 hrs/week), Introduction to Academic Listening (3 hrs/week), Writing Workshop (3 hrs/week).

Any non-native speaker of English who is at least 18 years of age, knows the English alphabet and corresponding sounds, and has completed secondary 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 package programs with domestic and foreign agencies on a contract basis. To apply or to obtain more information about the language center, contact the Intensive American Language Center.

Learning Enrichment Opportunities

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

For Freshmen

**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 additional support within a learning community. Contact: Student Advising and Learning Center, Lighty Building Room 260, 509-335-5507, www.salc.wsu.edu/freshman.

**Freshman Focus** – The residential living/learning community where students are co-enrolled in two General Education courses with other freshman students who live on the same residence hall floor. 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 with faculty and residence hall peers. Contact: Student Advising and Learning Center, Lighty 260, 509-335-6000.

**Peer Tutoring** – Students who wish to seek tutoring for any of a variety of subjects, including those involving research skills and writing, may pay a small fee for tutoring through the Student Advising and Learning Center. Students should also contact academic departments for possible tutoring assistance. Contact: Student Advising and Learning Center, Lighty Building, Room 260, 509-335-9603.

**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 Center, Center for Undergraduate Education, Room 303, 509-335-3628.

For Sophomores and Above and Transfer Students

**Accessing Information for Research** – With sophomore standing and above, students may enroll in GenEd 300, a one-credit course intended to assist them in exploring the technological resources available for conducting academic research. Transfer students who may not be familiar with the resources of the research library are also encouraged to enroll. Contact: Library Instruction Office, Holland Terrell Library, 509-335-7735.

**Advanced Writing Tutorial** – GenEd 302 can be taken concurrently with an M course or upper-division writing intensive course in the student’s major. This advanced course also employs a small-group, student-centered approach focusing on students’ discipline-specific needs. Contact: Contact: WSU Writing Center, Center for Undergraduate Education, Room 303, 509-335-3628.

**Grammar in Context-English 202** can be taken concurrently with an M course or upper-division writing intensive course. This course also employs a small-group, student-centered approach focusing on supporting issues of grammar and syntax as students are writing assignments for various courses. This tutorial is open to multi-lingual and native speakers of English. Contact: WSU Writing Center, Center for Undergraduate Education, Room 303, 509-335-3628.

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, http://owl.wsu.edu. Contact: WSU Writing Center, Center for Undergraduate Education, Room 303, 509-335-3628.

**Peer Tutoring** – Students who wish to seek tutoring for any of a variety of subjects, including those involving research skills and writing, may pay a small fee for tutoring through the Student Advising and Learning Center. Students should also contact academic departments for possible tutoring assistance. Contact: 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. Service learning experiences such as child and youth mentoring and environmental restoration infuse classroom learning, enhance civic awareness, promote personal growth, and foster skill development. Contact: Center for Civic Engagement, 509-335-7708, cce@wsu.edu, http://cce.wsu.edu.

**Student Support Services Program (SSS)** – SSS is a federally funded TRiO program that serves first-generation, low-income, and/or disabled students. Services include: Academic/financial advising, workshops, counseling, tutoring, mentoring, skills training, scholarship opportunities, cultural enrichment activities, technical support, and referrals. Interested students should contact SSS in the Student Advising and Learning Center, Lighty Building, Room 260, 509-335-7324, www.sssp.wsu.edu.

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, http://owl.wsu.edu. Contact: WSU Writing Center, Center for Undergraduate Education, Room 303, 509-335-3628.

**Peer Tutoring** – Students who wish to seek tutoring for any of a variety of subjects, including those involving research skills and writing, may pay a small fee for tutoring through the Student Advising and Learning Center. Students should also contact academic departments for possible tutoring assistance. Contact: Student Advising and Learning Center, Lighty Building, Room 260, 509-335-9603.
Research Facilities

Laboratory for Atmospheric Research
www.lar.wsu.edu

The Laboratory for Atmospheric Research provides a recognized center for atmospheric studies 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 research projects of the laboratory. Since atmospheric research requires an interdisciplinary approach, both the laboratory and those who work cooperatively on joint research programs have diverse disciplinary backgrounds. Research areas include those of interest to the citizens and industries of the state, the nation, and the world. Thus, the laboratory is engaged in research aspects of meteorology, atmospheric chemistry, pollution abatement, global climate issues, and effects of atmospheric pollutants. Much of the research involves field measurement programs which have taken the faculty, staff, and students to such diverse places as China, the Antarctic continent, the Caribbean, and the Pacific Ocean as well as numerous sites in the United States. Sampling platforms used include mobile trailers, towers, aircraft, and ships. Analytical technique development in the laboratory and computerized data interpretation, including atmospheric modeling, round out the laboratory research.

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. In 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.

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.

Franchesci Microscopy and Imaging Center
Abelson Hall, Room 133
509-335-3025

The Franchesci Microscopy and Imaging Center (FMIC) is a research and training facility for the study of biological and non-biological materials. The FMIC provides electron microscopy and light microscopy equipment for observation and analysis of a diverse array of specimens. Students, faculty, and staff can access the FMIC 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 FMIC 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 FMIC, 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 FMIC.

GeoAnalytical Laboratory
Webster Hall, Room 1228
509-335-1626
www.wsu.edu/~geolab

The GeoAnalytical Laboratory is a service center within the School of Earth and Environmental Sciences which provides analytical services, primarily for geological research, but also for research in inorganic chemistry and applications in many fields of material and environmental sciences. The laboratory comprises an automated Cameca electron microprobe for quantitative elemental microanalysis 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; a Finnigan-MAT gas source mass spectrometer for oxygen, carbon, and hydrogen isotope ratio determinations; a high resolution Thermo-Finnigan ICP-MS for ultra low trace element analysis including in-situ laser ablation sampling; 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
infotech.wsu.edu

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 OC3 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 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.

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 provides 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/~nrc](http://www.wsu.edu/~nrc)

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 HPGe, LEF, 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](http://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, staff, students, and others for conducting research; and (3) to provide research training for both undergraduate and graduate students at WSU.

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 student 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**

Albroom Lab, Room 202B  
509-335-5531  
[www.swwrc.wsu.edu](http://www.swwrc.wsu.edu)

Federal legislation establishing the State of Washington Water Research Center, along with the 53 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
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, over 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](http://nmr.chem.wsu.edu)

The WSU Center for NMR Spectroscopy is a central University facility that provides access to state-of-the-art NMR instrumentation. It is administered by the College of Sciences and its equipment has been funded by grants from the National Institutes of Health, the National Science Foundation, the Battelle Memorial Institute, and the Murdock Charitable Trust.

The facility is open for users from across the WSU campuses and from outside institutions. The center currently houses four NMR spectrometers, a Varian Mercury 300 MHz spectrometer for routine chemical analysis, a Varian Inova 500 MHz spectrometer for more complex and demanding projects, a Bruker Avance DRX 400 MHz spectrometer for work on solid state samples, and a Varian NMR Systems 600 MHz spectrometer for biomolecular work and for mass limited samples. The Varian 500 and 600 MHz spectrometers both have four radio frequency channels and pulsed field gradients and are equipped with a variety of probes for analysis of sample types ranging from inorganic complexes to proteins and nucleic acids. The 500 MHz spectrometer is also fitted with XYZ axis field gradients which enable micro-imaging capabilities of samples less than 5mm in diameter and magic angle PFG experiments. The 400 MHz spectrometer is also fitted with four radio frequency channels and has a variety of probes capable of handling double, triple, and quadrupole resonance experiments.

The Center is managed by a Ph.D.-level facility manager whose specialist knowledge is in liquids NMR and by 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 age, sex, race, religion, color, creed, handicap, national or ethnic origin, or marital status. Admission to the University is granted to eligible applicants prior to registration but not after census day 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.apply.wsu.edu 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 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 Faculty Admissions Subcommittee.

Retention of Students
The grade point average for freshmen entering from high school in the fall semester 2006 was 3.45. Of the 2,699 freshmen who entered in the fall 2006, 2,513 were enrolled in the spring of 2007.

Freshman Admission Requirements
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 SAT or ACT will be required for those students graduating from high school after August 2005. The high school transcript must show completion of no less than the following course work in grades 9-12:

- **English:** Four years (three 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, physics, or Principles of Technology). Note: Students applying for college freshman admission, beginning in fall 2010, will need to complete two years of laboratory science, including one year of algebra-based biology, chemistry or physics.

- **Social Science:** Three years (including at least one year of history).

- **Foreign Language:** Two years of the same foreign language, Native American language, or American Sign language.

- **Fine Arts:** One year of fine, visual, or performing arts, or one additional year of academic elective.

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).

Applications 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.

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

Applications must apply with a full and complete application packet by January 31 for priority consideration for the fall semester, as space is limited. Applicants for spring semester should apply by October 1 for priority consideration.

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

Factors considered in freshman admission include grade point average, standardized test scores, the strength of the high school course work (including senior year course work), grades the student has earned and any improvements they have made in their academic performance, and their personal statement. Although letters of recommendation are not required, they are taken into consideration if they are helpful in speaking to the student's academic potential and abilities. Refer to the website for additional information.

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 website 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 Admission Requirements
Transfer applicants who have successfully completed a Direct Transfer Associate (DTA) from a regionally accredited post-secondary institution at the time of application will be admitted as space allows.

Transfer applicants without a DTA 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. Transfer students with a 2.0-2.49 cumulative grade point average will be admitted as space allows. 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 sent directly from each college or university attended showing work completed at the time of application, and the nonrefundable application fee. Applicants with fewer than 27 semester (40 quarter) hours of transferable credit earned and posted at the time of application must also provide evidence of meeting the freshman requirements by the priority date for consideration.

Transfer Credit Policy
College-level work completed at institutions that 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
combination of all institutions shall be 120 semester (180 quarter) hours of credit, of which no more than 73 semester credits may be lower division hours of credit.

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.

**Associate Degree Transfer**

Students who have completed a Direct Transfer Associate (DTA) 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 standing. 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 at 888-468-6978 or 509-335-5586 with any questions regarding the transfer of credit or to access transfer articulation information at www.wsu.edu/advise/transfer-courses or www.wsu.edu/transfer/TRACS, or to call 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 for consideration:

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 3.85 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). Minimum of 1250 SAT (Critical Reading and Mathematics) or comparable ACT score is required.
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 of Students with Extraordinary Talents**

Washington State University wishes to make educational opportunities available to students whose extraordinary talents have the potential to enrich our intellectual, cultural, and social environments, but whose overall academic credentials may not qualify them for regular admission.

WSU departments, colleges, or programs may request special consideration for students who possess such extraordinary talents provided the talent is of a nature that would not normally be reflected or assessed during the regular admission process. The current admission process considers the curriculum, grades, and standardized scores of the applicant. Examples of evidence of extraordinary talents that might not be apparent in the applicant’s file include: exceptional music or theatrical performance, athletic accomplishment, awards in science, math, or artistic competitions or similar measures of talent.

There are two tracks for admission under this policy. The first admits students who are minimally qualified with an AIN of 28 or above, but whose index scores do not meet the criteria set by the university for admission that year. Such students may be admitted upon the written recommendation of the chair/director of the relevant academic department, school, or program or the head coach of the relevant athletic team and the approval of the Associate Vice President/Associate Vice Provost for Enrollment Services or designee. In the case of student athletes, the concurrence of the Faculty Athletic Representative is also required. Letters of recommendation must detail how the student’s skills will contribute to the University.

A three-person panel consisting of the Chair of the Faculty Senate, Chair of the Academic Affairs Committee of the Faculty Senate and the Associate Vice President/Associate Vice Provost for Enrollment Services or their designees will further review students identified as has extraordinary talent but whose AIN scores are below a 28. A written recommendation of the relevant chair/director or head coach will be required to support the student’s admission. In the case of student athletes, the students who are assessed to have potential to contribute to the university through their special skills and advance themselves through the university experience will be considered for admission. Students who fail to meet the university’s minimum core requirements or in the case of student athletes who fail to meet NCAA requirements will not be admitted to the university under this policy.

The University will carefully monitor the number and progress of students admitted under rules 1-c and 1-e. Every fall, the Associate Vice President/Associate Vice Provost for Enrollment Services will provide a written report to the Provost, Chair of the Faculty Senate and the President on the number of students admitted, their academic qualifications, extraordinary talents, or the basis for their admission. The report will also assess the academic progress of students previously admitted under these rules to insure that the program is functioning to the advantage of the students and the university community as a whole.

**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.

Academic programs offered by each campus are listed separately in this catalog. Applications may be obtained from each campus or at its Web site. A
complete transfer 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. A complete freshman application for WSU Vancouver includes the application form, official high school transcript(s), SAT or ACT score, WSU Vancouver Personal Statement, 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

www.wsu.edu/future-students/admission

Students formerly enrolled at Washington State University 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 an 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 census day of classes will not be considered.

FSR applicants will be granted 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 2.0 GPA in transfer work.

Apply at www.apply.wsu.edu or contact the Office of Admissions for a FSR application.

International Student Admission Requirements

www.wsu.edu/future-students/admission

Washington State University encourages the application of qualified students from other nations to complement its student community. Applicants must submit evidence of English proficiency (example: TOEFL or other recognized proficiency exam; see www.ip.wsu.edu/enroll/faq 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/admission for further information.

Non-Degree Admission

www.wsu.edu/future-students/admission

Individuals may enroll at Washington State University as non-degree students for personal enrichment, professional development, or other reasons. Enrollment in courses for non-degree students is limited to space available, and non-degree students register for courses after degree-seeking students. Students who are interested in applying as a non-degree-seeking student may apply at www.wsu.edu/future-students/admission/apply.html.

International Student Non-Degree Admission Requirements

www.wsu.edu/future-students/admission

International non-degree students come to Washington State University for a variety of reasons, as do domestic non-degree students. However, often these students are having a study abroad experience at WSU, much like WSU students have when they go overseas to study for a short while at foreign institutions. The goals for the experience usually include improving language capabilities, taking transferable credit-bearing course work, making new friends, learning about American culture, and seeing a little of the USA. Conversely, these students enrich WSU by exposing students and faculty alike to a broader world view in and outside of the classroom.

Most of the students return to their home institutions to complete degrees after they attend classes at WSU. Since the purpose for the non-degree status is not for the student to ultimately attain a degree from WSU, the period of study is usually expected to be one year or less. However, non-degree students have been known to return to WSU for post-baccalaureate or graduate study after learning about the fine facilities, high-quality faculty, and many resources we have to offer.

Whitman County High School Students Enrolling at Washington State University

For fall and spring semesters, eligible local Whitman County high school students enroll through Running Start. For more information on the Running Start program, please contact the Registrar’s Office at 509-335-5583.

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 freshmen 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.
In consultation with academic departments, credit may be granted to entering or enrolled undergraduate students via external examinations, institutional examinations, and approved military service schools. WSU does not accept credit by exam granted by other institutions. Credit by examination shall yield no grade points. Such credits may partially fulfill General Education Requirements for graduation. External examinations include but not limited to: Advanced Placement (AP) examinations; general and subject College Level Examination Program (CLEP); and International Baccalaureate (IB). Acceptable scores for receiving credit may be found at www.wsu.edu/advancedcredit.

The maximum combined lower-division transfer credit allowed from regionally accredited institutions, AP, CLEP, IB and military credit shall be 73 semester hours toward a baccalaureate degree irrespective of when those hours were earned.

Matriculated students who are currently registered may take a special examination for university credit in a course in which they are not registered. Such credits yield no grade points but may yield credit toward completion of General Education Requirements for graduation. For further information contact the Registrar’s Office.

**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 2007-2008 Undergraduate Expenses, Pullman Campus

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<thead>
<tr>
<th>Direct Costs</th>
<th>Resident</th>
<th>Nonresident</th>
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<tr>
<td>Tuition/Required Fees</td>
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<td>Room and Board</td>
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<td>Indirect Costs</td>
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<tr>
<td>Books</td>
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<tr>
<td>Transportation and Miscellaneous</td>
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<tr>
<td>Totals</td>
<td>$19,104</td>
<td>$29,418</td>
</tr>
</tbody>
</table>

For expenses at other campuses, please see www.finaid.wsu.edu/colcosts2007_2008.htm#trad.

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: $215
- 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.

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 $30.00 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, Graduate Plus 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 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; therefore, 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/sap.htm.

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 6 credit hours of enrollment.

Students with Disabilities

The State of Washington administers several programs of assistance to disabled students. 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, 3411 South Alaska Street, Seattle, WA 98118, 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, P.O. Box 45340, Olympia, WA 98504-5340, 800-637-5627.

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.

Military Waivers

Veterans who served in Korea, Vietnam, the Persian Gulf, and the Global War on Terrorism may be eligible for a tuition discount. Contact the Veterans Affairs Office, French Administration Room 346, or visit 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. Students claiming this special exemption should apply to the Veterans Affairs Office, French Administration Building, 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 for 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

• Civil Service employees 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
• Civil Service employees on trial service appointments meeting the above criteria
• Faculty and Administrative Professional employees holding half-time or greater appointments
• Employees covered by collective bargaining unit agreements are eligible on the same basis as Civil Service employees unless otherwise defined by the terms of the applicable bargaining unit contracts.

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.onet.wsu.edu under RO Publications or at www.summer.wsu.edu under Faculty and Staff for summer session. Complete 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 & 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 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

Over twenty 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 Halls, a Wellness Hall, and a Math, Science, and Engineering Hall, as well as an International House and halls designed specifically for the success of new students. Twenty-three fraternities and 15 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 and 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, P.O. Box 641726, Pullman, WA 99164-1726. For information on sororities and fraternities, please write to Panhellenic and/or Interfraternity Council, Compton Union Building, P.O. 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 which 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, (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 for double occupancy with a level-two dining account for the next academic year can be found at www.livingat.wsu.edu/calculator/reshallrates/. 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 over 600 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 over 300 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

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. Figures are updated online at www.wsu.edu/studacct as they become available.

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.

Please note this chart includes only undergraduate and graduate resident and nonresident rates. WSU has several different programs with different rates, including studies in Veterinary Medicine, Doctor of Pharmacy, Graduate in Nursing, WWAMI, and a Special Masters in Business Administration. If you are interested in one of those areas, please contact those departments for their entrance requirements and tuition rates.

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

**ESTIMATED REGISTRATION FEES per semester**

### FULL-TIME FEES

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<tr>
<th></th>
<th>Undergraduate</th>
<th>Graduate</th>
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<tbody>
<tr>
<td>Resident (10-18 hrs)</td>
<td>$2,944.00</td>
<td>$3,533.00</td>
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<tr>
<td>Resident (19 hrs and above add per credit)</td>
<td>272.00/cr</td>
<td>331.00/cr</td>
</tr>
<tr>
<td>Nonresident (10-18 hrs)</td>
<td>7,764.00</td>
<td>8,602.00</td>
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<tr>
<td>Nonresident (19 hrs and above add per credit)</td>
<td>754.00/cr</td>
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### PART-TIME FEES (per credit hour; minimum charge: 2 credit hours)

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<tr>
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<th>Undergraduate</th>
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<tbody>
<tr>
<td>Resident</td>
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<tr>
<td>Nonresident</td>
<td>776.00</td>
<td>860.00</td>
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</table>

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1 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. Math 99 does not count. Students enrolling in more than 18 credit hours pay the additional per credit amount as noted.

**ADVANCE PAYMENT** (Due prior to final admission) $200.00

**SPECIAL REGISTRATION FEES**

- Graduate Leave Status 25.00
- Auditing a Course; per audit hour (does not apply to full-fee-paying students) 92.00
- Challenging a Course (See Rule 15) 279.00
- State Employee, Staff and Faculty, Exempt, or Senior Citizen Registration 5.00
- Consult the Schedule of Classes for additional fees related to specific courses.

**OTHER FEES AND CHARGES**

- Admission application, undergraduate (nonrefundable) 50.00
- Copyright 65.00
- Cougar card, charge for replacement 10.00
- Course withdrawal fee, after 30th day of the semester, per class (tuition will still be owed) 5.00
- Dishonored checks, service charge 30.00
- Foreign Student Orientation (required of all new foreign students) 50.00
- Graduate School application 50.00
- Graduate School certificates 25.00
- Graduation application, Bachelor's Degree 36.95
- Graduation application, Master's and Doctor's Degrees 50.00
- Late payment fee on unpaid balances vary by amount and by date and may be found at the Student Accounts Web site.
- 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 international students) 1,318.00
- Microfilming (applicable to PhD and EdD degree candidates only) 75.00
- Replacement diploma, undergraduate students 50.00
- Replacement diploma, graduate students 65.00
- Sponsored Foreign Student Administrative Charge (each term) 300.00
- Sports Pass - undergraduates, academic year 99.00
- Sports Pass - graduate and professional students, academic year 175.00
- Stadium Renovation Fee, undergraduates 25.00
- Student Petitions for Exceptions to Academic Calendar Deadlines 10.00
- Student Recreation Center fee (per semester) 128.00
- WSU Health and Wellness Services fee, per semester (fee assessed to every student registered for 7 credits or more) 120.00
- Teacher's Statutory Certification 37.00
- Transcript (per copy)
  - Regular 4.95
  - Electronic 8.00
- Emergency (delivery within 24 hrs) 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 Lobby (optional) 4.00
- Writing Placement Exam 12.00

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.

**Payments by International Students**

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 U.S. funds.

**REFUND POLICY**

**Registration Fees**

Students who cancel their enrollment after the semester has started will have 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 sixtieth 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:

- Week 1 100% reduction
- Week 2 80% reduction
- Week 3 60% reduction
- Week 4 40% reduction
- Week 5 20% reduction

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 for 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. 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
Washington State University sponsors an optional medical insurance plan for students who are enrolled in 7 or more credits. Plan features include coverage for surgery, hospitalization, vision, prescription drugs, and more. Coverage is available worldwide. Contact Human Resource Services at (509) 335-4521 or visit www.hrs.wsu.edu for additional Plan information.

International students, regardless of the number of credit hours are automatically enrolled in the medical insurance plan. International students may submit an equal or better alternative plan to receive a waiver. The substitute medical insurance plan must be submitted to the Human Resource Services office within the first five days of 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 58, 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 Regional Campus Students
Students who wish to drop all of their classes before the first day of the semester must do so via myWSU. After the semester has started, students can cancel their enrollment by filling out the online cancellation of enrollment form at www.cancel.wsu.edu. In the event of technical problems, contact the Registrar's Office at 509-335-5346 or the regional campus registration 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 registration office on the appropriate campus regarding these procedures.

Residency for Tuition-Paying Purposes

www.registrar.wsu.edu
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. Please refer to the list of evidence to be considered below.

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
6. Selective service registration
7. Purchase of primary residence, lease agreement or monthly rental receipts
8. Resident status of students in schools attended outside the state of Washington
9. Membership in professional, business, civic or other organizations
10. Records of checking or savings accounts and safety deposit box rental

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 the 30th calendar day following the first day of instruction of the semester for which application is made. 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, or (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 the Registrar’s Office at 509-335-4766. 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 residency requirements and does not replace or supersede any residency law enacted by the Legislature.
COLLEGE OF AGRICULTURAL, HUMAN, AND NATURAL RESOURCE SCIENCES

Daniel J. Bernardo, Dean
Hulbert Hall, Room 423
509-335-4862
www.cahnrs.wsu.edu

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 that is vital to the well being of our state and nation. The college also offers formal classroom instruction, ongoing research programs, and outreach programs through extension. All of these contribute to the development of Washington’s human and natural resources.

The college offers approximately 25 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 labs/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 business and finance, communications, food processing, natural resource management, pest management, and sales and distribution of food products. 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, 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. Animal Sciences 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, 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 and Natural Resource Science Degrees

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science</td>
<td>CAHNRS Academic Programs</td>
</tr>
<tr>
<td>Agriculture and Food Systems (including Agricultural Business and Technology Systems (with options in Agri-Food Production Management, Agri-Food Business Management, Communications, and Technology); Agricultural Education; Organic Agriculture Systems; Pest Management Systems; and Plant and Soil Systems (with options in Cropping Systems, Horticulture Systems, and Soil Management))</td>
<td>Economic Sciences</td>
</tr>
<tr>
<td>Agribusiness Economics and Management</td>
<td>Economic Sciences</td>
</tr>
<tr>
<td>Agricultural Economics and Management</td>
<td>Animal Sciences</td>
</tr>
<tr>
<td>Animal Sciences</td>
<td>(including Industry, Production Management, Science/Pre-Veterinary Medicine)</td>
</tr>
<tr>
<td>Crop Science</td>
<td>Crop and Soil Sciences</td>
</tr>
<tr>
<td>(including Business and Industry, Cropping Systems, Science/Biotechnology, and Turfgrass Management)</td>
<td>Economic Sciences</td>
</tr>
<tr>
<td>Environmental and Resource Economics and Management</td>
<td>Earth and Environmental Sciences</td>
</tr>
<tr>
<td>Environmental Science (Interdisciplinary degree)</td>
<td>Food Science and Human Nutrition</td>
</tr>
<tr>
<td>Food Science and Human Nutrition (including Coordinated Program in Dietetics and General Dietetics)</td>
<td>(including Environmental Horticulture, Fruits and Vegetables, and Viticulture/Enology)</td>
</tr>
<tr>
<td>Horticulture</td>
<td>Natural Resource Sciences</td>
</tr>
<tr>
<td>(including Forestry, Natural Resource Policy (with Pre-Law), Wetland / Aquatic Resources, Wildlife Ecology, and Directed Studies)</td>
<td></td>
</tr>
</tbody>
</table>
Degree | Department
--- | ---
Soil Science | Crop and Soil Sciences
(including Environmental Soil Science, Precision Farming, Soil Management, and Sustainable Agriculture)

**Bachelor of Landscape Architecture**
Landscape Architecture | Horticulture and Landscape Architecture

**Bachelor of Arts**
Apparel, Merchandising, Design, and Textiles | Apparel, Merchandising, Design, and Textiles
(including Apparel Design, and Merchandising)
Economics | Economic Sciences
Human Development | Human Development
(including Adolescence, Aging, Early Childhood and Family Studies Specialties, teacher certification in Early Childhood Education and Family and Consumer Sciences Education)
Interiors Design | Interior Design

**Master of Regional Planning**
Regional Planning | Earth and Environmental Science
(Interdisciplinary Degree)

**Master of Science**
Agriculture | Crop and Soil Sciences
Animal Sciences | Animal Sciences
Biological and Agricultural Engineering | Biological Systems Engineering
Crop Science | Crop and Soil Sciences
Entomology | Entomology
Food Science | Food Science and Human Nutrition
Horticulture | Horticulture and Landscape Architecture
Human Nutrition | Food Science and Human Nutrition
(Thesis and Non-Thesis options)
Landscape Architecture | Horticulture and Landscape Architecture
Molecular Plant Sciences | Molecular Plant Sciences
Natural Resource Sciences | Natural Resource Sciences
Plant Pathology | Plant Pathology
Soil Science | Crop and Soil Sciences
Statistics | Statistics
(Interdisciplinary Degree)

**Master of Arts**
Apparel, Merchandising, Design, and Textiles | Apparel, Merchandising, Design, and Textiles
Applied Economics | Economic Sciences
Human Development | Human Development
Interior Design | Interior Design

**Doctor of Philosophy**
Agricultural Economics | Economic Sciences
Animal Sciences | Animal Sciences
Biological and Agricultural Engineering | Biological Systems Engineering
Crop Science | Crop and Soil Sciences
Economics | School of Economic Sciences
Entomology | Entomology
Food Science | Food Science and Human Nutrition
Horticulture | Horticulture and Landscape Architecture
Molecular Plant Sciences | Molecular Plant Sciences
Nutrition | Food Science and Human Nutrition
Plant Pathology | Plant Pathology
Soil Science | Crop and Soil Sciences
Statistics | Statistics
(Interdisciplinary Degree)

**COLLEGE OF BUSINESS**

**Eric R. Spangenberg, Dean**
**Todd Hall, Room 570**
**509-335-3596**
**www.business.wsu.edu**

The College of Business (CB) is dedicated to innovative teaching and learning, world-class research, and the pursuit of excellence in all levels of business education. The CB spans three campuses of Washington State University with the largest campus in Pullman and regional campuses located in Vancouver and the Tri-Cities area. The CB conducts scholarly and applied research and offers degree programs in a variety of business disciplines and in hospitality business management, and supplements these offerings through innovative online learning and exchange programs throughout the world.

The CB is among two percent of business schools worldwide to be accredited by the Association to Advance Collegiate Schools of Business (AACSB) at the bachelor, master, and doctoral levels, and is ranked among the top ten business programs at public universities in the Western United States by US News and World Report.

The College of Business is developing globally competent business leaders who will successfully drive the commercialization of innovation across disciplines.

Through the College's annual business plan competition and national venture forums, students drive the execution and delivery of transformational innovations.

A newly redesigned MBA curriculum focuses on the management of innovation to develop leaders who can successfully take new products to market.

Students develop global competencies in study-abroad programs and international internships facilitated by the CB International Business program, ranked in the Top 25 by US News and World Report.

The Scott and Linda Carson Center for Professional Development equips students with the skills and knowledge necessary for personal and professional success.

**Areas of Study**

The college departments—accounting; information systems; finance, insurance and real estate; 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 (Vancouver and Tri-Cities campuses only)
Entrepreneurship
International Business
Information Systems
Management and Operations
Marketing
Finance (with six career tracks including Risk Management/Insurance and Real Estate)

Within the college a specialized Bachelor of Arts degree is offered in the area of Hospitality Business Management.

Graduate work may be taken in business administration and accounting leading to Master and Doctor of Philosophy degrees.

**Minors**

Minors are available in the following business administration fields: accounting, business administration (only non-business majors are eligible), entrepreneurship, finance, human resource/personnel, international business, management information systems, and marketing. A minor in hospitality business management is also available. For specific information regarding minor requirements, see the Business Administration 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 credits and specific course and GPA requirements.
Applicants should have completed the Writing Portfolio Assessment (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 upon completion of 60 hours of course work and meeting GPA and other requirements.

For specific information regarding the acceptability of college courses taken at other institutions in areas of study offered by the departments of the College of Business, prospective students should communicate with the appropriate department chair or the CB Office of Advising.

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

Business Degrees
The curricula of the College of Business lead to the following degrees:

**Pullman Campus Degrees**
- Bachelor of Arts, Business Administration
- Bachelor of Arts, Hospitality Business Management
- Master of Accounting
- Master of Business Administration
- Doctor of Philosophy, Business Administration

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

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

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

**COLLEGE OF EDUCATION**

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

The College of Education consists of the Department of Educational Leadership and Counseling Psychology and the Department of Teaching and Learning. The college has both degree and certification programs. The College of Education offers degree programs which 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 local 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 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.

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- Master of Business Administration
- Doctor of Philosophy, Business Administration

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- Bachelor of Arts, Business Administration
- Master of Business Administration

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

**COLLEGE OF BUSINESS AND**

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- Master of Business Administration

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

**Degree**
- Bachelor of Arts, Education
- Bachelor of Arts, Sport Management
- Bachelor of Science, Kinesiology (Athletic Training and Movement Studies)
- Bachelor of Science, Health and Fitness

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

**Degree**
- Master of Education

**Areas of Specialization**
- Counseling
- Curriculum and Instruction
- Educational Leadership (K-12)
- Educational Psychology
- ESL/Bilingual
- Higher Education Administration
- Literacy
- Special Education
- Counseling

**Master of Arts**
- Curriculum and Instruction
- Educational Leadership (K-12)
- Educational Psychology
- ESL/Bilingual
- Higher Education Administration
- Literacy
- Special Education
- Elementary Education
- Secondary Education
- Curriculum and Instruction
- Educational Leadership (K-12)
- Higher Education Administration
- Educational Leadership (K-12)
- Counseling Psychology
- Cultural Studies and Social Thought
- in Education
- Educational Psychology
- Higher Education Administration
- Literacy Education
- Math Education

**Master in Teaching**
- Master of Education

**Doctor of Education**
- Doctor of Educational Leadership (K-12)
- Higher Education Administration
- Educational Leadership (K-12)

**Doctor of Philosophy**
- Counseling Psychology
- Cultural Studies and Social Thought
- in Education
- Educational Psychology
- Higher Education Administration
- Literacy Education
- Math Education

**COLLEGE OF ENGINEERING AND**

**ARCHITECTURE**

Candis Claiborn, 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 mechanical engineering and computer science in Vancouver. The School of Architecture and Construction Management offers degrees in architecture and construction management. The PhD in Materials Science is offered through an interdisciplinary program through 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 field 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 on-line.

**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>
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</thead>
<tbody>
<tr>
<td>Bachelor of Arts</td>
<td>Computer Science (also Tri-Cities)</td>
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<tr>
<td></td>
<td>Architectural Studies</td>
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<tr>
<td></td>
<td>Bioengineering</td>
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<td></td>
<td>Chemical Engineering</td>
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<td></td>
<td>Civil Engineering</td>
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<tr>
<td></td>
<td>Computer Engineering</td>
</tr>
<tr>
<td></td>
<td>Computer Science (also Tri-Cities and Vancouver)</td>
</tr>
<tr>
<td></td>
<td>Construction Management</td>
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<td></td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>Bachelor of Science</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td></td>
<td>(also Tri-Cities and Vancouver)</td>
</tr>
<tr>
<td>Master of Architecture</td>
<td>Architecture</td>
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</tbody>
</table>

**Master of Engineering Management**

- Engineering Management (Spokane, Tri-Cities, and Vancouver only)
- Architecture (Spokane only)
- Biological and Agricultural Engineering
- Chemical Engineering
- Civil Engineering
- Computer Science (also Tri-Cities and Vancouver)
- Electrical Engineering (also Tri-Cities)
- Engineering
- Environmental Engineering (also Tri-Cities)
- Materials Science and Engineering
- Mechanical Engineering (also Tri-Cities and Vancouver)
- Biological and Agricultural Engineering
- Chemical Engineering
- Civil Engineering
- Computer Science (also Tri-Cities)
- Electrical and Computer Engineering (also Tri-Cities)
- Engineering Science
- Materials Science (Interdisciplinary Program)
- Mechanical Engineering (also Tri-Cities)

**Doctor of Philosophy in Engineering**

Engineering practice is based on sound fundamental and practical knowledge of mathematics, the sciences, and liberal arts. Basic sciences and mathematics form the foundation on which engineering science and engineering design courses are built. Engineering courses prepare students to solve problems in society by quantitatively analyzing alternatives and making decisions guided by economics and an awareness of social and ethical issues.

The established undergraduate engineering programs offered by the college are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, 410-347-7700. Accreditation for the bioengineering program and the mechanical engineering and computer science programs in Vancouver will be sought during WSU's next accreditation review.

Graduate degrees in engineering, listed previously, 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, Electron Microscopy Center, Erosion Research and Outdoor Irrigation Laboratories, Food Engineering Pilot Plant, 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 algorithm 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 Architecture Studies (a four-year degree) followed by a three-semester Master of Architecture degree that is accredited by the National Architectural Accreditation Board (NAAB), a Bachelor of Science in Construction Management (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 must 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.gradschool.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 graduate 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, both in the fundamental subject matter necessary for their advanced work and in the other branches of learning, 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 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 faculty involved in graduate education 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 involved in graduate education 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 these faculty members who have been selected because of their special competence and interest.

509-335-6424

www.gradschool.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 graduate 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, both in the fundamental subject matter necessary for their advanced work and in the other branches of learning, so that they may intelligently fulfill their responsibilities of leadership and service to society.

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The faculty involved in graduate education 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 involved in graduate education 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 these faculty members 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, biological and agricultural engineering, 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 Master of Accounting, Master of Architecture, Master of Business Administration, Master of Engineering and Technology Management, Master of Fine Arts, Master of Health Policy and Administration, Master of Nursing, Master of Public Affairs, Master of Regional Planning, 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 graduate admission 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.gradschool.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 Study Bulletin 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.

Select Graduate Admission Program

The SGA Program is to encourage outstanding undergraduate students with top academic records to remain at WSU for a graduate degree by (1) extending an early offer of admission and support to outstanding candidates, (2) removing financial and other costs associated with regular application, and (3) potentially reducing the total number of combined semesters required to complete the undergraduate/graduate degree (without reducing the credit requirements for either). Additional information can be found at http://www.gradschool.wsu.edu/selectgradadmissprog.html.

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, or 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 Graduate School's graduation requirements necessary for the completion of a graduate degree are those 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. Departmental requirements for graduation are those in effect at the time the student files a program of study.

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, the department chair, and 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.

Work for the doctoral degree should be completed within three years of the date of the satisfactory completion of the preliminary examination, and within ten years of the earliest course applied toward the degree. 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 should be consulted concerning qualifications, eligibility, and application procedures. Assistantship appointments require part-time service. Students on appointment must maintain regular full-time 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 and who reside in the state of Washington while attending WSU may qualify for some form of tuition waiver. Forms for assistantship or fellowship applications are included as part of the general application for admission to the Graduate School.

As most appointments are made by April 1 for the following academic year, it is desirable to have applications completed as early as possible, but no later than by 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
509-335-4805
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 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 lifelong love of learning, as well as skills in critical thinking, writing, public presentation, and information literacy. By completing an enriched series of small classes, seminars, and a thesis, students admitted into the Honors College 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 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, intellectual achievement, motivation, and extracurricular and community involvement may 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 website.

COLLEGE OF LIBERAL ARTS

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

The college contributes to a liberal education through courses in the arts, communication, humanities, and social sciences for undergraduate students in all colleges at WSU, regardless of major. As a bearer of the tradition of liberal education, the College of Liberal Arts places much importance upon soundly conceived and well-taught courses developed to give a properly balanced presentation of the basic areas of human endeavor. Undergraduate students are assured a nucleus of courses in arts, communication, humanities, and social sciences; knowledge of at least one foreign language; and selection of a concentration from a broad array of major and minor fields. Graduate students are assured of advanced study and research in their selected fields.

The College of Liberal Arts offers programs that prepare students for professions and careers. Graduate as well as undergraduate degrees are offered by most departments.

A number of curricula are offered to give preprofessional training (such as pre-law) to students who will then enter professional schools.

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 subject-matter field within the College of Liberal Arts. The specific requirements for certification and teaching majors and minors for K-12 teachers are listed under the Department of Teaching and Learning.

Admission

The general requirements for admission to the College of Liberal Arts are the same as those for Washington State University. Some departments have selective admissions criteria requiring demonstration of artistic achievement and/or completion of specific courses with specific grades prior to certification of the respective major.

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.

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 graduation requirements of the catalog.

Departmental units offering degrees and majors include anthropology, communication, comparative ethnic studies, English (includes DTC), fine arts, foreign languages and cultures, history (includes social studies), music, philosophy, political science, psychology, sociology, speech and hearing sciences, theatre arts and drama, and women’s studies. Additional degree curricula offered, listed alphabetically in this catalog, include American studies, Asia program, criminal justice, and general studies (classics, humanities, international area studies, liberal arts, linguistics, religious studies, and social sciences).

The Pre-law Advising Center is located in the Department of Political Science. Other pre-law curricula are offered through such departments and programs as communication, comparative ethnic studies, English, history, philosophy, and sociology.

Degrees

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

Bachelor of Arts

Bachelor of Fine Arts

Bachelor of Music

Bachelor of Science

Master of Fine Arts

Master of Science

Doctor of Philosophy

COLLEGE OF NURSING/INTERCOLLEGIATE COLLEGE OF NURSING

Anne Hirsch, Interim Dean
W. 2917 Ft. George Wright Drive
SPOKANE, WA 99224-5291
509-324-7337
www.nursing.wsu.edu

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 700 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 to 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 for students initiating the study of nursing 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 January 15 for fall admission and August 5 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 throughout the year. Students are encouraged to contact an advisor at their 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 National League for Nursing 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 15 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:

- Bachelor of Science in Nursing
- Master of Nursing
- Doctor of Nursing Practice
- Family nurse practitioner
- Psychiatric/mental health nurse practitioner

**COLLEGE OF PHARMACY**

James P. Kehrer, Dean
Wegner Hall, Room 108
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 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 advanced experiential training. 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 annually in the 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. Although a bachelor's degree is not required for admission, pre-requisites for admission require more than two years of pre-pharmacy education. 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. 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 Affairs at 509-335-1402.

**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)
- 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, cytogeneric, photosynthesis, mechanisms of chemical reactions, biological evolution and ecology, environmental remediation, mathematical modeling of biological and physical processes, numerical analysis, reliability and fatigue studies, 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:

<table>
<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></td>
<td>Biology</td>
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<td>Biotechnology</td>
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<td>Chemistry</td>
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<td>Environmental Science</td>
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<td></td>
<td>General Studies</td>
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<td></td>
<td>Genetics and Cell Biology</td>
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<tr>
<td>Master of Science</td>
<td>Biology</td>
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<td></td>
<td>Botany</td>
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<tr>
<td></td>
<td>Chemistry</td>
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<td></td>
<td>Environmental Science</td>
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<td></td>
<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></td>
<td>Microbiology</td>
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<tr>
<td>Master of Regional Planning</td>
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<tr>
<td>Doctor of Philosophy</td>
<td>Biology</td>
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<td></td>
<td>Botany</td>
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<tr>
<td></td>
<td>Chemistry</td>
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<td></td>
<td>Environmental and Natural Resource Sciences</td>
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<tr>
<td></td>
<td>Genetics and Cell Biology</td>
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<td></td>
<td>Geology</td>
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<td>Mathematics</td>
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<td></td>
<td>Microbiology</td>
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<td></td>
<td>Molecular Plant Sciences</td>
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<td></td>
<td>Physics</td>
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<td></td>
<td>Plant Physiology</td>
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<td></td>
<td>Statistics</td>
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<td></td>
<td>Zoology</td>
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</tbody>
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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
Bustad Hall, Room 110
509-335-9515
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, U.S. 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.

Complete information on admission and program requirements may be found in this catalog under departmental listings and on our web site.

Degrees

The College of Veterinary Medicine offers courses of study leading to the following degrees:

<table>
<thead>
<tr>
<th>Degree</th>
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<tbody>
<tr>
<td>Doctor of Veterinary Medicine</td>
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<tr>
<td>Bachelor of Science in Veterinary Science</td>
</tr>
<tr>
<td>Bachelor of Science in Neuroscience</td>
</tr>
<tr>
<td>Master of Science in Veterinary Science</td>
</tr>
<tr>
<td>Master of Science in Neuroscience</td>
</tr>
<tr>
<td>Doctor of Philosophy (Neuroscience and Veterinary Science)</td>
</tr>
</tbody>
</table>
**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 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 making application 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). Specific quotas of students from Idaho have been established under the terms of this agreement.
Distance Education and Regional Campuses

CENTER FOR DISTANCE AND PROFESSIONAL EDUCATION

Muriel Oaks, Dean
106 Van Doren Hall, Pullman, WA 99164-5210
www.distance.wsu.edu

The Center for Distance and Professional Education (CDPE—formerly Extended University Services) provides leadership for academic outreach activities at Washington State University through distance degree programs and continuing education for professionals. Many programs are delivered entirely online, while others are conducted face-to-face in locations around Washington and nationwide. All reflect the WSU commitment to excellence in both content and support services.

CDPE includes two programming units that have separate responsibilities but shared support services. Distance Degree Programs (DDP) offers degree programs delivered in distance formats. Professional Education (PE—formerly Conferences and Professional Programs) provides professional development programs in both face-to-face and distance formats. Certificate programs are available through both units.

Program Strengths—

• The research and academic expertise of Washington State University stand behind the institution's distance programs.
• WSU’s distance and professional programs, faculty, and students have received national awards for innovation and excellence.
• Academic programs and degrees offered through distance learning carry credit that is identical to that offered on all WSU campuses.
• The institution’s renowned faculty develop and teach these courses, and significant interaction among students and faculty are built into all online programs.

Opportunities to connect to the WSU community are available to students. These include online student government, events at Learning Centers and in students’ communities, the Alumni Association, and mentoring programs. In addition, on-campus experiences are offered several times each year for students to visit the WSU Pullman campus and interact with faculty, support staff, and fellow students.

Opportunities are available for students to participate in professional education programs offered by CDPE and to interact with real-world audiences. Professional education programs delivered through CDPE showcase the strengths of WSU research and instruction and raise awareness of important societal issues for professional audiences beyond the campus. For all CDPE programs, support services assure that students and professional clients receive the help they need to succeed in their programs.

Distance Degree Programs—Working in partnership with WSU academic departments and colleges, DDP delivers undergraduate online degree completion programs that are an ideal choice for working adults who are seeking a program that offers both flexibility and high quality. Distance degree programs are provided in seven academic areas: social sciences, criminal justice, humanities, management and operations, management information systems, human development, and nursing. Online graduate programs are available in agriculture and in engineering and technology management. A combination of online and on-site delivery options are used to provide graduate and undergraduate programs related to teaching. Additional programs are currently under development.

Staff provide course delivery, admissions and registration, and advising services. Call 800-222-4978 or visit our Web site at www.distance.wsu.edu for more information.

Distance degree programs are provided in seven academic areas—social sciences, criminal justice, humanities, management and operations, management information systems, human development, and nursing. Online graduate programs are available in agriculture and in engineering and technology management. A combination of online and on-site delivery options are used to provide graduate and undergraduate programs related to teaching. Additional programs are currently under development.

Professional Education—CDPE provides educational programs for professionals in the workplace throughout the state, region, and nation through its Professional Education unit. Programs are offered through a variety of delivery methods such as seminars, conferences, and hands-on workshops. Professional Education also offers certificate programs using technology such as the Internet, satellite, and videoconferencing. Customized programs are created by WSU faculty and outside content experts, in partnership with Professional Education staff, to provide up-to-date knowledge and skills to professionals in business, industry, education, government, non-profit organizations, and trade associations. An experienced and creative staff provides a full range of support services, including marketing and publicity, registration and financial management, and vendor contract negotiation and coordination. WSU students are frequently offered opportunities to attend and participate in these educational programs for working professionals, providing connections to real world experiences to enhance the students’ learning environment at WSU.

Call 800-942-4978 or visit our Web site at capps.wsu.edu for information about available programs.

Certificate Programs—Certificate programs provide a series of related courses leading to the development of new professional skills. CDPE offers a number of these programs through online and other formats:

• The online Instructional Design Certificate was developed for those interested in gaining skills in design, media development, and assessment.
• The Professional Writing Certificate, delivered entirely online, allows students to develop a base of skills and knowledge for effective communication in the professional worlds they want to enter or have already entered.
• Two online certificates related to telework are available, one for managers and supervisors of teleworkers, and another for the teleworkers themselves.
• Two additional online certificates are offered for those who manage volunteer workers.
• Other customized, non-credit, certificate programs in both online and face-to-face formats are available, and new programs are under development.
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 its urban setting to create an ideal atmosphere for learning. WSU Spokane’s 50-acre Riverpoint campus in the University District is immediately adjacent to the vibrant downtown area and bordered by the Spokane River and Centennial Trail. A new academic center—including a library, classrooms and student space—was opened in the fall of 2006. A new home for the WSU Intercollegiate College of Nursing is under construction and is scheduled to open in 2008. The developing campus features modern buildings that house state-of-the-art classrooms, design studios, labs, and clinics. 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 and technology management, exercise science, health policy and administration, interior design, landscape architecture, speech and hearing sciences, and teaching. 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 are also offered at WSU Spokane. Spokane is the site of the final stages of professional education for all WSU students enrolled in nursing and pharmacy, and for many students enrolled in architecture, interior design, and landscape architecture.

Baccalaureate completion degree programs are offered in exercise physiology and metabolism, an interdisciplinary degree exploring the interaction between diet and exercise and the role this plays in human health; leadership and professional studies, a degree that combines social and behavioral sciences to build leadership and critical thinking skills. Students may also articulate from approved community college programs to complete a baccalaureate degree in interior design.

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 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 arenas.

The Interdisciplinary Design Institute, a unique collaboration among the design disciplines at WSU, advances knowledge to enhance the quality of people’s lives in the built and natural environment. The Design Institute approach fosters collaborative learning and offers real-life design project challenges that build students’ professional skills while serving the community. Faculty and students at the Design Institute regularly win national and international awards for their work.
Situated on 300 acres along the banks of the Columbia River in Richland, Washington State University Tri-Cities delivers undergraduate and graduate education to approximately 1200 students in the Mid-Columbia Basin and surrounding region. Undergraduate degrees may be earned in business administration, computer science, digital technology and culture, elementary education, English, environmental science, humanities, general science, general physical science, history, horticulture (viticulture and enology), mechanical engineering, nursing, and psychology. The campus works very closely with the region's community colleges to ensure that students can easily transfer to WSU Tri-Cities and has a number of collaborative degree programs wherein students simultaneously take courses at both WSU Tri-Cities and a community college.

Students may earn graduate degrees in biology, business administration, chemistry, computer science, education (principal & administration, counseling, educational leadership, elementary, secondary, and literacy), electrical engineering, environmental engineering, environmental science, mechanical engineering, and nursing. Doctoral degrees are offered in computer science, electrical engineering, environmental science, and mechanical engineering.

Much of the research conducted at Washington State University Tri-Cities responds to the unique needs of the region. The Bioproducts, Sciences and Engineering Laboratory, operated jointly with the Pacific Northwest National Laboratory, conducts world class research in bioproducts, bioenergy and the development of technologies to convert biomass to products and fuels. The WSU Center for Bioproducts and Bioenergy on the Tri-Cities campus provides a joint partnership with the Pacific Northwest National Laboratory, statewide, national and international industry in bioproducts and bioenergy research and education. The Food and Environmental Quality Laboratory and the Washington State Pest Management Resource Service are also located on the campus. This laboratory conducts research to assist farmers, orchardists, and other pesticide users with residue analyses and risk-benefit assessments. The University’s Southeast Regional Extension offices provide a variety of service-based expertise to the citizens of the region. The administrative offices for the United States Transuranium and Uranium Registries are housed on the campus. Cooperative research and internship opportunities are available with the U.S. Department of Energy’s Pacific Northwest National Laboratory and other Hanford Site contractors. The site contractors provide valuable expertise, facilities, and equipment not available at most universities. The WSU Tri-Cities’ library and the Hanford Technical Library are co-located on campus in the Consolidated Information Center, providing greater access to library material for WSU students and faculty and Hanford Site personnel.

Public radio and television programs serve the Mid-Columbia Basin region via KFAE-FM and KTNW-TV. The Yakima Valley/Tri-Cities Mathematics, Engineering, Science Achievement (MESA) program prepares youth in underrepresented groups to pursue education and careers in math, engineering, and science. The Harvest of Hope Gaining Early Awareness and Readiness for Undergraduate Program (GEAR UP) and the One Vision GEAR UP Program help youths and their families understand the importance of higher education and how to prepare for college. Business LINKS provides counseling, training, and mentoring to emerging and expanding businesses. It also coordinates the Business Information Center.
WSU Vancouver began offering lower-division curriculum to freshman and sophomore students in fall 2006. The general education curriculum features core courses that blend disciplines.

Located on 351 scenic acres about ten miles north of Portland, Washington State University Vancouver provides quality education to residents of local southwest Washington and Oregon communities. With a student population of just over 2,300, WSU Vancouver offers a small college atmosphere with public University access. Since its establishment in 1989, WSU Vancouver has graduated more than 6,000 alumni, many of whom currently live and work in the region.

Degree Programs—Fourteen bachelor’s, nine master’s degrees, and one doctorate degree are attainable through freshman, sophomore, junior, senior, and graduate-level courses in more than 35 fields of study. Bachelor’s degrees include anthropology, biology, business administration, computer science, 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 (MT).

The WSU Vancouver University Scholars 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 3.3.

Campus and Student Life—The campus features seven 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 20,000 books, access to more than 75 databases, 9,000 full-text online journals, and extensive Web connections that make the library a personal gateway to worldwide research materials.

Student life centers around a variety of activities, including an active student government and a number of clubs and organizations. In addition, a child development program on campus provides onsite 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. Diverse topics such as artificial intelligence, marine ecology, environmental regulation, workplace behaviors, and computer-aided engineering are taught by professors with expertise in their respective fields. Quality instruction and an emphasis on individual attention also characterize the WSU Vancouver student experience, with a faculty student ratio of approximately 14 to 1.

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.

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.

Solid partnerships with the local business community, health and human services and other public agencies, local school districts, and community foundations enable WSU Vancouver to maintain a vital link to the community and the public it is serving.

WSU Vancouver, University Graduation Requirements

The General Education Program at WSU Vancouver

Introduction to the General Education Program

The WSU Vancouver General Education Program is designed to promote students’ academic learning about specific disciplines as well as to prepare them for the critical and collaborative demands of the 21st century. As students investigate and explore important personal, scientific, and societal questions, their course work is organized around six central learning goals:

1. Critical Thinking
2. Quantitative and Symbolic Reasoning
3. Information Literacy
4. Communication
5. Self in Society
6. Specialty

How the Learning Goals Work for Students

The learning goals work to organize and enhance the overall learning experience at WSU Vancouver. The General Education Program provides opportunities for students in all majors to engage in learning communities that connect to real world problems. Science, social science, arts, and humanities are integrated and linked to a unifying course theme. Students receive a “big picture” view of the world, learning how vastly different disciplines (such as science and history) relate to each other and to real life.

1. Interdisciplinary Core [V] – The core course(s) introduce students to the culture of learning communities and to the University’s learning goals. The integrated approach is intended to model the connections that students will continue to employ throughout their work in general education and their major, as well as enhance their capacity for life-long learning. Students may take one 6-credit class or two 3-credit classes.

Communication and Information Literacy

Students learn to write, speak, and listen to achieve intended and meaningful understanding. Students also gain foundational skills in using a systematic approach to accessing, evaluating, and using information.

2. Communication [W] – Students address real-world problems and issues through written, verbal, and visual communication. Students take one 3-credit class.

3. E-Portfolio [E] - Students use the disciplinary content of other courses to build the learning outcomes into their educational and employment goals. E-Portfolio courses provide foundational skills and experiences in using a systematic approach to accessing, evaluating, and using information. Each student will create his or her own digital repository for class papers, projects, and recommendations for future use in academic or professional careers. Students must take three 1-credit classes.
Quantitative and Symbolic Reasoning
Students analyze and communicate with mathematical and symbolic concepts. They critically evaluate the quantitative and symbolic information used to represent and draw inferences regarding problems.

4. Quantitative and Symbolic Reasoning [N] – Students use quantitative and symbolic reasoning to address real-world issues. Students take one 3 or 4-credit class.

Critical Thinking (The Sciences)
Students engage knowledge in the sciences to practice critical thinking, to examine evidence and context, and to reason ethically and creatively.

5. Sciences [B], [P] – Students build foundations in scientific method, science inquiry, and critical thinking. Minimum 7 credits; students must take one 3-credit [B] course and one 3-credit [P] course. Students must take at least one lab course.

Critical Thinking (The Social Sciences, Arts, and Humanities)
Students engage knowledge from the social sciences, arts, and humanities to think critically, to examine evidence and context, and to reason ethically and creatively.

6. Arts and Humanities [H], [G] – 3 credits—Students explore the cultural and social underpinnings of knowledge in the arts and humanities toward participating in the building of inclusive communities.

7. Social Sciences [S], [K] – 3 credits – Students explore the cultural and social underpinnings of knowledge in the social sciences toward participating in the building of inclusive communities.

Self in Society
Students explore values, assumptions, and biases from diverse sources, learn to critically assess knowledge, and participate in communities beyond the classroom.

8. World Civilizations [A] – 6 credits (GE 110 and 111) – Students explore how events and patterns in the present and past have structured human societies and interactions with their contexts.

9. Intercultural Studies [I], [G], [K] – 3 credits – Students critically assess their own core values, cultural assumptions, and biases in relation to those held by other individuals, cultures, and societies.

10. American Diversity [D] – Students learn to employ self-understanding and effective interaction with others of diverse cultures, values, perspectives, and realities. The American Diversity requirement will be met by passing a designated [D] course which also meets a GER requirement in another area at the same time.

11. Tier III Community Engagement [T] – 3 credits – Students engage in a culminating experience at the senior level and have an opportunity to work collaboratively and to integrate and apply their learning to community concerns, practicing personal integrity, citizenship, and service to others.

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, with a minimum of 30 credits at WSU, must be taken at the 300-400 level. Other specific requirements are listed above in relation to specific learning outcomes.

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

<table>
<thead>
<tr>
<th>Interdisciplinary Core [V]</th>
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<tbody>
<tr>
<td>Communication [W]</td>
<td>3 cr</td>
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<tr>
<td>E-Portfolio [E]</td>
<td>3 cr</td>
</tr>
<tr>
<td>Quantitative &amp; Symbolic Reasoning [N]</td>
<td>3 cr</td>
</tr>
<tr>
<td>Sciences [B], [P], [L]</td>
<td>7 cr</td>
</tr>
<tr>
<td>Arts and Humanities [H], [G]</td>
<td>3 cr</td>
</tr>
<tr>
<td>Social Sciences [S], [K]</td>
<td>3 cr</td>
</tr>
<tr>
<td>Intercultural Studies [I], [G], [K]</td>
<td>3 cr</td>
</tr>
<tr>
<td>American Diversity [D]</td>
<td>3 cr</td>
</tr>
<tr>
<td>Tier III [T]</td>
<td>3 cr</td>
</tr>
<tr>
<td><strong>TOTAL HOURS</strong></td>
<td>40 cr</td>
</tr>
</tbody>
</table>

Students must choose one course that is also designated as an American Diversity [D] course. This requirement adds no credit hours to the General Education Program as American Diversity courses also fulfill the GERs in another area.

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. Please be aware that there are some major-specific exceptions that impact GERs; you are strongly recommended to consult your advisor and review your major-specific catalog pages.

Transfer Students
Students entering WSU Vancouver fall 2006 or later with a transferable AA degree will have all lower division general education requirements satisfied. These students will be required to take the upper division e-portfolio credits and the Tier III class to complete the University graduation requirements. 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. Fulfillment of lower-division General Education Requirements will be granted to students who have been awarded the Direct Transfer Associate (DTA) degree from a Washington community college. The Associate of Arts—Oregon Transfer degree (AAOT) 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.) These students will still be responsible for meeting the other requirements for graduation, including those in the college and major department. 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. For details on specific degrees, consult the Office of Admissions.

General Education Designation for Incoming WSU Vancouver Students
All students whose first enrollment at WSU Vancouver will be fall 2006 or after will be required to complete the WSU Vancouver general education program, EXCEPT in the following situations:

1. Co-admit (including institute) students who were co-admitted prior to fall 2006*
2. Students with an approved bachelor’s degree from an accredited institution (NO general education requirements)

*Group 1 students would follow the Pullman general education program but must complete within eight years of being co-admitted. These students may opt to complete the WSU Vancouver general education program if they so desire.

All credits refer to semester credits.

General Education Requirements [GER]*

<table>
<thead>
<tr>
<th>Interdisciplinary Core [V]</th>
<th>6 cr</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE 105 and GE 106</td>
<td>3 cr</td>
</tr>
<tr>
<td><strong>Communication [W]</strong></td>
<td>3 cr</td>
</tr>
<tr>
<td>(Communication and Information Literacy)</td>
<td></td>
</tr>
<tr>
<td><strong>Communication Proficiency [E]</strong></td>
<td>1 cr</td>
</tr>
<tr>
<td>(Communication and Information Literacy)</td>
<td></td>
</tr>
<tr>
<td>GE 101 or 301</td>
<td>1 cr</td>
</tr>
<tr>
<td>GE 303</td>
<td>1 cr</td>
</tr>
<tr>
<td>GE 401</td>
<td>1 cr</td>
</tr>
<tr>
<td><strong>Mathematics Proficiency [N]</strong></td>
<td>3 cr</td>
</tr>
<tr>
<td>(Quantitative and Symbolic Reasoning)</td>
<td></td>
</tr>
<tr>
<td><strong>The Sciences [B][P]</strong></td>
<td>7 cr</td>
</tr>
<tr>
<td>(Critical Thinking)</td>
<td></td>
</tr>
<tr>
<td>Choose one lab science [L]</td>
<td>4 cr</td>
</tr>
<tr>
<td>Choose one [P] course</td>
<td>3 cr</td>
</tr>
<tr>
<td>Students must take one [B] course and one [P] course.</td>
<td></td>
</tr>
<tr>
<td><strong>Arts and Humanities [H,G]</strong></td>
<td>3 cr</td>
</tr>
<tr>
<td>(Critical Thinking)</td>
<td></td>
</tr>
<tr>
<td><strong>Social Sciences [S,K]</strong></td>
<td>3 cr</td>
</tr>
<tr>
<td>(Critical Thinking)</td>
<td></td>
</tr>
<tr>
<td><strong>World Civilizations [A]</strong></td>
<td>6 cr</td>
</tr>
<tr>
<td>(Self in Society)</td>
<td></td>
</tr>
<tr>
<td>GE 110 and GE 111</td>
<td></td>
</tr>
</tbody>
</table>

Spokane, Tri-Cities, and Vancouver Campuses
### 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.

**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.

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**Intercultural Studies [I, G, K] 3 cr**  
(Self in Society)

**American Diversity [D] 3 cr**  
(Self in Society)  
Meets both the [D] requirement and another GER course designation.

**Tier III Course [T] 3 cr**  
(Self in Society)

* Note: Students who transfer to WSU Vancouver with an approved associate's degree will have all lower-division general education requirements satisfied. These students will be required to complete the upper-division requirements as listed below:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Proficiency [E]</td>
<td>3 cr</td>
</tr>
<tr>
<td>(Communication and Information Literacy)</td>
<td></td>
</tr>
<tr>
<td>GE 301</td>
<td>1 cr</td>
</tr>
<tr>
<td>GE 303</td>
<td>1 cr</td>
</tr>
<tr>
<td>GE 401</td>
<td>1 cr</td>
</tr>
</tbody>
</table>

**Tier III Course [T] 3 cr**  
(Self in Society)

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**ADDITIONAL REQUIREMENTS**

**Residency Requirement:**
Minimum 30 semester credits must be completed at WSU.

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

**Writing in the Major [M]:**
Two courses required for all majors. Consult your major department for details.

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

**Minimum University Graduation Requirements:**
120 total semester credit hours, a 2.0 cumulative grade point average, and completion of all college and major requirements.
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 may 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. Ten credit hour 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.

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.

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/. Prereqs 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 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) 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, neuroscience, nursing, pharmacy, psychology, and sport management 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, 9 of which must be in upper-division course work and taken in taken in residence at WSU or through WSU-approved education abroad or educational exchange courses. 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 student who desires to complete a 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 requirements for graduation, including the 300-400-level requirements, University Writing Portfolio, the minimum hours for the first degree, as well as the requirements of the General Education Program. See Appendix, Rule 54.1

Certificates

An officially recorded undergraduate certificate is a document issued by WSU, displaying the WSU seal and president's signature. Certificates are issued to students who have completed a course of study that meets the guidelines and has been approved by the Faculty Senate. To have the undergraduate certificate recorded on the official transcript, the student must apply for the certificate through the Registrar's Office and pay the $50 fee.

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. All outstanding incomplete work (including grades of I, X, and blank/no grade) must be completed and posted to the official transcript prior to the conferment of the undergraduate or professional degree. Undergraduates or graduate students 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. All outstanding incomplete work (including grades of I, X, and blank/no grade) must be completed and posted to the official transcript prior to the conferral of the undergraduate or professional degree. An X grade may also be used when no final grade is reported due to instructor's illness or absence. 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Grade</th>
<th>Grade points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 301</td>
<td>3</td>
<td>A</td>
<td>12.0</td>
</tr>
<tr>
<td>Bio S 422</td>
<td>3</td>
<td>C-</td>
<td>5.1</td>
</tr>
<tr>
<td>Soc 420</td>
<td>3</td>
<td>B+</td>
<td>9.9</td>
</tr>
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<td>Mus 491</td>
<td>2</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>Soc 499</td>
<td>4</td>
<td>S</td>
<td></td>
</tr>
</tbody>
</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.

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 over the Web. Final grades for all students are available online at myWSU.

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 form of payment for the per copy fee. 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. Copies of international transcripts in which WSU possesses the original copy may be requested using the International Transcript Request form, also available online.

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 F grades earned by pass, fail enrollees will not be included in computing the GPA; however, the 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:

- 1-44 credits: six courses
- 45-59 credits: five courses
- 60-74 credits: four courses
- 75-89 credits: three courses
- 90 and above credits: two courses

Departments and programs may deny their majors permission to take courses on a pass, fail basis 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 pass, fail 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 submit an application for reinstatement to the Student Advising and Learning Center. A certified major who has been interviewed by SALC 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 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. An undergraduate student who has been reinstated after becoming deficient under Rules 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.
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/atms.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 an undergraduate or professional 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 in good standing to apply. 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.

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.

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 postsecondary 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 apply for admission prior to fall 2009 and 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
required for graduate students); (3) undergraduate students may be allowed to
complete remaining requirements at another institution under Rule 114(a)
(4) Graduate students may be allowed to take courses or conduct research at
another institution when approved by the student's graduate committee and
the Graduate School. In all cases, all financial obligations are the responsibility
of 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. The faculty has established minimum
standards in terms of credit hours, grade points, and distribution requirements
within the General Education Program. For complete listing of all the rules
pertaining to graduation, see the Appendix, Rules 106-137.

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 an [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. Vancouver students should refer to the Vancouver campus
information. 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 ad-
ditional 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 Stud-
ies [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 Or-
egan community college.
The General Education Program

The General Education Program is the core of the undergraduate curriculum. While the greater part of students’ courses of study will be devoted to their major fields, the General Education curriculum provides a degree of balance between the narrow focus of the major and the broader traditional objectives of higher education. General Education is intended to accommodate needs and objectives not adequately served by academic specialization. Accordingly, the program offers a wide variety of elective choices and provides many individual pathways through the curriculum. General Education is designed to serve the following aims:

Providing a Foundation for the Major

To function well in the workplace, it is necessary to see beyond it. The General Education curriculum therefore encourages integration of students’ anticipated careers within larger, more encompassing, and multiple contexts. Exposure to different values, perspectives, and cultural traditions is a valuable preparation for the kinds of work that college graduates do, and this knowledge can significantly enrich students’ awareness of the context and meaning of their careers.

Realizing Individual Student Potentials

A traditional purpose of higher education is to foster and develop potentials in the individual; hence, General Education offers opportunities for personal enrichment and serves a variety of intellectual, aesthetic, and creative interests. The curriculum provides opportunities for introspection and testing one’s own values as well for enlarging one’s vision. The several kinds of study required in General Education are designed to contribute to the development of higher intellectual skills, such as critical thinking and essential communications skills.

Preparation for Membership in the Community

General Education prepares students for citizenship in a free society. For these purposes, the curriculum represents an effort to define the ever-changing body of valuable common knowledge. Shared knowledge and values growing out of common educational experience help to bind society together and make communication possible. Writing proficiency and information literacy are accordingly high priorities at WSU, and the foundation of these skills is laid in the General Education courses. The curriculum also provides opportunities for hands-on service learning and emphasizes study of the relevant past as a way for students to understand and engage contemporary issues.

Integration of Knowledge

The breadth requirements in General Education reflect our historical experience of how new knowledge has been acquired and how it is likely to be acquired in the future. Consequently, the curriculum facilitates the acquisition of a working knowledge of a broad range of scholarly methods, from the arts and humanities to the sciences. One of the goals of General Education is to assist students to understand the characteristic ways of acquiring knowledge in different fields of study and their methods of verification and communication. Increasingly, higher education is about learning how to learn; the General Education curriculum therefore prepares students for continued life-long learning, equipping them with research skills and a general competence in evaluating information and constructing knowledge.

Pursuant to these aims, the faculty has established minimum standards in terms of credit hours, grade points, distribution requirements, and has organized the curriculum to help students achieve the following learning goals:

General Education Learning Goals

As outcomes of their education, WSU students should be able to:

1. Reason critically and creatively
   - Define, analyze, and solve problems
   - Integrate and synthesize knowledge from multiple sources
   - Assess the accuracy and validity of findings and conclusions
   - Understand how one thinks, reasons, and makes value judgments, including ethical and aesthetic judgments
   - Understand diverse viewpoints, including differing philosophical and cultural perspectives

2. Use quantitative and symbolic reasoning
   - Understand and apply quantitative principles and methods in the solution of problems
   - Draw conclusions from computational and symbolic representations in order to check the logic and validity of statements and models
   - Employ symbolic reasoning to understand and interpret the variety of discourses in the arts, humanities, and social sciences

3. Conduct self-directed learning projects (i.e., acquire information literacy)
   - Effectively frame and solve problems
   - Demonstrate knowledge of research and information retrieval strategies in the library and on the internet
   - Evaluate sources and data

4. Communicate clearly, concisely and effectively
   - Critically analyze written information
   - Show awareness of contexts, audiences, styles, and conventions
   - Use correct Standard English

5. Demonstrate knowledge of self in diverse cultural contexts and understand the relationship of one’s own society to other societies and groups
   - Understand how people think, reason, and make value judgments
   - Understand distinctions between value assertions and statements of fact
   - Demonstrate broad knowledge of the human past, including the historical development of human knowledge in global contexts
   - Demonstrate broad knowledge of differing philosophical and cultural perspectives
   - Demonstrate knowledge of historical and contemporary systems of political, religious, ethical, and aesthetic values
   - Understand perspectives linked to race, gender, ethnicity in American society and in international contexts
   - Understand the interactions of society and the environment
   - Recognize one’s responsibilities, rights, and privileges as a citizen

6. Acquire knowledge in a variety of scholarly modes and contexts and recognize diverse disciplinary viewpoints and methods
   - Understand and apply scientific principles and methods
   - Understand and apply quantitative principles and methods
   - Understand and apply the principles and methods of the arts and humanities
   - Understand and apply the principles and methods of the social sciences

The General Education Requirements (GERs) are a subset of the University Requirements (see below) and apply to all undergraduate students except those in the Honors College. The goals of the program derive from WSU’s Six Goals for the Baccalaureate.
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>Written Communication [W] 3</td>
<td>Arts and Humanities [H], [G], [I] 3</td>
<td>total hours 40</td>
</tr>
<tr>
<td>Mathematics Proficiency [N] 3</td>
<td>Social Sciences [S], [K], [L] 3</td>
<td></td>
</tr>
<tr>
<td>Sciences [Q], [R] 3</td>
<td>Arts and Humanities/Social Sciences [H], [G], [S], [K], [L] 3</td>
<td></td>
</tr>
<tr>
<td>Tier III: 3 semester credit hours</td>
<td>Intercultural Studies [I], [G], [K] 3</td>
<td></td>
</tr>
<tr>
<td>Tier III Course 3</td>
<td>Sciences [B], [P], [F] 7</td>
<td></td>
</tr>
</tbody>
</table>

1A total of 9 hours of Arts and Humanities and Social Sciences with a minimum of 3 in either.
2At least 3 hours in Biological Science and 3 hours in Physical Science plus 1 additional hour for three clock hours per week of laboratory.
3To 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 General Education requirements are organized in three tiers. Tier I is designed for first-year students and addresses essential knowledge and skills needed for success in the rest of the undergraduate curriculum. Tier I consists of core courses required of all entering first-year students 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]).

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, Biological and Physical Sciences, and Communication Proficiency. Some more advanced (300-level) Tier II courses provide further experience with scholarly approaches, methods, and issues. Courses in this tier will commonly be taken in the student's first two years of study. Tier I and Tier II courses may be taken concurrently. Tier II courses are designated at the 100, 200, or 300 level to indicate the level of academic challenge.

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

In addition to meeting the requirements of the major programs, students are required to earn a minimum of 120 total semester credits, with a grade point average of 2.0 or better; and earn a minimum of 40 semester credits at the 300-400-level.

Students are also required to take a minimum of 40 semester credit hours distributed among the General Education categories listed below and to fulfill the Writing Program requirements (i.e. University Writing Portfolio and Writing in the Major), that are integrated with or that supplement the General Education Program. (For a more detailed account of the requirements, policies on transfer credit and catalog limitations, etc., see the "Summary of Academic Policies" section of this catalog.)

1. Communication Proficiency [C]—6 hours including at least 3 in written communication [W] and 3 of [W] or [C]. Prior to enrollment in freshman writing courses, all students must take 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 Assessment Office, CUE 305, 509-335-7959.

2. World Civilizations [A]—6 hours (GenEd 110 and 111).

3. American Diversity [D]—The American Diversity requirement must be met by passing a designated [D] course which also meets a GER requirement in another category, such as social sciences or arts and humanities.

4. Mathematics Proficiency [N]—This requirement can be satisfied by passing a designated course or courses in mathematics, through satisfactory performance on an Advanced Placement examination, or by satisfying the requirements in another category, such as social sciences or arts and humanities.

5. Arts and Humanities [H], [G], [S], [K], [L]—3 hours minimum; a total of 9 hours must be completed within Arts and Humanities and Social Sciences.

6. Social Sciences [S], [K]—3 hours minimum; a total of 9 hours must be completed within Arts and Humanities and Social Sciences.

7. Intercultural Studies [I], [G], [K]—3 hours of designated course work.

8. Sciences [B], [P], [F]—10 hours including at least 3 hours in Biological Sciences and 3 hours in Physical Sciences, plus 1 credit hour of laboratory [L] in either. 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. Tier III [T]—3 hours of designated upper-division work outside the major. Tier III courses for General Education credit must be taken outside a student's major. Students may take Tier III courses only after earning approximately 60 total hours and meeting specific course prerequisites.

10. The University Writing Portfolio—Successful completion of the WSU Writing Portfolio is a requirement for graduation at WSU. This is an upper-division requirement not satisfied by approved AA/AS degrees. Students must fulfill this requirement—sometimes called the “junior Writing Portfolio”—once they have earned 60 credit hours or junior standing. To complete the Writing Portfolio, students must submit three papers they have written in response to college course assignments and also take a timed writing examination consisting of two writing exercises. The Writing Portfolio is a mid-career assessment of student progress and a diagnostic about student readiness for upper division writing challenges. Therefore the Portfolio must be completed before a student enrolls in Writing in the Major [M] courses. For more information, visit www.juniortfolio.wsu.edu.

11. Writing in the Major [M]—The Writing in the Major requirement is a universal major requirement. While not formally part of the General Education Program, the Writing in the Major requirement builds upon the general education requirements in the several academic areas of their chosen specialty. Once they have certified in a major, all undergraduates must complete at least two Writing in the Major courses in their major fields of study. [Consult the catalog description of your anticipated major for details.]

Total hours of General Education: 40+.
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.

General Education Categories and Course Lists

COMMUNICATION PROFICIENCY [W, C] (6 hours, including at least 3 in written communication [W] and 3 in either [W] or [C])

The Communication Proficiency requirement prepares students to communicate effectively orally or in writing in a variety of circumstances and occasions; to understand and respond appropriately to specific audiences; and to know and be able to use specific genres and conventions, including those of academic discourse. Writing or speaking from sources requires a general understanding of how information is created and organized, as well as the ability to access, evaluate, synthesize and incorporate information into presentations or documents. Communication in higher education requires students to master the elements of information literacy. Courses in this category provide extensive practice in those skills as well as experience in self-evaluation, revision, and critiquing the work of peers. This requirement supports the communication proficiency, critical thinking, and information literacy goals outlined in the Six Learning Goals for the Baccalaureate. Other General Education courses also support these learning goals by providing opportunities for writing and revision.

WRITTEN COMMUNICATION PROFICIENCY [W]

<table>
<thead>
<tr>
<th>Tier I</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 101</td>
<td></td>
<td>Introductory Writing</td>
</tr>
<tr>
<td>Engl 103</td>
<td></td>
<td>Rhetorics of Change</td>
</tr>
<tr>
<td>Engl 105</td>
<td></td>
<td>Composition for ESL Students</td>
</tr>
<tr>
<td>Engl 198</td>
<td></td>
<td>English Composition Honors</td>
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</table>

<table>
<thead>
<tr>
<th>Tier II</th>
<th>Course Code</th>
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<tbody>
<tr>
<td>Engl 200</td>
<td></td>
<td>Expository Writing</td>
</tr>
<tr>
<td>Engl 201</td>
<td></td>
<td>Writing and Research</td>
</tr>
<tr>
<td>Engl 298</td>
<td></td>
<td>Writing and Research Honors</td>
</tr>
<tr>
<td>Engl 301</td>
<td></td>
<td>Writing and Rhetorical Conventions</td>
</tr>
<tr>
<td>Engl 302</td>
<td></td>
<td>Writing About Literature</td>
</tr>
<tr>
<td>Engl 402</td>
<td></td>
<td>Technical and Professional Writing</td>
</tr>
<tr>
<td>Engl 403</td>
<td></td>
<td>Technical and Professional Writing ESL</td>
</tr>
<tr>
<td>Phil 200</td>
<td></td>
<td>Writing and Reasoning</td>
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COMMUNICATION PROFICIENCY [C]

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

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, including the fundamentals of academic discourse. Course work is designed to engage students in integrated study of the social, political, philosophical, and religious systems of the major world civilizations, along with their interactions, achievements, and common problems. The World Civilizations courses introduce students to methods of historical inquiry and engage them in the processes of constructing interpretations of the past. These courses build foundational skills in communication, interpretation, information literacy, and critical thinking, while establishing a knowledge base for students to understand themselves in relation to society. Students may explore the various emphases in the sections of World Civilizations by visiting the World Civilizations home page.

| Note: Transfer students entering the University with junior standing (60 semester credits or more) may choose to substitute designated 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). |

<table>
<thead>
<tr>
<th>Tier I</th>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>GenEd 110</td>
<td></td>
<td>World Civilizations I</td>
</tr>
<tr>
<td>GenEd 111</td>
<td></td>
<td>World Civilizations II</td>
</tr>
</tbody>
</table>

AMERICAN DIVERSITY [D]

Courses addressing American Diversity seek to engage students in critical inquiry into contemporary and historical issues of social and cultural diversity in the United States. Understanding our complexly constituted American community is the focus of this requirement; thus, “D” courses explore the construction of differences in American society and provide an overview of the social, economic, and political forces that have shaped the experience of diverse communities throughout U.S. history. Coursework introduces students to issues of power and privilege, systems of inequality, and forms of institutionalized discrimination within American society. Courses in this category provide conceptual frameworks for analysis of these topics; they are designed to raise questions, stimulate thought and reflection, and challenge stereotypes and myths.

Many D courses are grounded in specific social science or humanities disciplines, while others employ integrated and multidisciplinary approaches. In acquiring knowledge about themselves and American society, students will learn to think critically and to construct knowledge through a variety of scholarly methods and approaches, and to expand their communication and interpretive skills.

| Note: Courses meeting the American Diversity requirement are distributed in several of the General Education categories and are double-designated with other distribution requirements, such as Humanities, Social Sciences, or Tier III. |

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Am St/Engl/Hist/W St 216</td>
<td>S American Cultures</td>
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</tr>
<tr>
<td>Am St 473</td>
<td>T Arts in American Cultures</td>
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</tr>
<tr>
<td>Am St 474</td>
<td>T Social Movements and US Culture</td>
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<tr>
<td>Am St/Engl 475</td>
<td>T Digital Diversity</td>
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</tr>
<tr>
<td>AMT 417</td>
<td>T Social and Psychological Aspects of Dress</td>
<td></td>
</tr>
<tr>
<td>Anth/W St 214</td>
<td>S Gender and Culture in America</td>
<td></td>
</tr>
<tr>
<td>Anth 327/CES 378</td>
<td>S Contemporary Native Peoples of the Americas</td>
<td></td>
</tr>
<tr>
<td>Anth 334</td>
<td>T Time and Culture in the Northwest</td>
<td></td>
</tr>
<tr>
<td>CES 111</td>
<td>S Introduction to Asian/Pacific American Studies</td>
<td></td>
</tr>
<tr>
<td>CES 131</td>
<td>S Introduction to Black Studies</td>
<td></td>
</tr>
</tbody>
</table>
The General Education Program

### MATHEMATICS PROFICIENCY [N] (0-6 hours)
The purpose of the Mathematics Proficiency requirement is to establish a foundation of understanding of mathematics beyond arithmetic and algebraic manipulations and an understanding of the uses of mathematics in applications to real-world problems. Courses in this category assist students in understanding and applying quantitative principles and methods in the solution of problems and drawing conclusions from computational and symbolic representations. Courses in mathematics help students acquire concepts and skills in abstract, logical, and quantitative thinking. Students learn to reason critically and creatively to solve problems.

**Note:** 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 Code</th>
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<tbody>
<tr>
<td>Math 140</td>
<td>Mathematics for Life Scientists</td>
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<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</td>
<td>Mathematics for Elementary School Teachers I</td>
</tr>
<tr>
<td>Math 252</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)

The production of art, creative expression, and the use of symbol systems and conventions to explore value and meaning are fundamental human activities. Similarly, interpretation of such systems or products is also an essential human skill—and one of our primary ways of making sense of experience. Music, theatre, the visual and kinetic arts offer direct participation in these activities while providing contexts and perspectives by which the arts acquire meaning. The humanities disciplines—philosophy, literature, history, and the study of language—offer multiple methods of interpretation and analysis. These disciplines also engage students in the history of ideas, acquaint them with significant cultural traditions, and give them direct experience of important cultural achievements. Study in the arts and humanities encourages students to explore their own cultural traditions and enables them to participate more fully in their own or other cultures.

Students who engage in these disciplines learn to use various modes of rational inquiry to understand complex human artifacts and, ultimately, to raise questions about the nature of rational inquiry itself. Thus, study in these disciplines develops students' communication abilities and interpretive and critical thinking skills.

#### Tier II Arts and Humanities [H]

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Arch/F 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>
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<tr>
<td>CES/Engl 220</td>
<td>[D] Introduction to Multicultural Literature</td>
</tr>
<tr>
<td>CES 235/Hist 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>Eng 108</td>
<td>Introduction to Literature</td>
</tr>
<tr>
<td>Eng 199</td>
<td>English Composition and Literature Honors</td>
</tr>
<tr>
<td>Eng 205</td>
<td>Introduction to Shakespeare</td>
</tr>
<tr>
<td>Eng 209</td>
<td>Readings in English Literature</td>
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<tr>
<td>Eng 210</td>
<td>Readings in American Literature</td>
</tr>
<tr>
<td>Eng 305</td>
<td>Shakespeare</td>
</tr>
<tr>
<td>Eng 306</td>
<td>Shakespeare</td>
</tr>
<tr>
<td>Eng 308/W St 306</td>
<td>Introduction to Literary Criticism</td>
</tr>
<tr>
<td>Eng 361</td>
<td>Everyday Rhetorics</td>
</tr>
<tr>
<td>Eng/W St 309</td>
<td>Women Writers</td>
</tr>
<tr>
<td>Eng/Hum 335</td>
<td>The Bible as Literature</td>
</tr>
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</table>
Course work in the Social Sciences offers valuable perspectives on individual and collective human behavior. These disciplines cover a broad range of subjects, from psychology to sociology and political science, to history and anthropology and economics. Generally speaking, the social sciences examine mental processes, culture, and behavior; study the structures of society and how individuals, groups, institutions, and societies interact with each other and with their environments; and reconstruct how societies functioned in the past. The Social Sciences employ diverse methods and approaches, both qualitative and quantitative, as well as a variety of explanatory theories and models.

SOCIAL SCIENCES [S, K#] [3-6 hours]

The Social Sciences apply scientific principles and methods to understand individual and collective human behavior. These disciplines cover a broad range of subjects, from psychology to sociology and political science, to history and anthropology and economics. Generally speaking, the social sciences examine mental processes, culture, and behavior; study the structures of society and how individuals, groups, institutions, and societies interact with each other and with their environments; and reconstruct how societies functioned in the past. The Social Sciences employ diverse methods and approaches, both qualitative and quantitative, as well as a variety of explanatory theories and models.

Course work in the Social Sciences offers valuable perspectives on individual and collective human behavior within a variety of social contexts and environments, while providing analytical tools for understanding these processes. In acquiring knowledge about themselves and society, students will learn to think critically, to use quantitative methods to assess validity, and to construct knowledge through a variety of scholarly methods and approaches. They also assist students to expand their communication skills in self-directed learning projects.
### Tier II Social Sciences [S]

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Ag Ec 201</td>
<td>Economics in Agriculture</td>
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<tr>
<td>Ag Ec/Hist 320</td>
<td>American Agriculture and Rural Life</td>
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<tr>
<td>Am St/Engl/Hist/W St 216</td>
<td>[D] American Cultures</td>
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<tr>
<td>Anth 198</td>
<td>Anthropology Honors</td>
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<tr>
<td>Anth/W St 214</td>
<td>[D] Gender and Culture in America</td>
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<tr>
<td>Anth 327/CES 378</td>
<td>[D] Contemporary Native Peoples of the Americas</td>
</tr>
<tr>
<td>Anth 330</td>
<td>Origins of Culture and Civilization</td>
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<tr>
<td>Anth 334</td>
<td>[D] Time and Culture in the Northwest</td>
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<tr>
<td>Anth/For L 350</td>
<td>Speech, Thought, and Culture</td>
</tr>
<tr>
<td>CES 111</td>
<td>[D] Introduction to Asian/Pacific American Studies</td>
</tr>
<tr>
<td>CES 131</td>
<td>[D] Introduction to Black Studies</td>
</tr>
<tr>
<td>CES/Psych 203</td>
<td>Introduction to Critical Psychology</td>
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<tr>
<td>CES 204</td>
<td>Critical Studies in Whiteness</td>
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<tr>
<td>CES 254</td>
<td>[D] Comparative Latino/a Cultures</td>
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<tr>
<td>CES/Hist/W St 255</td>
<td>[D] Chicana/o History</td>
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<td>CES 260</td>
<td>[D] Race and Racism in US Popular Culture</td>
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<td>CES/Hist 280</td>
<td>[D] Race and the Law in American History</td>
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<tr>
<td>CES 302</td>
<td>[D] Social Psychology of Prejudice</td>
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<tr>
<td>CES 335/Hist 313</td>
<td>Civil Rights Movement in America</td>
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<tr>
<td>CES 337</td>
<td>[D] Black Social Psychology</td>
</tr>
<tr>
<td>CES/W St 372/Anth 312</td>
<td>[D] Native American Women in Traditional and Contemporary Societies</td>
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<tr>
<td>CES 380</td>
<td>[D] Immigration and Citizenship in the Global Economy</td>
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<tr>
<td>Com 101</td>
<td>Mass Communications and Society</td>
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<td>Crm J 205</td>
<td>Realizing Justice in a Multicultural Society</td>
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<td>CRS/H D 334</td>
<td>Principles of Community Development</td>
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<tr>
<td>CRS 335</td>
<td>Cross-National Perspectives on Community</td>
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<tr>
<td>CRS 336</td>
<td>Agriculture, Environment, and Community</td>
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<tr>
<td>Dist/Soc 250</td>
<td>[D] Perspectives on Disability</td>
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<tr>
<td>Econ 101</td>
<td>Fundamentals of Microeconomics</td>
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<td>Econ 102</td>
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<td>Contemporary German Culture</td>
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<td>H D 101</td>
<td>Human Development Across the Lifespan</td>
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<td>H D 204</td>
<td>Family Systems: Understanding Family Interaction</td>
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<td>H D 350</td>
<td>[D] Diversity in Contemporary Families</td>
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<td>Hist 110</td>
<td>American History to 1877</td>
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<td>Hist 111</td>
<td>American History Since 1877</td>
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<td>Hist 150</td>
<td>[D] Peoples of the United States</td>
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<td>Hist 198</td>
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<td>Hist 290</td>
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<td>Hist/W St 298</td>
<td>[D] History of Women in American Society</td>
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<td>Hist 325</td>
<td>[D] Food in the United States</td>
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<td>Hist/W St 350</td>
<td>European Women's History, 1400-1800</td>
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<td>Hist/W St 380</td>
<td>History of Medicine</td>
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<tr>
<td>Hist 381</td>
<td>Science in Western Civilization Through Newton</td>
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<tr>
<td>Hist 382</td>
<td>Science in Western Civilization from Newton to Einstein</td>
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<td>NATRS 312</td>
<td>[D] Natural Resource and Society</td>
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<td>Pol S 101</td>
<td>American National Government</td>
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<tr>
<td>Pol S 102</td>
<td>Introduction to Comparative Politics</td>
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<td>Pol S 103</td>
<td>International Politics</td>
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<td>Pol S 198</td>
<td>Political Science Honors</td>
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<td>Pol S/W St 305</td>
<td>Gender and Politics</td>
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<td>Pol S 333</td>
<td>Development of Marxist Thought</td>
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<tr>
<td>Psych 105</td>
<td>Introductory Psychology</td>
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<td>Psych 198</td>
<td>Psychology Honors</td>
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<tr>
<td>Psych/CES 203</td>
<td>Introduction to Critical Psychology</td>
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<tr>
<td>Psych 309</td>
<td>[D] Cultural Diversity in Organizations</td>
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<tr>
<td>Psych/W St 324</td>
<td>[D] Psychology of Women</td>
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<tr>
<td>Psych/Soc 350</td>
<td>Social Psychology</td>
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<td>Psych 361</td>
<td>Principles of Developmental Psychology</td>
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<tr>
<td>Soc 101</td>
<td>[D] Introduction to Sociology</td>
</tr>
<tr>
<td>Soc 102</td>
<td>[D] Social Problems</td>
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<tr>
<td>Soc/W St 150</td>
<td>[D] Marital and Sexual Life Styles</td>
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<tr>
<td>Soc 198</td>
<td>Introduction to Sociology Honors</td>
</tr>
<tr>
<td>Soc 315</td>
<td>Ecology of Human Societies</td>
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<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>
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<tr>
<td>Soc 343</td>
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</tr>
<tr>
<td>Soc 345</td>
<td>[D] Sociology of Sport</td>
</tr>
<tr>
<td>Soc 346</td>
<td>[D] Sociology of Education</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>
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<tr>
<td>Soc 362</td>
<td>[D] Juvenile Delinquency</td>
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<tr>
<td>Soc 373</td>
<td>[D] Media, Culture, and Society</td>
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<tr>
<td>Soc 380</td>
<td>[D] Gender and Work</td>
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<tr>
<td>Soc/W St 383</td>
<td>[D] Sociology of Sexuality</td>
</tr>
<tr>
<td>Soc/W St 384</td>
<td>[D] Sociology of Gender</td>
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<tr>
<td>W St 200</td>
<td>[D] Gender and Power: Introduction to Women's Studies</td>
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<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>
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<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>
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### Tier II Social Sciences or Intercultural Studies, [K]

<table>
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<th>Course Title</th>
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<tbody>
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<td>Anth 101</td>
<td>General Anthropology</td>
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<tr>
<td>Anth 203</td>
<td>Peoples of the World</td>
</tr>
<tr>
<td>Anth 302</td>
<td>Childhood and Culture</td>
</tr>
<tr>
<td>Anth/Asia/Hist 306</td>
<td>Cultures and Peoples of the Middle East</td>
</tr>
<tr>
<td>Anth 307</td>
<td>Contemporary Cultures and Peoples of Africa</td>
</tr>
<tr>
<td>Anth 309</td>
<td>Cultural Ecology</td>
</tr>
<tr>
<td>Anth/W St 316</td>
<td>Gender in Cross Cultural Perspective</td>
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<tr>
<td>Anth 320/CES 377</td>
<td>Native Peoples of North America</td>
</tr>
<tr>
<td>Anth 331/CES 376</td>
<td>America Before Columbus</td>
</tr>
<tr>
<td>Anth 390</td>
<td>Maya, Aztec and Inca Civilizations</td>
</tr>
<tr>
<td>Asia 301</td>
<td>East Meets West</td>
</tr>
<tr>
<td>CES 211/Hist 201</td>
<td>Asian Pacific/American History</td>
</tr>
<tr>
<td>CRS 335</td>
<td>Cross-National Perspectives on Community</td>
</tr>
<tr>
<td>Hist 230</td>
<td>Latin America, The Colonial Period</td>
</tr>
<tr>
<td>Hist 231</td>
<td>Latin America, The National Period</td>
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<tr>
<td>Hist/Asia 270</td>
<td>Introduction to South Asian Culture</td>
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<tr>
<td>Hist/Asia 271</td>
<td>Southeast Asian History: Vietnam to Indonesia</td>
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<tr>
<td>Hist/Asia 275</td>
<td>Introduction to East Asian Culture</td>
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<tr>
<td>Hist 308/CES 375</td>
<td>North American Indian History, Precontact to Present</td>
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<tr>
<td>Hist 331</td>
<td>Cultural History in Latin America</td>
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<td>Women in Latin American History</td>
</tr>
<tr>
<td>W St 220</td>
<td>Women, Science, and Culture</td>
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</tbody>
</table>

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

The Intercultural Studies requirement the study of diversity in American society and is intended to enlarge students’ international perspectives and increase their sensitivity to cultural differences around the globe. Intercultural Studies courses foster an awareness of the diversity of human values and encourage a coherent view of cultures different from our own. Courses in this category encourage students to understand the histories, cultures, values, and politics outside of the United States and Europe. Course work addresses non-Western experiences, identities, and institutions, and fosters critical engagement with the economic, political, and social processes that have created our global community. Some Intercultural Studies courses focus on U.S. ethnic minorities of non-Western origin as a way to global understanding.

Many Intercultural Studies courses are grounded in specific social science or humanities disciplines, while others employ integrated and multidisciplinary approaches. In acquiring knowledge about global society, students will learn to think critically and to construct knowledge through a variety of scholarly methods and approaches, and to expand their communication and interpretive skills.
**Note:** Substitution policy for 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. 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.

### Tier II Inter还款 Studies [I, G, K]

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
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<td>[K] General Anthropology</td>
</tr>
<tr>
<td>Anth 130</td>
<td>Great Discoveries in Archaeology</td>
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<tr>
<td>Anth 201</td>
<td>[G] Art and Society</td>
</tr>
<tr>
<td>Anth 203</td>
<td>[K] Peoples of the World</td>
</tr>
<tr>
<td>Anth 301</td>
<td>[G] Arts and Media in Global Perspective</td>
</tr>
<tr>
<td>Anth 302</td>
<td>[K] Childhood and Culture</td>
</tr>
<tr>
<td>Anth/Asia/Hist 306</td>
<td>[K] Cultures and Peoples of the Middle East</td>
</tr>
<tr>
<td>Anth 307</td>
<td>[K] Contemporary Cultures and Peoples of Africa</td>
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<tr>
<td>Anth 309</td>
<td>[K] Cultural Ecology</td>
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<tr>
<td>Anth/CES 325</td>
<td>Traveling Cultures: Tourism in Global Perspective</td>
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<tr>
<td>Anth/W St 316</td>
<td>[K] Gender in Cross Cultural Perspective</td>
</tr>
<tr>
<td>Anth 320/CES 377</td>
<td>Native Peoples of North America</td>
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<tr>
<td>Anth 331/CES 376</td>
<td>[K] East Meets West</td>
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<tr>
<td>Asia 301</td>
<td>Introduction to Comparative American Cultures</td>
</tr>
<tr>
<td>CES 101</td>
<td>Introduction to Comparative American Cultures - Honors</td>
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<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>
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<tr>
<td>CES 240</td>
<td>Global Indigenous Issues</td>
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<tr>
<td>CES 313/Engl 311</td>
<td>[G] Asian Pacific/American Literature</td>
</tr>
<tr>
<td>CES/Anth 325</td>
<td>Traveling Cultures: Tourism in Global Perspective</td>
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<tr>
<td>CES 331/Engl 321</td>
<td>[G] African American Literature</td>
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<tr>
<td>CES 335/Engl 345</td>
<td>[G] Chicano/Chicana Literature</td>
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<tr>
<td>CES 373/Engl 341</td>
<td>[G] Native American Literature</td>
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<tr>
<td>Chin/Asia/Japn 111</td>
<td>[G] Asian Film</td>
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<tr>
<td>Com 321</td>
<td>Intercultural Communication</td>
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<tr>
<td>Crop/SoilS 360</td>
<td>World Agricultural Systems</td>
</tr>
<tr>
<td>CES 335</td>
<td>[K] Cross-National Perspectives on Community Growth</td>
</tr>
<tr>
<td>Engl 222</td>
<td>[G] World Literature in English</td>
</tr>
<tr>
<td>Engl/CES 316</td>
<td>[G] South Asian Film</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 271</td>
<td>[K] Southeast Asian History: Vietnam to Indonesia</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/Asia 274</td>
<td>[G] Introduction to East Asian History</td>
</tr>
<tr>
<td>Hist/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>Women in Latin American History</td>
</tr>
<tr>
<td>Hist/Asia 370</td>
<td>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 339</td>
<td>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>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)

Science is the application of critical and systematic thinking to empirical observation and experiment. The scientific approach is our fundamental way of understanding matter and the universe, the Earth, and living things. It is also the basis of most new technological developments. Familiarity with the sciences encourages adoption of views about the world that are subject to revision on the basis of additional information. Accordingly, intellectual integrity and honesty are integral to scientific study, while the ability to distinguish between testable and non-testable ideas is an essential skill. Courses in the science categories provide students with an understanding of particular scientific terms, methods, concepts, and theories, and introduce them to recent scientific and technological developments and their implications. Students in these courses learn ways of taking measurements, gathering data, and organizing information; they learn to use mathematics to construct scientific models and to test hypotheses and models.

General Education science courses teach students to think critically, to assess the accuracy and validity of findings and conclusions, to understand and apply quantitative principles to solve problems, and to acquire knowledge through a variety of scholarly methods and approaches.

### 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>Entom 150</td>
<td>Insects, Science, and World Cultures</td>
</tr>
<tr>
<td>Geol 150</td>
<td>Conflict and Debate in Geological Sciences</td>
</tr>
<tr>
<td>Hort 150</td>
<td>Plants and Society</td>
</tr>
<tr>
<td>Phys 150</td>
<td>Physics and Your World</td>
</tr>
<tr>
<td>PI P 150</td>
<td>Molds, Moldews, Mushrooms: The Fifth Kingdom</td>
</tr>
<tr>
<td>Sci 101</td>
<td>Origins in the Natural World</td>
</tr>
<tr>
<td>Sci 102</td>
<td>Dynamic Systems in the Natural World</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>
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</thead>
<tbody>
<tr>
<td>Anth 260</td>
<td>(L) 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</td>
<td>(L) General Biology</td>
</tr>
<tr>
<td>Biol 105</td>
<td>(L) Biological Science Laboratory</td>
</tr>
<tr>
<td>Biol 106</td>
<td>(L) Introductory Biology: Organismal Biology</td>
</tr>
</tbody>
</table>
Many Tier III courses employ an interdisciplinary or multidisciplinary approach to topical issues or other subject matter, while others are grounded in specific methodologies from the sciences, social sciences, arts and humanities.

Tier III courses may address all six of the learning goals or focus on only a few. Students engage in challenging learning projects in which they effectively frame and solve problems, demonstrate knowledge of research and information retrieval strategies, and evaluate sources and data outside the familiar knowledge domains of their majors.

Tier III courses have as a general prerequisite 60 hours of course work; students should be aware that specific courses may carry additional prerequisites.

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

### 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, as well as a solid background in mathematics. Students are expected to understand the fundamental structures of matter and the principles governing the transformations of matter and energy. Familiarity with intellectual history or the history of science may also be useful.

**TIER III COURSES USING SOCIAL SCIENCE METHODS**

These courses address many current issues as well as topics of perennial interest. Preparatory work for these courses should include study of social science methods of analysis and some familiarity with historical and cultural studies. Basic understanding of the roles of class, gender, and ethnicity, of the nature and functions of social institutions, and of political and economic processes is also useful.

**TIER III COURSES [T] (3 hours)**

This upper-division requirement is designed to assist students in integrating information from diverse sources and to construct knowledge in a subject and discipline apart from their majors. Tier III courses teach students how to approach a new field of knowledge, as they will most likely be required to do in their future professional lives, and to find their way successfully. Tier III courses require students to gather, synthesize, and think critically about information, and to write about topics previously unfamiliar to them. The aim is to help students become lifelong, self-directed learners.
CES/Pol S 474 African Politics  
CES 440 [D] Social Justice and American Culture  
CES 444 White Power Movements and Ideologies  
CES 453 [D] Health Issues for Chicanos/as  
CES/W St 454 La Chicana in U.S. Society (Prereq junior standing)  
CES/CoPsy 457 [D] Chicano/Latino Psychology (Prereq Psych 105, EdPsy 401, Soc 101, H D 101, or interview with instructor)  
CES 465 Race, Science, and Society  
CES 470 Federal Native American Resource Settlement Models  
CES 475/Hist 408 [D] Indians of the Northwest  
Com 471/CES 404 [D] Stereotypes and the Media  
ComSt/CES 421 Intercultural Processes in Global Contexts  
Cpt S 401 Computers and Society (Prereq Phil 260 or Soc 101; completion of writing portfolio)  
Crm J/W St 403 Violence Toward Women (Prereq Crm J 101 or W St 200)  
CRS 431 [D] The Demographics of American Diversity (Prereq junior standing)  
DisSt 489 [D] Disability and Society  
Econ 418 Global Capitalism Today: Perspectives and Issues (Prereq GenEd 111; Econ 101 or 102)  
H D 403 Families in Poverty (Prereq H D 101, 204 or 6 hours in H D or social sciences)  
Hist 409 American Environmental History  
Hist 425 The City in History  
Hist 426 Workers Across North America  
Hist 435 European Expansion Overseas, 1400-1800  
Hist 436 Imperialism in the Modern World  
Hist 444 The Renaissance  
Hist/Rus 466 History of the Cold War, 1944-present  
Hist/Asia 473 The Middle East and the West  
Hist/Asia 479 History of East Asian Economic Development Since 1945  
Hist 483 Technology and Social Change to 1950  
Hist 491 History of World Trade  
Hist 492 Cultural Appetites: Food in World History  
Hist 494 Global Environmental History  
Hist 495 Space, Place, and Power in History: Historical Geography in Global Perspective  
Jour 405 The Costs of Free Speech (Prereq junior standing)  
Pol S 428 Issues in Political Psychology (Prereq Pol S 101 or Psych 105)  
Pol S 430 The Politics of Natural Resource and Environmental Policy  
Psych 492 Psychology of Language (Prereq Psych 105)  
Psych 493 Cultural Issues in Psychology  
Soc 415 Ecology of Human Societies (Prereq Anth 101 or Soc 101; ES/RP 101)  
Soc 430 Society and Technology  
Soc 433 Urbanization and Community Organization (Prereq 3 credits 300-400-level social science)  
Soc 442 Political Sociology  
Soc 455 Human Values (Prereq Psych 105 or Soc 101; Psych 350)  
Soc 474 Collective Behavior and Social Movements (Prereq three 300-400-level Soc or Pol S courses)  
W St 406 Women and Work (Prereq W St 200)  
W St/CES 408 [D] Introduction to Critical Race Feminism (Prereq W St 200 or CES 101)  
W St 460 Gender, Race, and Nature in America (Prereq W St 200 or 300)  
W St/Soc 484 [D] Lesbian and Gay Studies (Prereq Soc 101, 102, or W St 200)
Departments, Requirements, and Courses

Department of Aerospace Studies

www.det505.com
Kruegel 417
509-335-5598

Colonel D. Salmon; Captain W. Babbitt, Captain S. Babbitt; Captain W. Beaurt.

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 $400 per month stipend.

Minors

Aerospace Minor

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aero 101</td>
<td>The Foundations of USAF I 1 Prereq c// in Aero 103 required. Introduces students to the Air Force and AFROTC.</td>
</tr>
<tr>
<td>Aero 102</td>
<td>The Foundations of USAF II 1 Prereq c// in Aero 103 required. Introduces students to the Air Force and AFROTC.</td>
</tr>
<tr>
<td>Aero 103</td>
<td>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.</td>
</tr>
<tr>
<td>Aero 201</td>
<td>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.</td>
</tr>
<tr>
<td>Aero 202</td>
<td>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.</td>
</tr>
<tr>
<td>Aero 203</td>
<td>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.</td>
</tr>
<tr>
<td>Aero 291</td>
<td>Four-Week Field Training Course 2 Prereq junior standing: Aero 101, 102, 201, 202, by interview only. Intensive study of military education, experience in leadership and management at an active Air Force installation.</td>
</tr>
<tr>
<td>Aero 292</td>
<td>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.</td>
</tr>
<tr>
<td>Aero 391</td>
<td>For Active Duty I 3 Prereq c// in Aero 413 required. Examines general aspects of air and space power through a historical perspective.</td>
</tr>
<tr>
<td>Aero 392</td>
<td>For Active Duty II 3 Prereq c// in Aero 413 required. Examines general aspects of air and space power through a historical perspective.</td>
</tr>
<tr>
<td>Aero 499</td>
<td>Special Problems V 1-4 May be repeated for credit.</td>
</tr>
</tbody>
</table>

Program in Aging

Johnson Tower 501
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
Bachelor of Science in Agricultural and Food Systems (Pullman campus)

In each major, emphasis is placed on gaining a solid background in the agricultural sciences, including learning to work with and in the complexity of agriculture and food systems. All students take a core set of classes in order to develop a broad interdisciplinary background while also studying specific subjects that prepare graduates for their chosen fields. An internship related to the student’s focus area is included in these requirements. Students are encouraged to participate as part-time employees in research programs and seek professional internships for applied learning experiences. Scholarships are available based on ability, need, and interest. There are multiple opportunities for students to interact personally and professionally with faculty, staff, and other students outside of class through a wide range of activities, including numerous student clubs, field and/or lab jobs in research programs, and other events.

For complete information about all options and majors within the degree programs, please see our web page at: afs.wsu.edu.

Transfer Students

Students planning to transfer to the AFS degree program from outside WSU should take courses which meet general university requirements, and consult with AFS program faculty for further guidance.

Master of Science in Agriculture (Pullman and Distance Delivery)

The emphasis of the program is on the agricultural professional, practitioner, and educator; its applications reflect the increased need for prepared individuals to apply new and emerging technologies and scientific findings. This degree offers the practitioner the opportunity to continue their education while they continue employment either inside or outside of the Pullman area. Available through both thesis and non-thesis options.

Schedules of Studies

Students must complete 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 BUSINESS AND TECHNOLOGY SYSTEMS - AGRI-FOOD BUSINESS MANAGEMENT OPTION (120 HOURS)

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFS 101</td>
<td>3</td>
</tr>
<tr>
<td>Chem 101 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>EconS 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 201</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFS 101</td>
</tr>
<tr>
<td>Chem 101 [P] (GER)</td>
</tr>
<tr>
<td>EconS 101 [S] (GER)</td>
</tr>
</tbody>
</table>

Third Year

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFS 101</td>
</tr>
<tr>
<td>Chem 101 [P] (GER)</td>
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<tr>
<td>EconS 101 [S] (GER)</td>
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</table>

Fourth Year

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFS 101</td>
</tr>
<tr>
<td>Chem 101 [P] (GER)</td>
</tr>
<tr>
<td>EconS 101 [S] (GER)</td>
</tr>
</tbody>
</table>

A total of 46 agriculture credits are required. 15 credits must be from one department and 9 credits from another department.

AGRICULTURAL BUSINESS AND TECHNOLOGY SYSTEMS - AGRI-FOOD PRODUCTION MANAGEMENT OPTION (120 HOURS)

The Agri-Food Production Management option is designed for students who wish to prepare for careers requiring flexible, 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.

First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFS 101</td>
<td>3</td>
</tr>
<tr>
<td>Chem 101 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>EconS 101 [S] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>
### AGRICULTURAL BUSINESS AND TECHNOLOGY SYSTEMS - COMMUNICATION OPTION (120 HOURS)

Students in this major and option gain a science-based overview of agriculture in combination with one of several program options in Communications. This option is offered in cooperation with the School of Communication.

Students declaring this major must select one of the focus areas, and complete the requirements of the Agricultural and Food Systems curriculum. They must also earn a minimum of 30 hours in the School of Communication, including any communications courses used to satisfy agriculture requirements.

A total of 46 agriculture credits are required.

#### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A S 101</td>
<td>3</td>
</tr>
<tr>
<td>AFS 201</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 120 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Econ 355 [S] (GER)</td>
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#### Second Term

<table>
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<th>Hours</th>
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</thead>
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<tr>
<td>ComS 102 [C] or H D 205 [C] (GER)</td>
<td>3</td>
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<tr>
<td>CropS 102</td>
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<tr>
<td>CropS 360 [I] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 312 [S,D] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 201 [B] (GER)</td>
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Complete Writing Portfolio

#### Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFS 301</td>
<td>3</td>
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<tr>
<td>AgFM 305</td>
<td>3</td>
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<tr>
<td>Hort 202</td>
<td>4</td>
</tr>
<tr>
<td>Stat 212 [N], Math 140 [N], 171 [N] or 202 [N] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
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#### Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>AFS 401</td>
<td>3</td>
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<tr>
<td>Biol 372 or NATRS 300 [B] (GER)</td>
<td>3-4</td>
</tr>
<tr>
<td>Electives</td>
<td>5-6</td>
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<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRS 336 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Seminar</td>
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</tr>
<tr>
<td>Electives</td>
<td>5</td>
</tr>
</tbody>
</table>

### AGRICULTURAL BUSINESS AND TECHNOLOGY SYSTEMS - TECHNOLOGY OPTION (122 HOURS)

Students in this major and option gain a science-based overview of agriculture and food systems, with a focus on technology and its use. The Technology Option 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 Technology Option 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 Technology.

#### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFS 201</td>
<td>3</td>
</tr>
<tr>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Com 245</td>
<td>3</td>
</tr>
<tr>
<td>Econ 101 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Stat 212 [N] (GER)</td>
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#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biol 107 or Biol 120 [B] (GER)</td>
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<tr>
<td>Com 295</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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<tr>
<td>SoilS 201 [B] (GER)</td>
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Complete Writing Portfolio

#### Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AFS 301</td>
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</tr>
<tr>
<td>CropS 102</td>
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<tr>
<td>Option Elective</td>
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<tr>
<td>Elective</td>
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#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>300-400-level Ag Elective</td>
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#### Fourth Year

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<th>Course</th>
<th>Hours</th>
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<tr>
<td>CRS 336 [S] (GER)</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Option Electives</td>
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#### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AFS 401</td>
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</tr>
<tr>
<td>CropS 360 [I] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 300 [B] (GER)</td>
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</tr>
<tr>
<td>Option Elective</td>
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#### Second Term

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<th>Course</th>
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<tr>
<td>Tier III Course [T] (GER)</td>
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</tr>
<tr>
<td>Option Electives</td>
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</table>

#### AGRICULTURAL BUSINESS AND TECHNOLOGY SYSTEMS - TECHNOLOGY OPTION (122 HOURS)

Students in this major and option gain a science-based overview of agriculture and food systems, with a focus on technology and its use. The Technology Option 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 Technology Option 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 Technology.

#### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AFS 201</td>
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</tr>
<tr>
<td>Biol 106 [B] (GER)</td>
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</tr>
<tr>
<td>Com 245</td>
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<tr>
<td>Econ 101 [S] (GER)</td>
<td>3</td>
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<td>Stat 212 [N] (GER)</td>
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#### Second Term

<table>
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<tr>
<th>Course</th>
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<td>Biol 107 or Biol 120 [B] (GER)</td>
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<td>Com 295</td>
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<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<td>Psych 105 [S] (GER)</td>
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<tr>
<td>SoilS 201 [B] (GER)</td>
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Complete Writing Portfolio

#### Third Year

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>AFS 301</td>
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<tr>
<td>CropS 102</td>
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<td>Option Elective</td>
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<tr>
<td>Elective</td>
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#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Ag Elective</td>
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#### Fourth Year

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<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>CRS 336 [S] (GER)</td>
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<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Option Electives</td>
<td>9</td>
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<table>
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<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AFS 401</td>
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<td>CropS 360 [I] (GER)</td>
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<td>NATRS 300 [B] (GER)</td>
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<tr>
<td>Option Elective</td>
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<tr>
<td>300-400-level Ag Seminar</td>
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#### Second Term

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<th>Course</th>
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<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Option Electives</td>
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<th>Hours</th>
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<td>AgFM 305</td>
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<tr>
<td>MgtOp 301</td>
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<td>Elective [H,G,S,K] (GER)</td>
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#### Second Year

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<td>AFS 201</td>
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<tr>
<td>AgFM 305</td>
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<tr>
<td>AgFM 314</td>
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<td>Biol 120 [B] (GER)</td>
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#### Third Year

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<th>Course</th>
<th>Hours</th>
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<tr>
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<tr>
<td>AFS 201</td>
<td>3</td>
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<tr>
<td>AgFM 305</td>
<td>3</td>
</tr>
<tr>
<td>AgFM 314</td>
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<td>Biol 120 [B] (GER)</td>
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<table>
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<th>Course</th>
<th>Hours</th>
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<tr>
<td>Electives</td>
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For complete information, visit afs.wsu.edu/ag-com.
**Fourth Year**

**First Term**
- AFS 401 3
- AgTM 451 3
- Crop 360 [I] (GER) 3
- Mktg 360 3
- Electives 3

**Second Term**
- AgTM 405 2
- AgTM 416 2
- Engl 402 [W] (GER) 3
- Tier III Course [T] (GER) 3
- Electives 3

**AGRICULTURAL EDUCATION (137 HOURS)**

The agricultural education major prepares students to teach high school agricultural education. A minimum of 45 hours in agricultural sciences is required for graduation.

This course of study leads to the degree of Bachelor of Science in Agricultural and Food Systems with a major in Agricultural Education. The program includes minimum requirements for initial teacher certification. Students electing a major in Agricultural Education must complete at least 6 hours in 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, 42 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.)

For complete information, visit afs.wsu.edu/AgEd.

**First Year**

**First Term**
- A S 101 3
- AFS 101 3
- Chem 101 [P] (GER) 4
- ComSt 102 [C] or H D 205 [C] (GER) 3
- Engl 101 [W] (GER) 3

**Second Term**
- AgTM 201 3
- Chem 102 [P] (GER) 4
- GenEd 110 [A] (GER) 3
- Psych 105 [S] (GER) 3
- Stat 212 [N] / Math Proficiency [N] (GER) 4
- T & L 1.300 1

**Second Year**

**First Term**
- AFS 201 3
- Biol 106 [B] (GER) 4
- Econ 101 [S] (GER) 3
- Engl 201 [W] (GER) 3
- SoilS 201 3
- T & L 1.300 2

**Second Term**
- AFS 401 3
- Ag Ed 342 3
- Ag Ed 440 [M] 2
- Ag Ed 471 3
- T & L 470 3
- Tier III Course [T] (GER) 3
- Ag Ed Elective 3

**Third Year**

**First Term**
- AFS 301 3
- Ag Ed Elective 3
- EconS 350 or 351 2
- T & L 464 3
- T & L 465 3
- T & L 466 2

**Second Term**
- Crop 360 [I,G,K] (GER) 3
- CRS 336 [S] (GER) 3
- EdPsy 468 3
- NATRS 300 [B] (GER) 3
- T & L 467 3
- T & L 469 2

**Fourth Year**

**First Term**
- AFS 401 3
- Ag Ed Elective 3
- Ag Ed 407 6
- Ag Ed 442 2
- AgTM 402 3
- T & L 415 6

**Second Term**
- Ag Ed Elective 3
- Chem 102 [P] or 106 [P] (GER) 4
- FSHN 130 [B] (GER) 3
- GenEd 111 [A] (GER) 3
- SoilS 101 3

**Second Year**

**First Term**
- A S 101 3
- AFS 201 3
- Biol 106 [B] (GER) 4
- EconS 101 [S] (GER) 3
- Math 107 or 201 4 or 3

**Second Term**
- Biol 107 [B] or Biol 120 [B] (GER) 4
- ComSt 102 [C] or HD 205 [C] (GER) 3
- Crop 102 3

**Third Year**

**First Term**
- AFS 301 3
- Biol 372 or NATRS 300 [B] (GER) 4 or 3
- Phil 260 [H] (GER) 3
- SoilS 201 [B] (GER) 3
- Electives 3

**Second Term**
- Crop 305, Entom 340, or PI P 429 3
- Crop 360 [I] (GER) 3
- CRS 336 [S] (GER) 3
- Ag Ed Elective 6

**Fourth Year**

**First Term**
- Ag Ed Electives 6
- 300-400-level Ag Electives 6
- AFS 401 3
- Internship 3
- Psych 105 [S] (GER) 3
- SoilS 345, 404, or 445 3

**Second Term**
- 300-400-level Ag Electives 6
- Seminar 1
- SoilS 480 6
- Tier III Course [T] (GER) 3

**ORGANIC AGRICULTURE SYSTEMS (120 HOURS)**

This exciting new major is the first in the United States, and we are pleased to offer it at Washington’s land-grant, research university. Students in this major take a broad variety of science-based agricultural courses in the natural, environmental, economic and social sciences as well as a number of dedicated organic agriculture courses. WSU has over 50 faculty with research in organic agriculture, and there is a three-acre certified organic teaching farm (primarily vegetables and some fruit) used in the program. Students have the opportunity to tailor their program to specific areas of emphasis, such as organic animal and dairy production, economics and marketing, crop production, food science and human nutrition, pest management, soil management, and others in consultation with their advisor. Discussion of focus area with your advisor should be held as early as possible.

For complete information visit afs.wsu.edu/organic.

**First Year**

**First Term**
- AFS 201 3
- Biol 106 [B] (GER) 4
- EconS 101 [S] (GER) 3
- Engl 201 [W] (GER) 3
- SoilS 201 3
- T & L 1.300 2

**Second Term**
- Complete Writing Portfolio

**Second Year**

**First Term**
- AFS 101 3
- Biol 106 [B] (GER) 4
- EconS 101 [S] (GER) 3
- Math 107 or 201 4 or 3

**Second Term**
- Biol 107 [B] or Biol 120 [B] (GER) 4
- ComSt 102 [C] or HD 205 [C] (GER) 3
- Crop 102 3

**Third Year**

**First Term**
- AFS 301 3
- Biol 372 or NATRS 300 [B] (GER) 4 or 3
- Phil 260 [H] (GER) 3
- SoilS 201 [B] (GER) 3
- Electives 3

**Second Term**
- Crop 305, Entom 340, or PI P 429 3
- Crop 360 [I] (GER) 3
- CRS 336 [S] (GER) 3
- Ag Ed Elective 6

**Fourth Year**

**First Term**
- Ag Ed Electives 6
- 300-400-level Ag Electives 6
- AFS 401 3
- Internship 3
- Psych 105 [S] (GER) 3
- SoilS 345, 404, or 445 3

**Second Term**
- 300-400-level Ag Electives 6
- Seminar 1
- SoilS 480 6
- Tier III Course [T] (GER) 3

**PEST MANAGEMENT SYSTEMS (120 HOURS)**

The major in Pest Management Systems is a multi-disciplinary course of study whose goal is to produce individuals who can approach pest population management from a holistic perspective. Students will acquire an awareness of the complexity of relationships within agricultural, aquatic, and urban ecosystems, understand the effects of external factors influencing these systems, and are taught how to devise effective pest management measures without incurring undue risks to human or environmental health. Course offerings focus on pest biology, phenoLOGY, and ecology; biology and behavior of natural enemies; the full spectrum of acceptable management methods used to suppress pests; the importance of the systems approach to problem solving; economics of crop production; and meteorological influences on ecosystem components.
The major is a blend of classroom instruction and field experience that is tailored to the eventual employment goals of the student participant. Men and women who can evaluate and diagnose pest problems and recommend economically and ecologically sound corrective actions are in great demand. Excellent employment opportunities exist with state, federal, and international agricultural, environmental, and regulatory agencies, agrochemical companies, agricultural/environmental consulting firms, food processing, forest product, and vegetable and seed companies, and a wide range of other agribusiness enterprises.

The pest management systems major includes a professional internship. This "on-the-job" training is a joint effort between Washington State University and various industries, agricultural organizations, and governmental agencies, the choice of training received being dependent upon a student's interests and available job opportunities. The internship provides prospective pest management practitioners opportunities to practice skills that will be required of an individual once they enter into their chosen profession.

### First Year

#### First Term
- A S 101 3
- AFS 101 3
- Biol 106 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- Math 107 or 201 3 or 4

#### Second Term
- Biol 107 [B] or 120 [B] (GER) 4
- Chem 102 [P] or 106 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3

### Second Year

#### First Term
- AFS 201 3
- ComSt 102 [C] or H D 205 [C] (GER) 3
- CropS 102 3
- EconS 101 [S] (GER) 3
- ES/RP 174 3
- IPM 201 2

#### Second Term
- Arts & Humanities [H,G] (GER) 3
- EconS 336 [S] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Psych 105 [S] (GER) 3
- SoilS 201 [B] (GER) 3

### Complete Writing Portfolio

### Fourth Year

#### First Term
- AFS 401 3
- Seminar (CropS 412) 1
- Stat 212 [N] (GER) 4
- Tier III Course [T] (GER) 3

#### Second Term
- IPM 462 [M] 3

### PLANT AND SOIL SYSTEMS - CROPPING SYSTEMS (123 HOURS)

The major in Plant and Soil Systems provides students the opportunity to specialize in plant or soil management for food, fiber, and/or ornamental production, while maintaining a big picture perspective of how their disciplinary work fits within larger agricultural and food systems. While grounded in the range of core classes in natural, biological, physical, economic and social sciences, students can choose from among three focus areas in the following options: Cropping Systems, Horticulture Systems, or Soil Management.

This major is for students who are interested in actively managing soil and/or plants, such as being a certified professional in crop or soil sciences (including certified crop advisor), running a plant production enterprise such as an agronomic or horticultural farm, landscaping business, greenhouse production facility, etc., and/or working on the ground or in policy arenas toward conservation.

Students in the Cropping Systems option will focus on agronomic cropping systems. Students interested in genetics and molecular biology should also explore the Crop Science degree program elsewhere in this catalog.

### First Year

#### First Term
- AFS 101 3
- Chem 101 [P] or 105 [P] (GER) 4
- CropS 102 3
- Math 107 or 201 3 or 4

#### Second Term
- Biol 106 [B] (GER) 4
- Chem 102 [P] or 106 [P] (GER) 4
- ComSt 102 [C] or H D 205 [C] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3

### Second Year

#### First Term
- AFS 201 3
- AFS 301 3
- Biol 320 4
- CropS 305 3
- CropS 360 [I] (GER) 3

#### Second Term
- Biol 332 4
- Biol 372 or NATRS 300 [B] (GER) 3 or 4
- Entom 340 or Entom 343 [M] and 344 [M] 3 or 5
- IPM 452 2

#### Complete Writing Portfolio

### Third Year

#### First Term
- AFS 301 3
- Biol 372 or NATRS 300 [B] (GER) 3 or 4
- CropS 305 3
- ES/RP 174 3
- SoilS 301 [M] 3

### Fourth Year

#### First Term
- AFS 401 3
- Biol 320 4
- CropS 302 or Hort 320 3
- CropS 498 3
- SoilS 442 3

#### Second Term
- 300-400-level EconS Elective or SoilS 468 3 or 4
- CropS 411 [M] 3
- CropS 412 1
- CropS 444 2
- CropS 445 [M] 2

#### Tier III Course [T] (GER) 3

### PLANT AND SOIL SYSTEMS - HORTICULTURE SYSTEMS (120 HOURS)

The major in Plant and Soil Systems provides students the opportunity to specialize in plant or soil management for food, fiber, and/or ornamental production, while maintaining a big picture perspective of how their disciplinary work fits within larger agricultural and food systems. While grounded in the range of core classes in natural, biological, physical, economic and social sciences, students can choose from among three focus areas in the following options: Cropping Systems, Horticulture Systems, or Soil Management.

This major is for students who are interested in actively managing soil and/or plants, such as being a certified professional in crop or soil sciences (including certified crop advisor), running a plant production enterprise such as an agronomic or horticultural farm, landscaping business, greenhouse production facility, etc., and/or working on the ground or in policy arenas toward conservation.

Students in this option will focus on horticultural systems. The course of studies includes the AFS core classes, several core classes in plant and soil systems, and the requirements to fill a minor in Horticulture. Students interested in molecular biology of horticulture crops, management of horticultural crops, e.g., tree fruits, grapes, vegetable crops, or ornamental/environmental horticulture, should also explore the Horticulture degree program elsewhere in this catalog.

### First Year

#### First Term
- AFS 101 3
- Chem 101 [P] or 105 [P] (GER) 4
- CropS 102 3
- Math 107 or 201 3 or 4

#### Complete Writing Portfolio
horticultural farm, landscaping business, greenhouse production enterprise such as an agronomic or (including certified crop advisor), running a plant actively managing soil and/or plants, such as being classifications: Cropping Systems, Horticulture Systems, or from among three focus areas in the following op- economic and social sciences, students can choose range of core classes in natural, biological, physical, of how their disciplinary work fits within larger ag- ducers the opportunity to specialize in plant or soil Systems provides stu- the range of core classes in natural, biological, physical, economic and social sciences, students can choose from among three focus areas in the following options: Cropping Systems, Horticulture Systems, or Soil Management. This major is for students who are interested in actively managing soil and/or plants, such as being a certified professional in crop or soil sciences (including certified crop advisor), running a plant production facility, etc., and/or working on the ground or in policy arenas toward conservation.

Students in this option will focus on the management of our soil resources in food production and natural resource settings. Students interested in employment as conservationists in the Natural Resources Conservation Service should have 12 hours of soils. To qualify as soil scientists (including mapping), a total of 15 hours in soils is required. SoilS 201, 301, 413 or 441, 421, and 451 are recommended. Students interested in mainly environmental issues related to soils should also explore the Soil Science degree program elsewhere in this catalog.

First Year

First Term

Hours

A S 101
3

AFS 201
3

Biol 120 [B] (GER)
4

GenEd 110 [A] or 111 [A] (GER)
3

SoilS 201 [B] (GER)
3

Second Term

Hours

Chem 345
4

EconS 101 [S] (GER)
3

Hort 202
3

Hort Minor Elective
3

Phil 260 [H] (GER)
3

Complete Writing Portfolio

Third Year

First Term

Hours

AFS 301
3

Biol 320
4

Biol 372 or NATRS 300 [B] (GER) 3 or 4

CropS 305
3

ES/RP 174
3

Second Term

Hours

CRS 336 [S] (GER)
3

Hort Minor Elective
3

SoilS 441
3

Stat 212 [N] (GER)
4

Fourth Year

First Term

Hours

AFS 401
3

CropS 360 [L] (GER)
3

CropS 403, SoilS 345, or SoilS 445

Hort 399
3

Hort Minor Elective
3

Second Term

Hours

Arts & Humanities [H,G] or Social Sciences [S,K] (GER)
3

Hort Minor Electives 4 - 8

Seminar
1

Tier III Course [T] (GER)
3

Electives 1 - 3

PLANT AND SOIL SYSTEMS - SOIL MANAGEMENT OPTION (122 HOURS)

The major in Plant and Soil Systems provides stu-...
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.

497 Internship in Agricultural Education V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Off-campus professional experience. S, F grading.

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 V 1-2 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.

600 Special Projects or Independent Study Variable credit S, F grading.

General Agriculture Courses

Agri

501 Agriculture Master’s Practicum 2 or 3 May be repeated for credit; cumulative maximum 6 hours. 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.

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 May be repeated for credit; cumulative maximum 4 hours. Prereq admission to graduate program. Directed group study of selected advanced topics in agriculture and related areas.

562 Advanced Topics V 1-3 May be repeated for credit; cumulative maximum 4 hours. Prereq admission to graduate program. Directed group study of selected advanced topics in agriculture and related areas.

587 Issues in Agriculture 3 Prereq admission to graduate program. Exploration and assessment of current issues associated with domestic and international agriculture programs.

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. 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.

305 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).

306 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. Field trip required.

326 Vineyard and Winery Equipment Systems 3 (2-3) Prereq Hort 313. Overview of machinery systems used in vineyards and wineries. Field trip required.

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; 9 hours in Educ. Development of shop programs in project planning, demonstrations, and skills performance; safety and management of materials, tools, and machines.

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, geographical 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).

433 [M] Agricultural Processing 3 Rec Math 140 or 202; Phys 101. Principles of heat transfer, steam, air-vapor mixtures, refrigeration and fluid flow as applied to commodity processing and storage. Cooperative course taught by WSU, open to UI students (ASM 433/FST 433).

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) May be repeated for credit; cumulative maximum 4 hours. Prereq junior standing, AgTM 305, 405, or permission of instructor; c//AgTM 437. Lab for AgTM 436. Credit not allowed for both AgTM 437 and 537.

443 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Prereq permission of instructor. Laboratory and research techniques for AgTM.

444 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Prereq permission of instructor. Laboratory and research techniques for AgTM.

446 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Prereq permission of instructor. Laboratory and research techniques for AgTM.
447 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Prereq permission of instructor. Laboratory and research techniques for AgTM.

451 Seminar 1 May be repeated for credit; cumulative maximum 2 hours. Prereq junior standing. Readings and interviews, research, and oral presentation of professional subjects.

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. 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 May be repeated for credit; cumulative maximum 8 hours. By interview only.

495 Internship in Agricultural Technology and Management 2 or 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.

505 Precision Agricultural Systems Management 3 Prereq admission to graduate program. Evolving technologies involved in precision agriculture and their application to agricultural systems.

536 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.

Program in American Studies

libarts.wsu.edu/amerst
Wilson 104
509-335-1560


The American Studies Program offers the Bachelor of Arts, Master of Arts, and Doctor of Philosophy degrees in American Studies.

Requirements
To apply to the American studies program, send to the Graduate School:
• An official application form and official college transcripts sent directly from each institution attended.
• Send to the American studies program:
• An official application form and official college transcripts sent directly from each institution attended
• A three to five page statement of purpose describing your areas of interest and why the American studies program at WSU is a good place for you to pursue them (also mention any foreign language preparation and any teaching experience if you are applying for a teaching assistantship).
• A recent sample of your scholarly or critical writing (15–20 pages).
• Three letters of recommendation, on academic letterhead, addressing your qualifications for graduate study, professional potential, and (if applying for a teaching assistantship) your abilities as a teacher.
• Non-native speakers of English who seek teaching assistantships must submit an audiocassette with a two-minute sample of improvised conversation demonstrating their abilities with spoken English.

The deadline for Fall applications is February 1. International students must also submit TOEFL or IELTS results.

Program Description
American studies use interdisciplinary approaches to the study of the United States as a multiethnic, multicultural, and multilingual society, embedded in transnational forces. The program has especially strong ties to our comparative ethnic studies and women's studies departments, as well as longstanding ties to the history and English departments. We also work with faculty in anthropology, communication, digital technology and culture, education, fine arts, philosophy, political science, and sociology. In addition to the American studies courses, we coordinate faculty and courses from these departments, and draw them together in rigorous interdisciplinary synthesis. The program offers a broad array of possibilities, with strengths in ethnic studies, feminist studies, multicultural American West, environmental cultural studies of race, class, gender, sexuality and empire, popular culture, social movements, activist research, labor history, and cyberculture studies.

Graduate Opportunities
While most American studies graduate students enter careers in university and college teaching, an advanced degree can also be useful preparation for government service, museum and archive work, community activism, and traditional or electronic publishing, among other careers.

Positions Held by Recent Graduates
University and college teaching positions.

Related Programs
Comparative Ethnic Studies; Women's Studies; English; and History.

Undergraduate
The undergraduate major is ideal for students who feel their interests cannot be contained within a single discipline, and the minor is useful 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 non-profit sector, among other areas.

For more information, contact Jean Wiegand, Washington State University, PO Box 644013, Pullman, WA 99164-4013, 509-335-1560, wiegandj@wsu.edu.

Schedules of Studies

Students must complete 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, 472, 473, 474, or 475.

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>
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<tr>
<th>Course</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>
<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>
<td>3</td>
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<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
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<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>
Social Sciences [S,K] (GER) 3
Science Elective (GER) 4
Elective 3

**Second Year**

**First Term**
- Hours
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Biological Sciences [B] (GER) 4
- Foreign Language or Elective 4
- Hist 110 3

**Second Term**
- Hours
- Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
- Foreign Language of Elective 4
- Hist 111 3
- Complete Writing Portfolio 4

**Third Year**

**First Term**
- Hours
- Am St 216 3
- Engl 380, 381, or 382 3
- W St 300 3
- Electives 6

**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 Studies [I,G,K], or Social Sciences [S,K] (GER) 3
- Intercultural Studies [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**

**Minor in 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**

216 [S,D] American Cultures 3

**Department of Animal Sciences**

www.ansci.wsu.edu
Clark 116
509-335-5523


The department offers courses of study leading to the degrees of Bachelor of Science in Animal Sciences, Master of Science in Animal Sciences, and Doctor of Philosophy (Animal Sciences). The department participates in the Joint Program for Animal Sciences and Veterinary Medicine, leading to the degrees of Bachelor of Science in Animal Sciences and Doctor of Veterinary Medicine. The department also participates in the graduate Program in Nutrition which offers a Doctor of Philosophy degree and in the Genetics and Cell Biology program which offers Master of Science and Doctor of Philosophy degrees.

**Bachelor of Science Degree Program**

Animal sciences students learn the biological and economic principles and practices associated with agricultural animal production, and companion and laboratory animal care. This training prepares graduates for a wide variety of career opportunities. These opportunities include animal production and food processing (meats, dairy products, etc.); animal research, biomedical research; zoos; companion animal services; the agricultural service industries (including feed manufacturing and sales, pharmaceuticals, artificial insemination, agricultural equipment, financial institutions, etc.).
and government agencies. Continued education leading toward graduate or professional degrees is available for students from the animal sciences program. Employers seek out graduates in animal sciences because of their practical and technical knowledge of animal care and production.

Students in animal sciences take a wide variety of agricultural and non-agricultural courses, receiving in-depth training in the biology of farm and companion animals. Core courses include animal nutrition, animal reproduction, and animal breeding. The curriculum is designed to provide students with the scientific, practical, and people skills to make them productive members of the food production, animal care and related industries. Prior to their junior year, students select an option to coincide with their interests. These options have required courses and electives which allow individual program specialization in areas such as dairy, beef or swine production, companion animal management, aquaculture, animal nutrition, growth, reproduction, genetics, biotechnology, meat science, sustainable agriculture, and animal behavior and well-being.

The Animal Management Option (which combines the Industry and Production Management Options) emphasizes the business, economics and practical management aspects of animal production and care of animals. This option is recommended for students preparing to work in agricultural animal production, companion animal care, or agribusiness.

The Pre-veterinary Medicine/Science Option places emphasis on the social sciences courses. This option is recommended for students planning to attend graduate school, apply to the professional program leading to the Doctor of Veterinary Medicine, or work in technical or specialized areas of animal science, such as extension, academia, research, 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, 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. 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 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)

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

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<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
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<tr>
<td>First Term</td>
<td>3</td>
<td>A S 101</td>
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<td>A S 180</td>
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<td></td>
<td></td>
<td>Chem 101 [P] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<td>Math 107, 140 [N], 171 [N], 201, or 202 [N] (GER)</td>
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<tr>
<td>Second Term</td>
<td>2</td>
<td>A S 172, 174, 175, 176, or 178¹</td>
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<td>Bio 106 [B] (GER)</td>
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<td>Chem 102 [P] (GER)</td>
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<td>ComS 102 [C] or H D 205 [C] (GER)</td>
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<td>GenEd 110 [A] or 111 [A] (GER)</td>
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Second Year

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<th>Term</th>
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<tr>
<td>First Term</td>
<td>3</td>
<td>A S 260, 272, or 360</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>EconS 101 [S] (GER)</td>
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<td>GenEd 110 [A] or 111 [A] (GER)</td>
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<td>V MS 361</td>
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<tr>
<td>Second Term</td>
<td>3</td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Cpt S 405</td>
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<td>Intercultural Studies [J,G,K] (GER)</td>
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<td>SoilS 201</td>
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<td>Stat 212 [N] (GER) or 412¹</td>
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Third Year

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<tr>
<td>First Term</td>
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<td>Actct 230</td>
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<td>B Law 210</td>
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<td>CropS 101, 302, 303, or NATRS 351</td>
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<td>Engl 201 [W] (GER)</td>
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<td>Second Term</td>
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<td>A S 314</td>
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<td>A S 330</td>
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<td>A S 350</td>
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<td>A S 351</td>
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<td>A S 380</td>
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<td>EconS 350</td>
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Fourth Year

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<th>Courses</th>
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<tr>
<td>First Term</td>
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<td>A S 285, 488, CropS 302, 303, or NATRS 351</td>
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<td>A S 440</td>
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<td>A S 454¹</td>
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<td></td>
<td>A S 472 or 478 [M]²</td>
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<td>Second Term</td>
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<td>A S 408 [M]¹</td>
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<tr>
<td></td>
<td></td>
<td>A S 466, 468, 474 [M], or 476²</td>
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<td></td>
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<td>A S 488 [M] or NATRS 351¹</td>
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<td></td>
<td>Tier III Course [T] (GER)</td>
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<td>Elective¹</td>
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</tbody>
</table>

¹ Some courses offered fall or spring term only.
² Take Stat 212 unless math proficiency GER has been taken.
³ Strongly recommended.

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 3.5 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.

Fourth-Seventh 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/AS 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 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.

**First Year**

<table>
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<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>A S 101</td>
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<tr>
<td>A S 172, 174, or 180</td>
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<tr>
<td>Biol 106 or GER</td>
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<tr>
<td>Chem 105 [P] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>Math 107, 171 [N], or GER</td>
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<tbody>
<tr>
<td>A S 176, or 178</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Intercultural Studies [I,G,K] (GER)</td>
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<tr>
<td>Biol 106 or 107 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
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<td>GER</td>
<td>3</td>
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<tr>
<td>H D 205 [C] (GER)</td>
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**Second Year**

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<th>Hours</th>
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<tr>
<td>Biol 107 [B] (GER)</td>
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<td>Chem 345</td>
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<td>GenEd 110 [A] or 111 [A] (GER)</td>
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<td>Phys 101 [P] (GER)</td>
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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>
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<tr>
<td>EconS 101 [S] (GER)</td>
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<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>MBioS 301</td>
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**Third Year**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>A S 313</td>
<td>4</td>
</tr>
<tr>
<td>Acctg 230</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Eng 201 [W] or 402 [W] (GER)</td>
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<thead>
<tr>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>A S 466, 468, 472, 474, 476, or478</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>A S 380</td>
<td>1</td>
</tr>
<tr>
<td>A S 408 [M]</td>
<td>3</td>
</tr>
<tr>
<td>A S 440</td>
<td>3</td>
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<tr>
<td>MBioS 303</td>
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<th>Second Term</th>
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<tbody>
<tr>
<td>Tier III Course [T] (GER)</td>
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<table>
<thead>
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<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>A S 283, 488, CropS 302, 303, or NATRS 351</td>
<td>3-6</td>
</tr>
<tr>
<td>A S 454 [S]</td>
<td>2</td>
</tr>
<tr>
<td>EconS 335</td>
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<tr>
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<tbody>
<tr>
<td>A S 408</td>
<td>3</td>
</tr>
<tr>
<td>A S 466, 468, 472, 474 [M], 478 [M] or 478</td>
<td>3</td>
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</table>

* See the department for the requirements for years four through seven.

**Pre-Veterinary Medicine/Science Degree Program (121 Hours)**

At least 40 of the total hours required for the bachelor's degree in this program must be in 300-400-level courses.

**Production Management Degree Program (121 Hours)**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>A S 101</td>
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<tr>
<td>A S 178</td>
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<tr>
<td>A S 180</td>
<td>1</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Eng 101 [W] (GER)</td>
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</tr>
<tr>
<td>Math 107, 140 [N], 171 [N], 201, or 202 [N] (GER)</td>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>ComSt 102 [C], or H D 205 [C] or (GER)</td>
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<tr>
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<tbody>
<tr>
<td>A S 260 or 272</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Eng 110 or 111 [A] (GER)</td>
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<th>Second Term</th>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>SoilS 201</td>
<td>3</td>
</tr>
<tr>
<td>Stat 212 [N] (GER) or 412</td>
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<tr>
<th>Third Year</th>
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<tr>
<td>A S 330</td>
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<tr>
<td>A S 350</td>
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<tr>
<td>A S 351</td>
<td>3</td>
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<tr>
<td>A S 360</td>
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<tr>
<th>Fourth Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>A S 285, 488, CropS 302, 303, or NATRS 351</td>
<td>3-6</td>
</tr>
<tr>
<td>A S 454</td>
<td>2</td>
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<tr>
<td>EconS 335</td>
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<tr>
<th>Second Term</th>
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<tbody>
<tr>
<td>A S 408</td>
<td>3</td>
</tr>
<tr>
<td>A S 466, 468, 472, 474 [M], 478 [M] or 478</td>
<td>3</td>
</tr>
</tbody>
</table>

* Some courses offered fall or spring term only.

1 Take Stat 212 unless math proficiency GER has been taken.


3 Some courses offered fall or spring term only.

4 Strongly recommended.
Minors

Minor in 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

101 Introductory Animal Science 3 (2-3) Types and breeds of livestock, terminology, methods, management systems, techniques of animal and poultry production and consumer impact. Cooperative course taught jointly by WSU and UI (AVS 109).

172 Dairy Cattle Management Laboratory 1 (0-3) Management practices associated with a dairy enterprise. Cooperative course taught by UI (AVS 172), open to WSU students, S, F grading.

174 Beef Cow Calf Management Laboratory 1 (0-3) Management practices associated with a beef cow calf enterprise for students without experience. Cooperative course taught jointly by WSU and UI (AVS 174), S, F grading.

178 Swine Management Laboratory 1 (0-3) Management practices associated with a swine enterprise. Field trip and special clothing required. Cooperative course taught by WSU, open to UI students (AVS 178), S, F grading.

180 Animal Sciences Orientation 1 Animal sciences as a profession; career opportunities, curriculum, advisement, internships, externships, animal centers, special services centers, and course requirements.

198 Honors, Introductory Animal Science 3 An introductory course for animal science, agriculture and home economics, and science honors students. Open only to students in the Honors College.

205 [B] Companion Animal Nutrition 3 Information on nutrient use by the animal body and factors governing companion animal nutrient requirement including basic and practical aspects.

243 Companion Animal Diseases 3 A survey of common diseases that affect dogs, cats, pocket pets and horses including terminology, signs, processes and prevention.

260 Live Animal and Carcass Evaluation 3 (1-6) Basic principles of live animal and carcass evaluation. Cooperative course taught jointly by WSU and UI (AVS 263).

274 Feedlot Management 2 (1-3) Concepts used in the cattle feeding industry. Cooperative course taught by UI (AVS 204), open to WSU students.

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

285 Rights and Welfare of Animals 3 Prereq Biol 102 or 106, or c//. Ethical considerations and welfare of animals used as companions, for food, and in scientific research. Cooperative course taught by WSU, open to UI students (AVS 485).

313 Feeds and Feeding 4 (3-3) 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).

314 Principles of Nutrition 3 Prereq Biol 107; Chem 102 or 106. Digestion, absorption, metabolism, and function of nutrients. Cooperative course taught jointly by WSU and UI (AVS 305).

330 Animal Genetics 3 (2-3) 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).

345 Introduction to Animal Growth and Development 3 Prereq A S 101; Biol 106. Animal structure, composition, whole body and cellular growth, pre- and postnatal growth; emphasis on skeletal muscle, bone and adipose tissue. Cooperative course taught by WSU, open to UI students (AVS 315).

346 Introduction to Skeletal Muscle Physiology 3 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).

350 Physiology of Reproduction 3 Prereq Biol 106; Biol 107; Chem 102 or 106. Anatomy and physiology of reproductive organs; hormones of reproduction; production of gametes; artificial insemination; fertilization; premating development; fertility and infertility. Cooperative course taught jointly by WSU and UI (AVS 452).

351 Physiology of Reproduction Laboratory 1 (0-3) Prereq A S 350 or c//. Laboratory and field techniques used in animal reproduction involving hormones, artificial insemination, semen evaluation and pregnancy.


367 Medical and Surgical Problems in the Horse 3 Same as VMS 367.

378 Advanced Livestock and Meat Selection and Evaluation 2 (0-6) May be repeated for credit. Prereq A S 260. Principles and practices of livestock and meat selection and evaluation. Off-campus and weekend participation required.

380 Careers in Animal Science 1 Issues and preparation for careers in animal sciences areas.

398 Cooperative Education Externship V 2-8 May be repeated for credit; cumulative maximum in A S 398 and 399: 12 hours. Cooperative education externship in livestock production or related field. S, F grading.

399 Practicum V 1-8 May be repeated for credit; cumulative maximum in A S 398 and 399: 12 hours. Directed internship in livestock production and related fields conducted at WSU centers on or off campus. S, F grading.

408 [M] Ruminant Nutrition 3 Prereq A S 313. Anatomy, physiology, and metabolism in ruminant animals. Credit not granted for both A S 408 and 508.

410 Canine and Feline Nutritional Biology 3 Prereq A S 313; A S 314. Nutritional biology of the domestic canine and feline; topics include nutrition, reproduction, health and behavior.

428 Topics in Animal Breeding 2 May be repeated for credit; cumulative maximum 4 hours. 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.


451 Endocrine Physiology 3 Prereq Biol 106; Biol 107; MBioS 303. Structure and physiology of glands of internal secretion and their hormonal effects on processes of growth, development, metabolism, and production of vertebrates; minor emphasis on invertebrates. Credit not granted for both A S 451 and 551. Cooperative course taught jointly by WSU and UI (AVS 451).

452 Physiology of Lactation 3 Prereq A S 350. Anatomy, physiology, and endocrine control of mammary gland development and milk secretory process. Cooperative course taught jointly by WSU and UI (AVS 413).

454 Artificial Insemination and Pregnancy Detection 2 (1-3) 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).

464 [M] Companion Animal Management 3 (2-3) Prereq FSHN course; Biol course; Stat course. 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).

466 [M] Horse Production 3 (2-3) Prereq A S 313; A S 330; A S 350. Principles of breeding, feeding, and management of horses. Field trip required. Cooperative course taught by WSU, open to UI students (AVS 466).

468 Concepts in Aquaculture 3 (2-3) Prereq NATRS 421, or permission of instructor. Same as NATRS 424.
472 Dairy Cattle Production 3 (2-3) Prereq A S 313; A S 330; A S 350. Principles of breeding, feeding, and management of dairy cattle. Field trip required. Cooperative course taught jointly by WSU and UI (AVS 472).


474 [M] Beef Cattle Production 3 (2-3) Prereq A S 313; A S 330; A S 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; A S 330; A S 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; A S 330; A S 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 or A S 330. 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 May be repeated for credit. Current developments in animal sciences.

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) Care and management of companion animal species throughout the life cycle, including nutrition, reproduction, exercise and behavior.

507 Advanced Nutrient Metabolism 3 Prereq FSHN course; 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) Prereq FSHN course. 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 FSHN course; 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 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 May be repeated for credit. Current developments in animal physiology. Cooperative course taught jointly by WSU and UI (AVS 520).

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 526).

551 Endocrine Physiology 3 Graduate-level counterpart of A S 451; additional requirements. Credit not granted for both A S 451 and 551.

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 473; additional requirements.


588 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 May be repeated for credit. Recent research in various disciplines of animal sciences. Cooperative course taught by WSU, open to UI students (AVS 598).

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.

Department of Anthropology
libarts.wsu.edu/anthro/
College Hall 150
509-335-3441


The curriculum includes courses in the four major subfields of anthropology: archaeology, cultural/social anthropology, linguistic anthropology, and physical/biological anthropology. These courses familiarize students with current issues in human evolution, linguistics, the prehistoric development of culture, and cultural theory. Undergraduate majors are required to gain a background in all four of these major subfields. Graduate students may specialize in archaeology, cultural anthropology, or evolutionary anthropology. The program in archaeology emphasizes the prehistory of western North America as well as ecological archaeology, past environments, quantitative methods, modeling and simulation, and lithic analysis, and includes courses taught by faculty with specialties in each of these areas. The department also conducts summer archaeological field schools in the Pacific Northwest and the Southwest. The program in cultural anthropology emphasizes globalization, historical ethnography, psychological anthropology, medical anthropology, gender and culture, biocultural perspectives, and environmental anthropology. The environmental anthropology emphasis is part of the Peace Corps Master’s International Program. Faculty research is based in North and South America, Polynesia, Sub-Saharan Africa, and South Asia. The program in evolutionary anthropology emphasizes evolutionary psychology, behavioral ecology, evolutionary cultural anthropology, evolutionary archaeology and paleoanthropology. Evolutionary faculty have research interests that span several continents including the Americas, Europe and Africa.

Departmental offices and laboratories are located in College Hall near the center of campus. Physical facilities include special laboratories for physical anthropology, lithic analysis, paleoecology, geoarchaeology, and zooarchaeology, as well as research laboratories for faculty and advanced students. The Museum of Anthropology, with permanent and temporary exhibits, and ethnographic and archaeological research collections, is also housed in College Hall.

The department offers courses of study leading to the degrees of Bachelor of Arts in Anthropology, Master of Arts in Anthropology, and Doctor of Philosophy (Anthropology). Positions open to anthropologists include those in teaching, research, museum work, state and federal agencies, private consulting firms, and international business. In addition, anthropology provides a strong general foundation for a pre-professional education.

We expect that our graduating students will have:
**Anthropology**

1. Familiarity with the basic principles and findings of ethnology, archaeology, physical anthropology, and linguistics, the four subfields of American 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 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)**

A minimum of 34 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.

The anthropology major must complete a core: Anth 203, 230, 260, 490, and one course from each of the following:

- a) Anth 300, 301, 303, 304, 306, 307, 309, 316, 320, 327, 401, 402, 403, 404, 405, 418, 419, or 428;
- b) Anth 350, 355, or 450;
- c) Anth 463, 465, 466, or 468;
- d) Anth 300, 301, 303, 304, 306, 307, 316, 320, 327, 401, 402, 403, 404, 405, 418, 419, or 428;

1. Two years of one foreign language from high school or one year at college required.
4. Concentrating electives beginning in the junior year in one subarea of anthropology or in a minor discipline in consultation with the adviser is recommended.
5. Select courses from the four subdisciplines.

### Minor in Anthropology

**Minor in 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**

**First Term**

**Hours**

- Anth 101 [K] General Anthropology 3
- Anth 203 3
- Anth 230 3
- Anth 463 3
- Math Proficiency [N] (GER) 3
- Physical Sciences [P] (GER) 4
- Social Sciences [S,K] (GER) 3

**Second Term**

**Hours**

- Arts & Humanities [H,G], Intercultural Studies [I,G,K] or Social Sciences [S,K] (GER) 6
- Biological Anth Elective 3
- Cultural Anth Elective 3
- Intercultural Studies [I,G,K] (GER) 3
- Complete Writing Portfolio

**First Year**

**Hours**

- Anth 340 [M], 390 [M], 401 [M], 403 [M], 405 [M], or 430 [M] 3
- Linguistic Anth Elective 3
- 300-400-level Electives 9

**Second Year**

**Hours**

- Anth 490 [M] 3
- Tier III Course [T] (GER) 3
- 300-400-level Electives 9

**Third Year**

**Hours**

- Anth 390 3
- Archaeology Anth Elective 3
- Arts & Humanities [H,G] (GER) 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Electives 2

**Fourth Year**

**Hours**

- Anth 340 [M], 390 [M], 401 [M], 403 [M], 405 [M], or 430 [M] 3
- 300-400-level Electives 9

### Minors

**Minor in 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**

**First Term**

**Hours**

- Anth 101 [K] General Anthropology 3
- Anth 203 3
- Anth 230 3
- Anth 463 3
- Math Proficiency [N] (GER) 3
- Physical Sciences [P] (GER) 4
- Social Sciences [S,K] (GER) 3

**Second Term**

**Hours**

- Arts & Humanities [H,G], Intercultural Studies [I,G,K] or Social Sciences [S,K] (GER) 6
- Biological Anth Elective 3
- Cultural Anth Elective 3
- Intercultural Studies [I,G,K] (GER) 3
- Complete Writing Portfolio

**First Year**

**Hours**

- Anth 340 [M], 390 [M], 401 [M], 403 [M], 405 [M], or 430 [M] 3
- Linguistic Anth Elective 3
- 300-400-level Electives 9

**Second Year**

**Hours**

- Anth 490 [M] 3
- Tier III Course [T] (GER) 3
- 300-400-level Electives 9

### Minors

**Minor in 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**

**First Term**

**Hours**

- Anth 101 [K] General Anthropology 3
- Anth 203 3
- Anth 230 3
- Anth 463 3
- Math Proficiency [N] (GER) 3
- Physical Sciences [P] (GER) 4
- Social Sciences [S,K] (GER) 3

**Second Term**

**Hours**

- Arts & Humanities [H,G], Intercultural Studies [I,G,K] or Social Sciences [S,K] (GER) 6
- Biological Anth Elective 3
- Cultural Anth Elective 3
- Intercultural Studies [I,G,K] (GER) 3
- Complete Writing Portfolio
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.

320 [K] Native Peoples of North America
3 A culture history/culture area study of native North America.

325 [I] Traveling Cultures: Tourism in Global Perspective
3 Same as CES 325.

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 Gen Ed 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.

336 Old World Civilizations

340 [K, M] Maya, Aztec and Inca Civilizations
3 Prereq Anth 101, 330, or 336. Examination of the great prehistoric civilizations of Mesoamerica and South America.

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.

380 Introduction to Osteology
3 Prereq Anth 101 or 260. Introduction to the field of osteology including molecular analysis, paleopathology, taphonomy and forensic analysis.

390 [M] History of Anthropological Thought
3 Prereq junior standing. Development of theories in anthropology including contributions of significant individuals, representative classics and influential current movements.

395 Topics in Anthropology
V 3-6 May be repeated for credit; cumulative maximum 6 hours. Prereq junior standing. Examination of selected topics in contemporary anthropological theory and practice.

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.

402 Cross-cultural Gender and Kinship

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/not-Western cultures through dreams, history, and human development.

405 [T] 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 May be repeated for credit; cumulative maximum 9 hours. Prereq 3 hours Anth. Culture history, ethnography, theoretical, and contemporary problems of selected culture areas. Credit not granted for both Anth 428 and 528.

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).

463 Anthropology of Life and Death
3 Prereq Anth 260. Demography, dynamics of evolution, human ecology, and their relationships to the biology of living, historical, and archaeological populations. Credit not granted for both Anth 463 and 563.

465 Human Evolution

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.

490 [M] Integrative Themes in Anthropology

498 Anthropology Internship
V 1-15 May be repeated for credit; cumulative maximum 15 hours. Prereq junior standing. Participation as archaeological or cultural anthropological intern in public or private sectors; requires special arrangement with faculty advisor. 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.

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 May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours in social sciences. Evaluation of major theories and methods and their relationship to problems in cultural-social analysis.
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) May be repeated for credit; cumulative maximum 8 hours. Prereq undergraduate Stat course. Sampling, exploratory data analysis, inferential statistics, and use of SAS in anthropological research with emphasis on archaeology.

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 interrelationships 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 Prehistory of the Plateau and Basin 3
Prereq graduate standing. Archaeology of the interior Northwest and Great Basin.

545 Historical Archaeology 3
Excavation and analysis of historical archaeological sites; acculturational implications. Cooperative course taught by UI (Anth 531), open to WSU students.

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 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.

549 Settlement and Agro-Pastoralism 3
Prereq Anth 530; graduate standing. Development of settled communities and food production through evaluation of their social, economic and spatial configurations.

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. Elaboration, recording techniques and analysis of sociocultural and linguistic field data.

561 Current Trends in Physical Anthropology 3
May be repeated for credit. Prereq Anth 463. Intensive review of major current trends in physical anthropology.

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 Anthropology of Life and Death 3
Prereq Anth 260. Graduate-level counterpart of Anth 463; additional requirements. Credit not granted for both Anth 463 and 563.

564 Advances in Evolution and Human Behavior 3
Prereq one biology or biological anthropology course; one upper-division behavioral science course; graduate standing. Recent trends in the study of evolution and human behavior.

565 Human Evolution 3
Prereq Anth 260. Graduate-level counterpart of Anth 465; additional requirements. Credit not granted for both Anth 465 and 565.

567 Primate Behavioral Ecology 3
Prereq one biology or biological anthropology course; junior or graduate standing. Seminar-based course focusing on evolutionary analysis of primate behavior, morphology and ecology.

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.

581 Comparative Biology of Social Traditions 3
Prereq Anth 260 or Biol 106; senior or graduate standing. Phylogenetic and modeling perspectives used to examine the evolution of social learning and cultural transmission in humans and other animals.

591 Special Topics in Anthropology 3
May be repeated for credit; cumulative maximum 9 hours. Examination of current areas of anthropological theory and research.

593 Publishing and Professional Communication 3
Preparation of original research reports; survey of types of professional communication, and of standards and techniques.

596 IPEM Seminar 1
Prereq IGERT fellow. Symposia and project work sessions for the WSU/UW IGERT: Program in Evolutionary Modeling.

598 Advanced Anthropology Internship V 1-15 May be repeated for credit; cumulative maximum 30. Prereq graduate standing. Participation as archaeological or cultural anthropological intern in public or private sectors; requires special arrangement with faculty advisor. 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.

Department of Apparel, Merchandising, Design, and Textiles

amdt.wsu.edu
Kruegel 51
509-335-7949

Interim Chair, A. Kirschner; Professor, L. Arthur; Associate Professor, C. Salusso; Assistant Professors, J. Anderson, K. Cho, L. Khoza; Instructors, P. Fischer, C. Unguharl.

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, multifaceted 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 for exciting and challenging careers in the textile and apparel industry through coursework designed to develop both professional and personal expertise.

- Explore textile and apparel industry issues and practices encompassing historic and futuristic global technological and economic trends, challenges, and opportunities.
- 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.

### 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 take a cooperative internship in the apparel, merchandising, and textiles industry. Opportunities exist within the apparel, merchandising and textile complex throughout Washington, across the U.S. 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 http://www.wsu.edu:8080/~gradsch/.

### Schedules of Studies

Students must complete 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.

#### APPAREL DESIGN REQUIREMENTS

(120 HOURS)

Apparel design focuses on the interaction between design and merchandising and offers depth in apparel design. Students typically complete a minor in Fine Art and/or Business Administration.

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 Mktg 360. A course may only be repeated once. Courses required in these programs cannot be taken on a pass, fail basis. To maintain certification, a 2.70 cumulative gpa is required each semester. Independent study and internship courses (490, 495, 498) will not be included in gpa calculations. Students dropping below a 2.70 gpa will be de-certified and can reapply when the gpa is 2.70 or above.

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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.

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 Mktg 360. A course may only be repeated once. Courses required in these programs cannot be taken on a pass, fail basis. To maintain certification, a 2.70 cumulative gpa is required each semester. Independent study and internship courses (490, 495, 498) will not be included in gpa calculations. Students dropping below a 2.70 gpa will be de-certified and can reapply when the gpa is 2.70 or above.

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1 A maximum of 9 hours of electives may be taken a the 100-200 level.

Description of Courses

Apparel, Merchandising, and Textiles

APPAREL, MERCHANDISING, AND TEXTILES

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 and store layout; application of principles and elements of design and concept development.

210 Textile Specifications 4 (3-2) Examination of basic textile components including fibers, yarns, structure, coloration, and finishes relative to performance standards and expectations for intended use.

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 Specifications 4 (3-2) Examination of basic textile components including fibers, yarns, structure, coloration, and finishes relative to performance standards and expectations for intended use.

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. Introductory draping, drafting, and flat pattern techniques for apparel patterning.

312 Fitting the Human Form 3 (0-6) Prereq AMT 311. Advanced level exploration of draping and flat pattern techniques; industry specification practices and fitting techniques are emphasized.

314 Fashion Forecasting 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.


318 Merchandise Buying and Planning 3 (2-2) Prereq Econ 5 GER; Math GER; AMT 314. 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, dyeing, 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) May be repeated for credit; cumulative maximum 6 hours. Prereq AMT 320 or permission. Computer-aided design techniques for professional textile design portfolio development.

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 [T] Visual Analysis and Aesthetics 3 Prereq AMT 368, Com 321, F A 304 or Mktg 360; completion of one Tier I and one Tier II courses. In-depth analysis of the visual interaction among apparel, accessories and the body; identifying effective visual communication.

410 Advanced Assembly Techniques 3 (0-6) Prereq AMT 215, 311, 316. Advanced assembly techniques for a range of textiles and multi-layer 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, 411. 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] 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 or 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.


429 National Experience in Apparel/Textiles Field V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq junior standing. Field trip to experience international culture integrated with the field of textiles and apparel in industry centers worldwide.

439 International Experience in Apparel/Textiles Field V 1-3 May be repeated for credit; cumulative maximum 6 hours. Field trip to experience international culture integrated with the field of textiles and apparel in industry centers worldwide.

440 Advanced Retail Management 3 Prereq AMT 318; Econ 352. Advanced application of management principles and theory in the retail world.

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.


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

490 Cooperative Education Internship V 1-10 May be repeated for credit; cumulative maximum 10 hours. Experience with business, industry or government unit.

492 Computer Applications in Apparel, Textile, and Design 3 (1-4) Prereq AMT 312; AMT 368. 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 May be repeated for credit; cumulative maximum 6 hours. Current issues, trends, and merchandising strategies in apparel and textiles.

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 590 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 May be repeated for credit; cumulative maximum 8 hours. Current topics in apparel and textile theory and research.

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.

The School

The School of Architecture and Construction Management offers courses of study leading to 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 of Architecture and Construction Management is a member of the Association of Collegiate Schools of Architecture (ACSA) and the Associated Schools of Construction (ASC). Student chapters of the American Institute of Architects (AIA) and the Associated General Contractors (AGC) provide linkages with their professional counterparts.

Architecture

The School offers as its professional degree in Architecture the Master of Architecture. 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 to be eligible for entry to the Master of Architecture program. 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. It should be noted that this degree is not a professional accredited degree.

Most states require that an individual intending to become licensed as an architect hold an accredited degree. There are two types of degrees that are accredited by NAAB: (1) the Bachelor of Architecture, which requires a minimum of five years of study, and (2) the Master of Architecture. As stated above WSU offers the Master of Architecture as the professional accredited degree.

The four-year, pre-professional degree at WSU is not accredited by NAAB. This degree provides a thorough foundation in the field of architecture, as preparation for either continued education in a professional degree program or for employment in the architecture profession with a licensed architect and 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 or during the summer. Options include a semester overseas during the spring semester or as well as a year of study at the WSU Spokane campus. Foreign studies options include WSU sponsored programs, and programs offered by other institutions. Coordination is through the WSU Education Abroad Office.

Each year, one section of fourth-year students, and one-third of the Master of Architecture program 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 with students majoring in interior design and landscape architecture. Foreign studies options are available to both Pullman and Spokane students. On entering the certified program in the second year, students make their selection of studying in Pullman or Spokane in the fourth year.

Construction Management

The management of construction projects has become more complex due to the shortage of resources, specialized materials, sophisticated delivery methods and the financial and legal responsibilities encountered during the project life cycle. From construction management to project management and program management, the needs of the industry and the built environment are expanding at an unprecedented rate. The need for Construction Management Professionals is falling short of demand nationally and internationally. At the heart of the building process is the construction professional.

The Construction Management Program provides students with the tools and skills necessary to develop strong administrative, leadership and management expertise to be successful in today’s construction industry. Students pursuing a degree in Construction Management will be expected to understand a wide variety of topics that make up the built environment. This expertise includes understanding properties of materials and construction systems required for the construction professional. Concepts regarding contract administration, sustainability, risk management, estimating and scheduling are taught. Students in this program are encouraged to develop an inquisitive and inventive mind in order to understand the management techniques, methods and sequencing. 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. The Bachelor of Science in Construction Management degree program is accredited by the American Council for Construction Education (ACCE) and is four years in length.

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 Associated Students of Construction Management (ASCM) provide linkages with their professional counterparts.

Once certified in the major, students must maintain an overall minimum gpa of 2.5 or will be dismissed from the program.

Transfer Students

Students planning to transfer into the Construction Management discipline at Washington State University are subject to the same requirements as all other non-certified students. Transfer students must fulfill all first year course requirements and apply for certification before admittance into the program.
Schedules of Studies

Students must complete 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.

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 major 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 transfer GER course work from these institutions. While this may reduce the amount of time required at WSU to complete GER requirements, it is very difficult to transfer appropriate architecture course work to compress the four-year time period. 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 wishing to transfer from another institution into the second, third, or fourth 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 short off-campus study tour each year.

8. Beginning Fall 2006, all students admitted into the second year will be required to purchase laptop computers. Please contact the school for details and specifications.

Students who enter WSU and have an interest in architecture will be assigned an advisor in the School of Architecture and Construction Management. Students interested in architecture should enroll in Arch 101 fall of their freshman year, as this is the first prerequisite in an eight-semester sequence.

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. Students interested in architecture should enroll in Arch 101 fall of their freshman year, as this is the first prerequisite in an eight-semester sequence.

Certified Program

The School of Architecture and Construction Management accepts 50-55 students into the second year. WSU students who wish to enroll in second year must submit an application to the School of Architecture and Construction Management during the freshman 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; 7-8 credits of GER. 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 coursework. 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, 202 at WSU.
- June 1 Screening complete: Applicants will be classified as accepted or denied. Applicants will be notified by mail in June.

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

<table>
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<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arch 201</td>
<td>3</td>
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<tr>
<td>Arch 220</td>
<td>3</td>
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<tr>
<td>Arch 330</td>
<td>3</td>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Term</th>
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<tbody>
<tr>
<td>Arch 203</td>
<td>3</td>
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<tr>
<td>Arch 209</td>
<td>3</td>
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<tr>
<td>Arch 324 [M]</td>
<td>3</td>
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<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Third Year

<table>
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<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arch 301</td>
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<tr>
<td>Arch 309</td>
<td>3</td>
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<td>Arch 351</td>
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<td>Arch 353</td>
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<tr>
<td>Arch 432</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>Arch 303</td>
<td>5</td>
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<tr>
<td>Arch 352</td>
<td>3</td>
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<tr>
<td>Arch 354</td>
<td>1</td>
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<td>Arch 433</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
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</tbody>
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Fourth Year

First Term
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Arch 401 5
- Arch 409 [M] 3
- Arch 451 3
- Arch 472 3

Second Term
- Arch 403 5
- Arch Emphasis Electives 2 6

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.

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, all students admitted into the second year will be required to purchase laptop computers. Please contact the school for details and specifications.

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 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.

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, 111, EconS 101, 102, Engl 101, GenEd 110, Math 171, and another course that meets a General Education Requirement other than those previously listed. For applicant screening, the highest grade will be used.
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

First Term
- ComSt 102 [C] or H D 205 [C] (GER) 3
- EconS 101 [S] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Geol 101 [P] (GER) 4

Second Term
- Arts & Humanities [H,G] (GER) 3
- Biological Sciences [B] (GER) 3 or 4
- Cst M 102 3
- EconS 102 [S] (GER) 3
- GenEd 111[A] (GER) 3
- Math 171 [N] (GER) 4

CONSTRUCTION MANAGEMENT DEGREE PROGRAM (2ND THROUGH 4TH YEARS)
(129 HOURS)

Second Year

First Term
- Arch 351 3
- B Law 210 3
- Cst M 201 3
- Cst M 252 3
- Cst M 254 3

Second Term
- Acctg 230 3
- Arch 352 3
- Cst M 202 3
- Cst M 262 3
- Phys 101 [P] (GER) 4

Third Year

First Term
- Arch 432 3
- C E 301 3
- Cst M 356 [M] 3
- Cst M 370 3
- Cst M Elective 3

Second Term
- Arch 433 3

Fourth Year

First Term
- Arch 463 3
- Cst M 451 3
- Cst M 460 3
- Cst M 462 3
- MgtOp 301 3

Second Term
- Business Elective 3
- Cst M 473 3
- Cst M 475 [M] 3
- Cst M Elective 3
- Tier III Course [T] (GER) 3

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

Architecture Courses

Arch

101 Graphics Communication 3 (1-6) Prereq Math 107, 171, or 206 or cr/ or ID 101 or c/. 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 Architectural Design I 4 (0-8) Prereq Arch 103. Introduction to architectural design focusing on composition, conceptual design and principles of organization, scale, proportion, rhythm and 3-D development.
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 4 (0-8) Prereq Arch 201. Introduction to architectural design focusing on the art and aesthetics of structural expression and principles of structure as an ordering system.

209 Design Theory I 3 Prereq certified Arch major; 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.

301 Architectural Design III 5 (0-10) Prereq certified Arch major; Arch 203. Introduction of architectural design focusing on environmental and social issues.

303 Architectural Design IV 5 (0-10) Prereq certified Arch major; 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 certified Arch major; Arch 220; Arch 324; Arch 203 and c// in Arch 301. Design theory relating to cultural/symbolic issues which influence design decisions.

324 [M] Renaissance to Baroque Architecture 2 Prereq certified Arch major; Arch 220. Western architecture from the Renaissance to Baroque to pioneers of modern architecture.

330 Materials and Construction I 3 Prereq certified Arch or Cst M major. Wood, steel, concrete, and masonry systems materials; introduction of materials related to building systems; frame bearing wall and roof systems, skin systems.

332 Materials and Construction II 3 Prereq certified major in Arch or Cst M major. 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 certified 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 certified major in Arch or Cst M; Arch 351. Continuation of Arch 351.

353 Structures Studio I 1 (0-2) Prereq certified major in Arch or Cst M; Arch 351 or c//. Design principles of architectural structures systems; available systems for spanning and enclosing architectural space.

354 Structures Studio II I (0-2) Prereq certified major in Arch or Cst M; Arch 352 or c//. Continuation of Arch 353.

401 Architectural Design V 5 (0-10) Prereq certified Arch major; Arch 303; c// in Arch 409 (Pullman campus). Advanced architectural design focusing on technology, systems and crafts of buildings.

403 Architectural Design VI 5 (0-10) Prereq certified Arch major; Arch 401; c// in Arch 409 (Spokane campus). Advanced study of architectural design/form as influenced by social and environmental issues applied to large-scale developments.

409 [M] Design Theory VI 3 Prereq certified Arch major; Arch 209; Arch 401 or c// in Arch 401 or 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 Prereq certified Arch major; Arch 209. Architectural criticism and theory as viewed from contemporary and historical precedents.

426 Architectural Theory II 2 Prereq certified Arch major. Continuation and expansion of Arch 425 including applications to design concepts and methodologies.

427 Site and Landscape Design 3 (1-4) Prereq certified Arch major; 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 Prereq certified Arch or Cst M major. Mechanical systems for buildings; building heating, ventilating, and air conditioning systems, heat flow concepts.

433 Environmental Control of Buildings II 3 Prereq certified Arch or Cst M major; Arch 432. Water supply, drainage, electrical and lighting systems for buildings.

436 Contemporary Furniture Design 3 (1-4) Prereq certified Arch or Cst M major. 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) Prereq certified Arch or Cst M major. Design theory and methods of energy and resource conservation in architecture through the use of daylight modeling and computers.

440 Architectural Acoustics for Construction Management 2 Prereq Phys 101 or higher; Math 107 or higher. Introduction to the art and science of architectural acoustics with emphasis on understanding construction performance specifications.


446 Computer Animation I 3 (1-4) Introduction to computer animation production and building simulation; applicable for all majors.

451 Computer-aided Design I 3 (2-2) Prereq certified Arch or Cst M major; basic CAD course. Computer-aided design related to 3D modeling and construction documents.

452 Computer-aided Design II 2 (1-2) Prereq certified Arch or Cst M major; Arch 451. Continuation of Arch 451.

456 Field Sketching/Journal Keeping 3 (2-2) Prereq certified Arch or Cst M major. Field-sketching/journal-keeping strategies to facilitate investigation and comprehension of the built environment.

463 Architectural Structures III 3 Prereq certified Arch or Cst M major; Arch 351; Arch 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 certified Arch or Cst M major; 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 certified Arch or Cst M major. Building codes and specifications; sound theory, control, and acoustic systems applied to buildings.

480 Architecture Internship V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq certified Arch or Cst M major. Placement in an approved industrial, professional, or governmental situation for specialized or general experience.

490 Seminar in Architectural Design V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq certified Arch major. Advanced study in architectural design. Cooperative course taught by WSU, open to UI students (Arch 490).

491 Seminar in Architectural Communications V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq certified Arch major. Advanced study in graphic communication.

492 Seminar in Architectural History V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq certified Arch major. Advanced study in architectural history.
493 Seminar in Environmental Control V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq certified Arch or Cst M major. Advanced study in environmental control of buildings.

494 Seminar in Urban and Regional Planning V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq certified Arch major. Advanced study in urban and regional planning.

495 Seminar in Construction Management V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq certified Arch major. Advanced study in construction practice management.

496 Seminar in Computer Applications V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq Cpt S 151, 153, 154, or 203. Architectural and construction applications of computer graphics, management, computer-aided design.

497 Seminar in Professional Practice V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq certified Arch major; senior standing. Advanced study in architectural practice management.

498 Seminar in Architectural Structures V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq certified Arch major; Arch 301; Arch 351 or c/. Advanced study in architectural structures systems.

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 graduate standing; Arch 403. Exploration of traditional research methods and investigations for architects.

520 Directed Topics in Architecture V 1-3 May be repeated for credit; cumulative maximum 6 hours. Topics related to areas of emphasis in the program and student specialization.

525 History and Theory 3 Prereq graduate standing; 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 graduate standing; 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 graduate standing; Arch 330; Arch 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/I D/L A 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/I D/L A 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 II 3 May be repeated for credit; cumulative maximum 9 hours. Prereq Arch 446. Advanced computer animation techniques; advanced specialization in building/design simulation, art animation, science/engineering animation.

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 approaches to design thinking in the topic areas of people and place, history, theory and criticism, and physical design.

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 graduate standing; 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 graduate standing. 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 or certified Arch major with senior 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 May be repeated for credit. Prereq graduate student in M Arch degree program. Placement in an approved industrial, professional, or governmental situation for specialized or general experience.

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.

Construction Management Courses

Cst M

102 Introduction to Construction and Architecture 2 Introduction to the construction industry; reviewing contract documents, methods of project management and current issues pertaining to the industry.

201 Materials I 3 Prereq certified Cst M major. Introduction to construction materials; primary materials used in below-grade substructures and above-grade superstructures using Construction Specification Institute (CSI) format.

202 Materials II 3 Prereq Cst M 201; certified Cst M major. Introduction to primary materials in construction of building envelopes, interiors, interior surfaces and finishes using Construction Specification Institute (CSI) format.

232 Construction Systems 3 (2-2) Prereq certified Cst M major; Arch 101 or M E 103; Arch 330. Theory and application of various construction systems and material applications.

252 Construction Administration and Documentation 4 (3-2) Prereq certified Cst M major; Cst M 102. Study and understanding of administrative procedures found within construction projects and respective documentation.
253 Building Codes and Zoning 3 Prereq certified Cst M major. Fundamental understanding of how to research, interpret, and apply zoning regulations and building code requirements.


262 Legal Aspects of Construction and Design 3 Prereq B Law 210; Cst M 253; certified Cst M major. Law governing construction and design; liability, delay and disruption theory; breach of contracts; fundamentals of clauses; interpretation and conflict resolution.

356 Sub-Structures 3 Prereq Arch 352, Cst M 262; certified Cst M major. Methods and procedures for site work, excavation, dewatering, building foundation and equipment, productivity, finance and safety requirements.

357 Super Structures 3 Prereq Cst M 356; certified Cst M major. Methods and procedures for constructing a commercial structure from ground elevation up.

360 Planning and Scheduling 3 (2-3) Prereq certified Cst M major; Cst M 252. Planning construction processes and utilizing computer applications as they pertain to scheduling computations.

370 Estimating I 3 (2-3) Prereq certified Cst M major; Cst M 252. Certified civil engineering majors may take by permission. Applications of quantity survey, techniques in creation of unit costs, introduction of job expenses and bid presentation.

371 Estimating II 3 (2-3) Prereq certified Cst M major; Cst M 370. Bidding application, advance concepts in the creation of imot cpst and computer software applications.

440 Architectural Acoustics for Construction Management 2 Prereq Phys 101 or higher; Math 107 or higher. Same as Arch 440.

442 [M] Theory of Urban Design and Development 3 Prereq certified major in Arch, Cst M, business, or public administration. Same as Arch 442.


452 Construction Practice Management 3 Prereq certified Cst M major. Business/management practices for a construction firm; building construction project management.

456 Methods Procedures I 4 Prereq certified Cst M major; Cst M 371. Basic knowledge of site layout, heavy earth moving equipment, excavation and related safety issues.

457 Methods Procedures II 4 Prereq certified Cst M major; Cst M 456. Examination of components in a commercial building form; soils as a design material to finishes.

460 Construction Cost Accounting 3 (2-3) Prereq certified Cst M major; Cst M 451. Examination of cost accounting utilizing for specific project control as well as overall company control.

462 (360) Planning and Scheduling 3 (2-3) Prereq Cst M 271; certified Cst M major. Planning construction projects including terminology, scheduling development and techniques, activity identification, calculations and resource planning; introduction to software.

473 Human Productivity in Construction 3 Prereq MgtOp 301; certified Cst M major. Leadership and management concepts and methods applied to human behavior to enhance motivation, productivity and safety in construction.

475 Senior Project 3 Prereq certified Cst M major; senior standing. Senior course designed to integrate and employ learned concepts acquired during the student’s education.

495 Seminar in Construction Management V 1-4 Prereq certified Cst M major. 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 Assistant Professor D. Pietz (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), R. Jussaume (Community and Rural Sociology, Japan), Z. Dong (Chinese); Associate Professors, N. Kawamura (History, East Asia), R. Sun (History, East Asia), D. Sonnenfeld (Community and Rural Sociology, Southeast Asia); Instructors, L. Gerber (History, East Asia), R. Sun (History, East Asia), D. Sonnenfeld (Community and Rural Sociology, Southeast Asia); Assistant Professors, C. Lupke (Chinese), I. Wendt (History, South Asia, Southeast Asia); Instructors, L. Gerber (History, China), R. Staub (History, Middle East), I. Suzuki (Japanese), W. Cao (Chinese), R. Chan (History, East 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 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.

ASIAN STUDIES REQUIREMENTS (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

First Term  Hours
Biological Sciences [B] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Foreign Language Elective1 4
Second Term  Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Asia 270 or 314 3
GenEd 111 [A] (GER) 3
Math Proficiency [N] (GER) 3
Foreign Language Elective1 4
Second Year

First Term  Hours
Asia 131, 275, or 315 3
Asia 272, 273, or 306 3
Foreign Language Elective1 4
Physics Sciences [P] (GER) 4
Second Term  Hours
Arts & Humanities [H,G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER) 3
Foreign Language Elective1 4
Major Coursework 3
Social Sciences [S,K] (GER) 3
Elective 3
Complete Writing Portfolio

Third Year

First Term  Hours
Communication Proficiency [C,W] (GER) 3
Intercultural Studies [L,G,K] (GER) 3
Major Coursework 3
Science Elective (GER) 4
Elective 3

Second Term  Hours
Arts & Humanities [H,G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER) 6
Major Coursework [M] 3
Electives 6

**Fourth Year**

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>First Term</strong></td>
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<tr>
<td>Major Coursework</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course (T GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
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<tr>
<td><strong>Second Term</strong></td>
<td></td>
</tr>
<tr>
<td>Major Coursework</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>11</td>
</tr>
</tbody>
</table>

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 Asia courses, they are encouraged to complete a minimum of one year college level study of a different Asian language.

Geographic Distribution: 9 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).

Disciplinary Distribution: 12 hours (6 hours minimum from one of the following groups): Asia humanities courses (H or G GER); and Asia social sciences 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**

**Minor in 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 Asia courses).

**Certificates**

**Certificate in East Asian Studies for Business Majors**

The Certificate in East Asian Studies for College of Business Majors requires a total of 17 credit hours and is open to any declared College of Business undergraduate major in good standing. The requirements are: Chin 101 and 102 or Japn 101 and 102 or other East Asia Language available through study abroad; one from Asia 121, 275, 315, 373, 374, 475, 476, or 477; Asia 479; and one from IBus 380, IBM/IBus 453, MgtOp/IBus 453, Econ/IBus 470, Fin/IBus 481 or Mktg/IBus 482.

Students who complete two semesters of foreign language beyond the one-year requirement may waive three credits required from Asia 121, 275, 315, 374, 475, or 477. Study abroad is encouraged and appropriate credit toward completion of certificate will be accepted at the discretion of the Asia Program Director. No more than 4 hours earned at other institutions that may apply towards the certificate and no more than 4 hours may be pass/fail. Native speakers of an East Asian language may waive the foreign language requirement, but must take eight additional hours from the list of "cultural survey" courses (see department for an approved list). A minimum cumulative gpa of 2.0 is required for successful completion of the certificate.

**Certificate in East Asian Studies for Engineering and Architecture Majors**

The Certificate in East Asian Studies for College of Engineering and Architecture Majors requires a total of 17 credit hours and is open to any declared College of Engineering and Architecture undergraduate major in good standing.

The requirements are: Chin 101 and 102 or Japn 101 and 102 or other East Asia Language available through study abroad; two from Asia 121, 274, 315, 373, 374, 475, 476, or 477; and Asia 479.

Students who complete two semesters of foreign language beyond the one-year requirement may waive three credits required from Asia 121, 275, 315, 374, 475, or 477. Study abroad is encouraged and appropriate credit toward completion of certificate will be accepted at the discretion of the Asia Program Director. No more than 4 hours earned at other institutions that may apply towards the certificate and no more than 4 hours may be pass/fail. Native speakers of an East Asian language may waive the foreign language requirement, but must take eight additional hours from the list of "cultural survey" courses (see department for an approved list). A minimum cumulative gpa of 2.0 is required for successful completion of the certificate.

**Description of Courses**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td><strong>Asia Courses</strong></td>
<td></td>
</tr>
<tr>
<td>Asia 111 [G] Asian Film</td>
<td>3 Same as Chin 111.</td>
</tr>
<tr>
<td>Asia 121 [G] Modern Chinese Culture</td>
<td>3 Same as Chin 121.</td>
</tr>
<tr>
<td>201 Special Topics: Study Abroad V 1-15</td>
<td>May be repeated for credit. S, F grading.</td>
</tr>
<tr>
<td>270 [K] India: History and Culture</td>
<td>3 Same as Hist 270.</td>
</tr>
<tr>
<td>271 [K] Southeast Asian History: Vietnam to Indonesia</td>
<td>3 Same as Hist 271.</td>
</tr>
</tbody>
</table>

272 [I] Introduction to Middle Eastern History 3 Same as Hist 272.
275 [K] Introduction to East Asian Culture 3 Same as Hist 275.
301 [K] East Meets West 1 May be repeated for credit; cumulative maximum 6 hours. Interdisciplinary course on the encounter between Asia and the West taught as a multicultural symposium. S, F grading.
306 [K] Cultures and Peoples of the Middle East 3 Same as Anth 306.
311 [M] Great Asian Directors 3 (2-3) Prereq China 111, 121 or 131. Same as Chin 311.
314 [G,M] Philosophies and Religions of India 3 Same as Phil 314.
315 [G,M] Philosophies and Religions of China and Japan 3 Prereq 3 hours Phil. Same as Phil 315.
330 [M] The Art of War 3 (2-2) Prereq Chin 111, 121 or 131. Same as Chin 330.
370 [G] History of Ancient and Medieval India 3 Same as Hist 370.
373 [G] Chinese Civilization 3 Same as Hist 373.
387 World War II in Asia and the Pacific 3 Same as Hist 387.
401 Special Topics - Study Abroad V 1-12 May be repeated for credit. S, F grading.
470 [M] Gandhi: India and the United States 3 Prereq completion of one Tier I and three Tier II courses. Same as Hist 470.
472 [M] The Middle East Since World War I 3 Same as Hist 472.
473 [T] The Middle East and the West 3 Same as Hist 473.
474 Modern South Asia: Community and Conflict 3 Same as Hist 474.
475 Mao to Deng: The People’s Republic of China, 1949 - 1999 3 Same as Hist 475.
476 [M] Revolutionary China, 1800 to Present 3 Same as Hist 476.
479 [T] History of East Asian Economic Development Since 1945 3 Same as Hist 479.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.
School of Biological Sciences

sbs.wsu.edu
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 Ph.D. programs in botany and zoology. The School also offers undergraduate minors in zoology and biology.

Facilities

There are modern facilities for study of cell and developmental biology, genetics, plant and animal physiology, anatomy and ultrastructure, functional morphology, ecology, molecular systemsatics, and behavioral, environmental, and evolutionary biology. The University's rural location is conducive to field studies on the 800 acre George E. Hudson Biological Preserve at Smoot Hill. Special facilities include the collections of the Charles R. Conner Museum, the Marion Owenby Herbarium, the Franceschi Microscopy and Imaging Center, plant growth facilities, and a laboratory for Bioanalysis and Biotechnology with facilities for both DNA genotyping and stable isotope analyses.

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 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. The Schedule of Studies below provides a sample curriculum for each of the degree options offered by the School of Biological Sciences. A 2.00 overall minimum GPA is required in all coursework for all college and departmental requirements. A maximum of 4 credits of coursework that are graded S, F (i.e., 490, 491, 495, 496, 499) may be used toward fulfilling departmental requirements or program options, and no courses taken P, F can be applied toward fulfilling departmental requirements or program options. Students may not double major in both biology and zoology.

 Biology

Six options are available for the Bachelor of Science degree in Biology: biology education, botany, general biology, ecology/evolutionary biology, entomology, and pre-physical therapy/pre-occupational therapy/pre-physician's assistant. 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 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 pre-physical therapy/pre-occupational therapy/pre-physician's assistant 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 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 http://sbs.wsu.edu 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 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.

BIOLOGY - BOTANY OPTION (120 HOURS)

<table>
<thead>
<tr>
<th>First Year</th>
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<tbody>
<tr>
<td>Biol 106 [B] (GER)</td>
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<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>
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</table>
### Tier III Course \([T]\) (GER) 3

Program Option Courses or Electives 1 12

### Second Term

<table>
<thead>
<tr>
<th>Course</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>Chemistry 345</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency ([C,W]) (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
<td>4</td>
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<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
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### Fourth Year

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<tr>
<td>Communication Proficiency ([C,W]) (GER)</td>
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<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
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### Fifth Year

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<th>Course</th>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Chemistry 345</td>
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<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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</table>

### Biology - Education Option  

#### Second Year

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<th>Course</th>
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<tbody>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Chemistry 345</td>
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<td>Math 140 [N] or 171 [N] (GER)</td>
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### Biology - Entomology Option  

#### First Year

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<th>Course</th>
<th>Hours</th>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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</tr>
<tr>
<td>Chemistry 345</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency ([C,W]) (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

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1 A minimum of 3 credits of biological science courses should be selected from the following courses or chosen in consultation with an advisor: Biol 325, 392, 406, 417, 429, 431, 440, 452, 460, 462, 463, 469, 470, 499, 504, 512, 513, 516, 518, 526, MBioS 401 (Biol 500-level courses may be taken with approval of the advisor and instructor).

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**Biology - Ecology and Evolutionary Biology Option**  

#### First Year

<table>
<thead>
<tr>
<th>Course</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>Chemistry 345</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency ([C,W]) (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

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1 A three-week intensive experience in a K-12 public or private school in the student’s home community takes place mid-May through early June after the completion of WSU’s spring semester.

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2 A minimum of 9 credits of biological science courses should be selected from the following courses or chosen in consultation with an advisor: Biol 251, 305, 315, 320, 322, 340, 352, 353, 412, 418, 423, 428, 432, 438, 462, 463, 469, Entom 343, MBioS 340, 440, 442, 450. One course must fulfill [M] requirement.

### Biological Sciences
Second Year

First Term  
Arts & Humanities [H,G] (GER)  
Chem 345  
Entom 343 [M]  
Entom 344 [M]  
GenEd 111 [A] (GER)  
Biol 120, 320, or 332  
Biol 301  
Phys 101 [P] or 201 [P] (GER)  
Complete Writing Portfolio  

Program Option Courses or Biology Electives  
Arts & Humanities [H,G], Intercultural Studies  

Second Term  
Biol 120, 320, or 332  
Biol 301  
Phys 101 [P] or 201 [P] (GER)  
Complete Writing Portfolio  

Third Year

First Term  
Arts & Humanities [H,G], Intercultural Studies  

Second Term  
Biol 120, 320, or 332  
Biol 301  
Phys 101 [P] or 201 [P] (GER)  
Complete Writing Portfolio  

Fourth Year

First Term  
Arts & Humanities [H,G], Intercultural Studies  

Second Term  
Biol 120, 320, or 332  
Biol 301  
Phys 101 [P] or 201 [P] (GER)  
Complete Writing Portfolio  

Program Option Courses or Biology Electives  
Arts & Humanities [H,G], Intercultural Studies  

BIOL - PRE-MEDICAL OPTION (120 HOURS)

Biology Electives  
Arts & Humanities [H,G], Intercultural Studies  

Third Year

First Term  
Arts & Humanities [H,G], Intercultural Studies  

Second Term  
Biol 120, 320, or 332  
Biol 301  
Phys 101 [P] or 201 [P] (GER)  
Complete Writing Portfolio  

Program Option Courses or Biology Electives  
Arts & Humanities [H,G], Intercultural Studies  

Fourth Year

First Term  
Arts & Humanities [H,G], Intercultural Studies  

Second Term  
Biol 120, 320, or 332  
Biol 301  
Phys 101 [P] or 201 [P] (GER)  
Complete Writing Portfolio  

Program Option Courses or Biology Electives  
Arts & Humanities [H,G], Intercultural Studies  

ZOOLOGY - GENERAL OPTION (120 HOURS)

First Year

First Term  
Arts & Humanities [H,G], Intercultural Studies  

Second Term  
Biol 120, 320, or 332  
Biol 301  
Phys 101 [P] or 201 [P] (GER)  
Complete Writing Portfolio  

Program Option Courses or Biology Electives  
Arts & Humanities [H,G], Intercultural Studies  

Third Year

First Term  
Arts & Humanities [H,G], Intercultural Studies  

Second Term  
Biol 120, 320, or 332  
Biol 301  
Phys 101 [P] or 201 [P] (GER)  
Complete Writing Portfolio  

Program Option Courses or Biology Electives  
Arts & Humanities [H,G], Intercultural Studies  

FOURTH YEAR

First Term  
Arts & Humanities [H,G], Intercultural Studies  

Second Term  
Biol 120, 320, or 332  
Biol 301  
Phys 101 [P] or 201 [P] (GER)  
Complete Writing Portfolio  

Program Option Courses or Biology Electives  
Arts & Humanities [H,G], Intercultural Studies  

1 A minimum of 4 credits of Biological Sciences courses should be selected from the following courses or chosen in consultation with an advisor: Anth 260; Biol 324, 352, 491, 495, MBioS 303, 423, 440; or Neuro 301, 401, 430.
### Fourth Year

#### First Term
- First Term
  - Biol 350 or 353
  - Biol 405
  - Program Option Courses or Electives
    - 6-8

#### Second Term
- Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)
  - 3
- Program Option Courses or Electives
  - 9
- Tier III Course [T] (GER)
  - 3

1 A minimum of 9 credits of Biological Science courses should be selected from the following courses or chosen in consultation with an advisor:
- Biol 305, 352, 393, 410, 412, 418, 423, 428, 432, 438, 447, 461, 469, 486, 495; Entom 343/344, 448; or MBioS 303.

**ZOOLOGY - PRE-VETERINARY/ANIMAL CARE OPTION (120 HOURS)**

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

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
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<tr>
<td>First</td>
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<tr>
<td>Biol 106 [B] (GER)</td>
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<tr>
<td>Chem 106 [P] (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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<td>Second</td>
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<tr>
<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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<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
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#### Second Year

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<tr>
<th>Term</th>
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<td>First</td>
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<tr>
<td>Biol 106 [B] (GER)</td>
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<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>
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<td>Second</td>
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<tr>
<td>Biol 107 [B] (GER)</td>
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<tr>
<td>Chem 106 [P] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>Math 140 [N] or 171 [N] (GER)</td>
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#### Third Year

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<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
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<tr>
<td>First</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biol 321 or 418</td>
<td>4</td>
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<td>Biol 352</td>
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#### Fourth Year

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<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
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<tr>
<td>First</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Biol 322 or 352</td>
<td>4</td>
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</table>

**Minors**

**Biology**

A minor in biology requires a minimum of 20 hours in Biology coursework including Biol 106, 107, 301 and 8 additional hours at the 300-level or above. No more than 2 hours in Biol 495, 496 or 499 may be included in the 20 hours. 10 credit hours must be earned in residence at WSU. Students who major in biology or zoology cannot be granted a minor in biology.

**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] General Biology Lecture**

Understanding biology as a science and its effect on issues within society. Lecture only; not for life science majors. Credit not granted for students who have completed Biol 102, 106, or 107.

**102 [B] General Biology**

4 (3-3) Understanding biology as a science and its effect on issues within society. Lecture and laboratory; not for life science majors. Credit not granted for students who have completed Biol 101, 105, 106, or 107.
105 [B] General Biology Laboratory 1 (0-3) Prereq college-level nonlaboratory general biology course. Understanding biology as a science and its effect on issues within society. Laboratory only; not for life science majors. Credit not granted for students who have completed Biol 102, 106, and/or 107.

106 [B] Introductory Biology: Organismal Biology 4 (3-3) First or second semester of a one-year sequence for science majors and pre-professional students. Biology of organisms; plants, animals, ecology and evolution.

107 [B] Introductory Biology: Cell Biology and Genetics 4 (3-3) Prereq one semester of chemistry or c//. First or second semester of a one-year sequence for science majors and pre-professional students. Cell biology and genetics of prokaryotes and eukaryotes.

120 [B] Introduction to Botany 4 (3-3) A survey of the plant kingdom; structure and function of vascular plants.

135 [B] Animal Natural History 3 Identification, life history, habitat relations, ecology, behavior, and conservation of animals commonly found in the Pacific Northwest.


201 [B] Contemporary Biology 1 Prereq Biol 101, 102, 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 4 (3-3) Rec one semester general biology and one semester chemistry. Basic physiological processes in humans from the cellular to the organismal level.

301 General Genetics 4 Prereq Biol 106 and 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, nearshore 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//. Water relations, mineral nutrition, photosynthesis, respiration, and growth of plants. Via WHETS; not open to Pullman Campus students.

319 Introductory Plant Physiology Laboratory 1 (0-3) Prereq Biol 106 or 120; organic chemistry or c//; Biol 318 or c//. Introductory plant physiology laboratory. Not open to Pullman Campus students.

320 Introductory Plant Physiology 4 (3-3) Prereq Biol 106 or 120; org chem or c//. Water relations, mineral nutrition, photosynthesis, respiration, and growth of plants. Lecture and laboratory.


322 Invertebrate Biology 4 (3-3) Prereq Biol 106. Phylogenetic relationships, development, and functional ecology of the invertebrate animals.

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.


332 Systematic Botany 4 (2-6) Prereq Biol 102, 106 or c//, 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; Biol 352; Rec c// 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 I 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.

403 Evolutionary Biology 3 Prereq Biol 301. The survey of evidence for evolution and operation of evolutionary processes that influence adaptation, diversification and speciation in organisms.

405 Principles of Organic Evolution 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 Microtecnique 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 or 106; Biol 107 or Chem 105; Chem 106; junior standing; completion of one Tier I and two Tier II courses. Biological basis of sex and its relationship to body function, women and health care, and the impact of social and cultural perspectives on the experience of being female.

408 [T] Contemporary Genetics 3 Prereq junior standing; one Tier I and three Tier II courses. Genetics as it relates to current events; inquiry into the impact of genetic technology on today's society. Credit not normally granted for MBios 301/Biol 301 and Biol 408.

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 Biol 106; Biol 107; 6 hours of physical and/or biological science. The ecology and conservation of marine organisms, communities, and ecosystems.

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) Prereq UI Fish 314, 411; Stat 251. Same as NATRS 416.

417 Stress Physiology of Plants 3 Prereq Biol 320 or c//. 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 Rec Biol 107 or 120. 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 332 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 513. Cooperative course taught by UI (Biol 450), open to WSU students.

456 Neuroethology 3 Prereq Biol 301, MBio 303, or an introductory neuroscience course; Stat 412 or c/. Introduction to neural mechanisms underlying natural animal behaviors from the cellular level to the organismal level.

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/RP 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.

486 Marine Invertebrate Communities 2 (0-6) Biol 106, 107; 6 hours of physical and/or biological science. Survey of marine invertebrates and their habitats. One-week field/lab course at a marine station.


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.

494 Seminar in Mathematical Biology 1 May be repeated for credit; cumulative maximum 4 hours. Prereq one course in math and one course in biology. Same as Math 494. S, F grading.

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. Graduate-level counterpart of Biol 405; additional requirements. 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.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Notes</th>
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<tbody>
<tr>
<td>511</td>
<td>Reproductive Biology of Fishes</td>
<td>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.</td>
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<tr>
<td>512</td>
<td>Molecular Mechanisms of Plant Development</td>
<td>3 Prereq Biol 320. Physiology of growth; metabolism during development and reproduction.</td>
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<tr>
<td>513</td>
<td>Plant Metabolism</td>
<td>3 Prereq Biol 320, MBiOS 303. Metabolic processes unique to plants, including the primary incorporation of nitrogen, sulfur, carbon dioxide and phosphate into bio-molecules.</td>
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<tr>
<td>514</td>
<td>Fish Genetics</td>
<td>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).</td>
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<tr>
<td>515</td>
<td>Fish Physiology</td>
<td>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.</td>
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<tr>
<td>516</td>
<td>Nutrient Transport and Partitioning in Plants</td>
<td>3 Prereq Biol 320. Structure, physiology, biochemistry and molecular biology of transport and partitioning of water, mineral nutrients and assimilated organic compounds within plants.</td>
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<tr>
<td>517</td>
<td>Stress Physiology of Plants</td>
<td>3 Prereq Biol 320 or c/. Graduate-level counterpart of Biol 417; additional requirements. Credit not granted for both Biol 417 and 517.</td>
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<tr>
<td>518</td>
<td>Photosynthesis, Photorespiration, and Plant Productivity</td>
<td>3 Prereq Biol 320 or MBiOS 303 or c/. Photosynthesis, photorespiration and the interrelationship of those biochemical, physiological, and environmental factors which determine plant productivity.</td>
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<tr>
<td>519</td>
<td>Introduction to Population Genetics</td>
<td>3 Prereq Biol 301. Survey of basic population and quantitative genetics. Cooperative course taught by WSU, open to UI students (For 511/Gen 505).</td>
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<tr>
<td>520</td>
<td>Conservation Genetics</td>
<td>2 Prereq Biol 301. Genetic studies and approaches relevant to efforts to conserve threatened and endangered populations of organisms.</td>
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<tr>
<td>521</td>
<td>Quantitative Genetics</td>
<td>3 Prereq Biol 519 or permission of instructor. Fundamentals of quantitative genetics; evolutionary quantitative genetics.</td>
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<tr>
<td>522</td>
<td>Advanced Fishery Management</td>
<td>3 Contemporary management of marine and freshwater fish and shellfish populations; commercial, recreational and subsistence fisheries; policy interface of biological systems. Cooperative course taught by UI, open to WSU students (Fish 510).</td>
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<tr>
<td>525</td>
<td>Experimental Plant Ecology</td>
<td>1 (0-3) Same as NATRS 525.</td>
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<td>526</td>
<td>Population Analysis</td>
<td>1 Prereq NATRS/Entom/Biol 529, biometry. Same as NATRS 526.</td>
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<tr>
<td>529</td>
<td>Principles of Population Dynamics</td>
<td>3 Prereq general ecology. Same as NATRS 529.</td>
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<tr>
<td>531</td>
<td>Principles of Systematic Biology</td>
<td>3 Prereq Biol 332 or equivalent animal course. Graduate-level counterpart of Biol 431; additional requirements. Credit not granted for both Biol 431 and 531.</td>
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<tr>
<td>532</td>
<td>Biology of Amphibians and Reptiles</td>
<td>4 (3-3) Prereq Biol 106. Graduate-level counterpart of Biol 432; additional requirements. Credit not granted for both Biol 432 and 532.</td>
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<tr>
<td>535</td>
<td>Angiosperm Families of the World</td>
<td>3 (2-3) Prereq Biol 332 or 431. Description, classification, and geographic distribution of families of flowering plants of the world.</td>
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<tr>
<td>536</td>
<td>Wildlife Nutrition</td>
<td>3 (2-3) Same as NATRS 531.</td>
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<tr>
<td>538</td>
<td>Animal Behavior</td>
<td>3 (2-3) Prereq Biol 106. Graduate-level counterpart of Biol 438; additional requirements. Credit not granted for both Biol 438 and 538.</td>
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<tr>
<td>548</td>
<td>Evolutionary Ecology of Populations</td>
<td>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).</td>
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<tr>
<td>551</td>
<td>ComparativeVertebrate Reproduction</td>
<td>3 Prereq Biol 106. 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.</td>
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<tr>
<td>553</td>
<td>Development and Plasticity of the Nervous System.</td>
<td>3 Comparative approach to neural development and repair in the invertebrates and vertebrates. Cooperative course taught jointly by UI WSU and UI (Biol 509).</td>
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<tr>
<td>555</td>
<td>General and Cellular Physiology</td>
<td>4 (3-3) Prereq cell physiology or genetics course. Same as V Ph 555.</td>
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<tr>
<td>557</td>
<td>Advanced Mammalian Physiology</td>
<td>4 Prereq V Ph 555. Same as V Ph 557.</td>
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</tr>
<tr>
<td>558</td>
<td>Molecular and Cellular Reproduction</td>
<td>3 (2-2) Same as MBiOS 528.</td>
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<tr>
<td>559</td>
<td>Hormones, Brain and Behavior</td>
<td>3 Prereq upper-division biology, psychology or anthropology course. Classical behavioral endocrinology from molecular to whole organisms, integrating evolutionary ecology, neuroethology and behavioral neuroendocrinology.</td>
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<tr>
<td>560</td>
<td>Plant Ecophysiology</td>
<td>3 Prereq Biol 320, 372. Graduate-level counterpart of Biol 460; additional requirements. Credit not granted for both Biol 460 and 560.</td>
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<tr>
<td>561</td>
<td>Environmental Physiology</td>
<td>3 Prereq Biol 350 or 353. Graduate-level counterpart of Biol 461; additional requirements. Credit not granted for both Biol 461 and 561.</td>
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<tr>
<td>562</td>
<td>Community Ecology</td>
<td>3 Prereq Biol 106. Graduate-level counterpart of Biol 462; additional requirements. Credit not granted for both Biol 462 and 562.</td>
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<tr>
<td>563</td>
<td>Field Ecology</td>
<td>2 (0-6) Prereq Biol 462. 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).</td>
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<tr>
<td>564</td>
<td>Molecular Ecology and Phylogeography</td>
<td>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.</td>
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<tr>
<td>565</td>
<td>Topics in Ecology and Evolution V 1-3</td>
<td>May be repeated for credit; cumulative maximum 6 hours. Current topics in ecology, population, biology, evolution, behavior, systematics, and biogeography.</td>
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<tr>
<td>566</td>
<td>Mathematical Genetics</td>
<td>3 Prereq Math 273; MBiOS 301; Stat 412, 430, or 443. Same as Math 563.</td>
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<tr>
<td>567</td>
<td>Ecological Restoration</td>
<td>3 Prereq graduate standing or by permission. Introduction to major issues in restoration ecology; major ecological dimensions of restoration.</td>
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<tr>
<td>568</td>
<td>Conservation Ecology</td>
<td>3 Graduate-level counterpart of Biol 468; additional requirements. Credit not granted for both Biol 468 and 568.</td>
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<tr>
<td>569</td>
<td>Ecosystem Ecology and Global Change</td>
<td>3 Prereq Biol 372; Chem 106. Same as ES/RP 569. Credit not granted for both Biol 469 and 569.</td>
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<tr>
<td>570</td>
<td>Diversity of Plants</td>
<td>3 Prereq graduate standing. Graduate-level counterpart of Biol 470; additional requirements. Credit not granted for both Biol 470 and 570.</td>
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<tr>
<td>581</td>
<td>Comparative Biology of Social Traditions</td>
<td>3 Prereq Anth 260 or Biol 106; senior or graduate standing. Same as Anth 581.</td>
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<tr>
<td>586</td>
<td>Special Projects in Electron Microscopy</td>
<td>2 (0-6) or 3 (0-9) May be repeated for credit. Practical training in one or more areas of electron microscopy; TEM, SEM, ultramicroscopy, specimen processing; confocal fluorescent microscopy.</td>
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<tr>
<td>587</td>
<td>Special Topics in Electron Microscopy</td>
<td>1-3 May be repeated for credit; cumulative maximum 4 hours. S, F grading.</td>
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<tr>
<td>589</td>
<td>Advanced Topics in Zoology</td>
<td>1-3 May be repeated for credit; cumulative maximum in Biol 589, 590 - 10 hours. Recent advances in zoology.</td>
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<tr>
<td>590</td>
<td>Advanced Topics in Botany</td>
<td>1-4 May be repeated for credit. Recent research in plant science.</td>
<td></td>
</tr>
</tbody>
</table>
### Department of Biological Systems Engineering

**www.bsys.e.wsu.edu**  
**Smith Hall 213**  
509-335-1578

**Professor and Department Chair,** C. O. Stöckle;  
**Professors,** G. V. Barbosa-Cánovas, R. P. Cavalieri,  
S. Chen, L. G. James, F. Pierce, J. Tang;  
**Associate Professors,** M. J. Pitts, J. Q. Wu;  
**Assistant Professors,** P. M. Ndegwa, R. T. Peters.

#### BIOLOGICAL SYSTEMS ENGINEERING

Only graduate degrees are offered. See department for more information.

### Description of Courses

#### Biological Systems Engineering Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSysE 210</td>
<td>Biological Systems Analysis and Design</td>
</tr>
<tr>
<td>BSysE 351</td>
<td>Environmental Hydrology</td>
</tr>
<tr>
<td>BSysE 430</td>
<td>Advanced Topics in Cell Biology</td>
</tr>
<tr>
<td>BSysE 456</td>
<td>Surface Hydrologic Processes and Modeling</td>
</tr>
<tr>
<td>BSysE 482</td>
<td>Food Process Engineering Design</td>
</tr>
<tr>
<td>BSysE 484</td>
<td>Thermal Processing of Foods</td>
</tr>
<tr>
<td>BSysE 486</td>
<td>Food Separation Processes Design</td>
</tr>
<tr>
<td>BSysE 499</td>
<td>Environmental Engineering Design</td>
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</tbody>
</table>

### Electron Microscopy Courses

#### E Mic

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>406</td>
<td>Microtechnique 4 (2-6) Preq by interview only. Modern methods for preparation</td>
</tr>
<tr>
<td>406</td>
<td>of biological specimens for microscopy; paraffin and resin embedding, microtomy,</td>
</tr>
<tr>
<td>406</td>
<td>anatomical, cytological and histochemical techniques. Credit not granted for</td>
</tr>
<tr>
<td>406</td>
<td>both E Mic 406 and 506.</td>
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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>406</td>
<td>Microtechnique 4 (2-6) Preq by interview only. Graduate-level counterpart of</td>
</tr>
<tr>
<td>406</td>
<td>E Mic 406; additional requirements. Credit not granted for both E Mic 406 and</td>
</tr>
<tr>
<td>406</td>
<td>506.</td>
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>407</td>
<td>Electron Microscopy Laboratory 4 (2-6) Preq one year biology; one year org chm;</td>
</tr>
<tr>
<td>407</td>
<td>one year phy; by interview only. Techniques of transmission electron microscopy;</td>
</tr>
<tr>
<td>407</td>
<td>especially those applicable to biological materials; theory and practice for</td>
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<tr>
<td>407</td>
<td>electron optics and specimen preparation.</td>
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</tbody>
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>586</td>
<td>Special Projects in Electron Microscopy 2 (0-6) or 3 (0-9) May be repeated for</td>
</tr>
<tr>
<td>586</td>
<td>credit. Practical training in one or more areas of electron microscopy; TEM, SEM,</td>
</tr>
<tr>
<td>586</td>
<td>ultramicroscopy, specimen processing; confocal fluorescent microscopy.</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>587</td>
<td>Special Topics in Electron Microscopy 1 May be repeated for credit; cumulative</td>
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<tr>
<td>587</td>
<td>maximum 4 hours. S, F grading.</td>
</tr>
</tbody>
</table>

### Special Topics in Electron Microscopy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>592</td>
<td>Advanced Topics in Cell Biology V 1-3 Same as MBioS 526.</td>
</tr>
<tr>
<td>593</td>
<td>Seminar I 1 May be repeated for credit. Literature and problems.</td>
</tr>
<tr>
<td>594</td>
<td>Advanced Topics on Vertebrate Form and Function V 1-3 May be repeated for</td>
</tr>
<tr>
<td>595</td>
<td>credit. Analysis of animal structure and function emphasizing the evolution</td>
</tr>
<tr>
<td>596</td>
<td>of complex systems; constructional morphology; ecomorphology; phylogenetics;</td>
</tr>
<tr>
<td>597</td>
<td>heterochrony; size and shape.</td>
</tr>
<tr>
<td>598</td>
<td>Seminar II 1 May be repeated for credit; cumulative maximum 8 hours. Literature</td>
</tr>
<tr>
<td>599</td>
<td>and problems.</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>600</td>
<td>Special Projects or Independent Study Variable credit S, F grading.</td>
</tr>
<tr>
<td>700</td>
<td>Master's Research, Thesis, and/or Examination Variable credit S, F grading.</td>
</tr>
<tr>
<td>702</td>
<td>Master's Special Problems, Directed Study and/or Examination Variable credit</td>
</tr>
<tr>
<td>800</td>
<td>Doctoral Research, Dissertation, and/or Examination Variable credit. S, F</td>
</tr>
<tr>
<td>800</td>
<td>grading.</td>
</tr>
</tbody>
</table>

### Additional Requirements

- **Electron Microscopy Courses**
- **Microtechnique**
- **Electron Microscopy Laboratory**
- **Special Projects in Electron Microscopy**

### Department Information

- **UI Students (AgE 487).**
- **UI Students (AgE/FST 487).**
- **UI Students (BSyE 483 and 583).**
- **UI Students (BSyE 486).**

### Course Details

- **210** Biological Systems Analysis and Design (3 (2-3) Prereq Biol 107, Chem 105; Cpt S 153 or 203. Application of computer-aided 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.

- **320** [M] Mechanics of Biomaterials (4 (3-3) Prereq BSysE 210, C E 211. Composition of biological materials, mechanical and thermal properties, chemical and biological changes. Cooperative course taught by WSU, open to UI students (BSyE 386).

- **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 (AgE 353). Credit not granted for both BSysE 351 and 353.

- **410** [M] Project Design I (3 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 (3-16) Prereq BSysE 311 or c/. Detailed design of a biological engineering-related process, machine, structure, or system.

- **440** Biological Dynamics and Control Systems (3 (2-2) 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 Prereq BSysE 310, Ch E 211 or Ch E 310. Same as Ch E 441.

### Course Descriptions

- **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).

- **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 food. Credit not granted for both BSysE 482 and 582. Cooperative course taught by WSU, open to UI students (AgE 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).

- **491** Advanced Topics in Biological Systems Engineering (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.

---

**Professor and Department Chair,** C. O. Stöckle;  
**Professors,** G. V. Barbosa-Cánovas, R. P. Cavalieri,  
S. Chen, L. G. James, F. Pierce, J. Tang;  
**Associate Professors,** M. J. Pitts, J. Q. Wu;  
**Assistant Professors,** P. M. Ndegwa, R. T. Peters.
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 (AgE 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 (AgE 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 (AgE 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 (BSysE 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 (AgE 558), open to WSU students.

562 Systems in Integrated Crop Management  3 (2-3)  Prereq one semester calculus. 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  Prereq BSysE 481 or Ch E 330. 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/FS 587).

583 Food Separation Processes Design  3  Prereq BSysE 482. Graduate-level counterpart of BSysE 483; additional requirements. Credit not granted for both BSysE 483 and 583. Cooperative course taught by WSU, open to UI students (BSysE 483).

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)  Prereq BSysE 481. 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 (BSysE 586).

587 Food Plant Design  3  Prereq BSysE 482. 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 (BSysE 588).

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.
in their fields. Several CB graduates launch their own businesses and are industry leaders.

WSU business studies are available in Pullman; at urban campuses in Vancouver, Tri-Cities, and Spokane; and, through the University’s Distance Degree Program. Full-time professional advisors assist with academic planning. Scholarships, fellowships, and assistantships are often available. For more information and news about the College, its students, and programs, visit the Web site at: www.cbe.wsu.edu.

The faculty in the College of Business have identified six competencies our students should have upon completion of an undergraduate degree in business: 1) mastery of core business knowledge and skills; 2) critical thinking, the ability to think about problems in a structured way; 3) innovative and entrepreneurial thinking, unstructured critical thinking and ability to translate ideas into action; 4) the ability to write clearly and concisely without sacrificing content; 5) the ability to communicate well orally; and 6) the ability to work effectively in and lead work teams.

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; Mktg 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

A minimum business gpa of 2.5 is required for graduation.

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.

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; Mktg 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

WSU Course Requirements: At least 50% of business core and major specialization courses and at least nine 300-400-level business/economics courses must be WSU courses. A WSU course is a course that does not require evaluation for transfer credit.

Graduation Requirements

The chair of the department and/or the associate dean of the college must approve in writing any business courses to be satisfied by transfer, correspondence, independent study, or other credit. Additional 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 GRS, not core major requirements, and not offered by the CB may be taken pass, fail. An honors senior project is required for Honors students.

International Experience Requirement

Students within the College of Business must complete one of the following international experience requirements:

1) Study abroad for 6 or more credit hours. Two smaller study abroad programs may be cumulated to meet the entire six credit hour requirement. International students in the College of Business (not including DDP students) will meet their study abroad requirement through their study in the United States.

2) Complete a major or minor in a foreign language, Global Studies, or International Business. Honors College students that meet their demonstrated proficiency in a foreign language will also be deemed to have met the College of Business international experience requirement.

3) Complete a certificate with a major international component such as the Asia Program certificate.

4) Complete any two of the following requirements:

a) a brief study abroad program of less than 6 credit hours,

b) an international internship approved by the International Business Institute (maximum of three credit hours),

c) a College of Business international course including I Bus 380, any International Business Institute 300 or 400 level course, any cross-listed course offered by the International Business Institute,** or

d) an accepted international course (G, K, Tier III course as approved through the International Business Institute)**, or

e) an accepted petition to the International Business Institute to allow the use of extensive international travel experiences at the collegiate level for up to three credit hours towards the international experience requirement.

*Interpretations regarding the proposed policy will be made by the administrative head of the International Business Institute.

** Students may choose to enroll in the course prefix of their preference. For example, either Mktg 482 or IBus 482 may be used equivalently to satisfy this requirement.

*** Other courses may also be used under this guideline if approved through the International Business Institute.

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; Mktg 215, 301, 340; Mktg 491 or 492; MIS 250; Mktg 360; Pol 5 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 part of the first undergraduate degree. Second degree students must also go through the certification process (see Certification Requirements above) before they can enroll in 300-400-level business courses. Students should consult the CB 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.business.wsu.edu/accounting

Professor and Department Chair, J. Sweeney, Professors, R. Greenberg, D. Sanders, R. Toolson, B. Wong-On-Wing; Associate Professors, J. Cote, S. Gill, C. Lalham, T. Nunamaker; Assistant Professors, C. Bame-Aldred, S. Chan, J. Thompson, S. Thornburg, J. Thornton, J. Zubel.

Schedules of Studies

Students must complete 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 GRSs.

ACCOUNTING AND INFORMATION SYSTEMS DEGREE PROGRAM (121 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 pur-
poses. This provides preparation for careers in private, governmental, and non-profit accounting and information systems, consulting in public accounting and management consulting firms.

First Year

First Term  
Hours  
EconS 101 [S] or EconS 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  Hours  
Biological Sciences [B] (GER) 1 3 or 4  
EconS 101 [S] or EconS 102 [S] (GER) 3  
GenEd 111 [A] (GER) 3  
Math 202 [N] (GER) 3  
MIS 250 3  

Second Year

First Term  Hours  
Acctg 230 3  
Arts & Humanities [G,H] (GER) 3  
Intercultural Studies [I,G,K] (GER) 3  
MIS 171 3  
Physical Sciences [P] (GER) 1 3 or 4  
Second Term  Hours  
Acctg 231 3  
B Law 210 3  
ComSt 102 [C], 235 [C] or H D 205 [C] (GER) 3  
MgtOp 215 4  
Soc or Psych [S] (GER) 3  
Complete Writing Portfolio  

Third Year

First Term  Hours  
Acctg 330 3  
Acctg 335 or 338 3  
Fin 325 3  
MgtOp 301 3  
Mktg 360 3  
Second Term  Hours  
Acctg 331 3  
Acctg 335 or 338 3  
Engl 402 [W] or 403 [W] (GER) 3  
MgtOp 340 3  
MIS 322 3  

Fourth Year

First Term  Hours  
300-400-level elective 3  
Acctg 433 [M] 3  
EconS 301, 320, or 322 3  
MIS 372 3  
Tier III Course [T] (GER) 3  
Second Term  Hours  
Acctg 438 [M] or 439 [M] 3  
MgtOp 491 or 492 3  
Two of MIS 271, 325, 374, 375, 426 6  
Poli S Elective 3  

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 non-profit 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.

First Year

First Term  Hours  
EconS 101 [S] or EconS 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  Hours  
Biological Sciences [B] (GER) 1 3 or 4  
EconS 101 [S] or EconS 102 [S] (GER) 3  
GenEd 111 [A] (GER) 3  
Math 202 [N] (GER) 3  
MIS 250 3  

Second Year

First Term  Hours  
Acctg 230 3  
Arts & Humanities [H,G] (GER) 3  
Intercultural Studies [I,G,K] (GER) 3  
Math 202 [N] (GER) 3  

Minors

Accounting

The minor in accounting requires 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. Theory underlying the determination of income; analysis of financial statements.

331 Intermediate Accounting II  
3 Prereq Acctg 330. Continuation of Acctg 330.

335 Introduction to Taxation  

338 Cost Accounting  
3 Prereq Acctg 231; MgtOp 215; Math 107 or 201; Math 202. Management uses of cost information; cost systems and system design; cost analysis.

420 Accounting and Culture  
3 Prereq Acctg 231. Cultural differences and how they affect accounting practices and standards in a variety of countries. Not an accounting technical course.

430 Advanced Accounting  
3 Prereq Acctg 331. Enrollment limited to certified Acct or AIS majors or minors, Pullman and Vancouver campuses only. Partnership equities and extended forms of corporate ownerships and entities.

433 [M] Accounting Systems and Auditing  
3 Prereq Acctg 330. 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 433 or c/. Nature of auditing, generally accepted auditing standards, and audit procedures as related to auditing of financial statements by independent accountants.

443 (333) Business Processes and Controls 3 Prereq Acctg 231. Introduction to business processes and internal controls, including risk assessment and internal audit.

498 Accounting Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization. S, F grading.

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

520 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.

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

440 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.


487 Business Ethics 3 Prereq MgtOp 301. Same as MgtOp 487.

498 Business Law 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.

510 Business Law and Ethics 3 Prereq enrollment in the MBA program. 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 S10. Law of partnerships; corporations, securities regulations, negotiable instruments, secured transactions, property, insurance and bankruptcy; government regulation of businesses and professions.

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 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

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

First Term

EconS 101 [S] or EconS 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

BioSci 201 [S] or Intercollegiate Studies [J,K] (GER) 3
Math 202 [N] (GER) 3
MIS 250 3

Second Year

First Term

Acctg 230 3
Arts & Humanities [G,H] (GER) 3
GenEd 111 [A] (GER) 3
Physical Sciences [P] (GER) 3 or 4
Soc or Psychiat [S,K] (GER) 3

Second Term

Acctg 231 3
B Law 210 3
ComSt 102 [C], 235 [C] or H D 205 [C] (GER) 3

Center for Entrepreneurial Studies

business.wsu.edu/entrepreneurship
Todd Hall 570
509-335-2180

Director of Entrepreneurial Studies J. Rose; Instructors, M. Beatie, T. Chambers, J. Harris, K. Owen, C. Sears.

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.

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MgtOp 215 4  
Pols Elective 3  
Complete Writing Portfolio

### Third Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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<td>First Term</td>
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<tr>
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<tr>
<td>Fin 325</td>
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<tr>
<td>MgtOp 301</td>
<td>3</td>
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<td>Mktg 360</td>
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<td>Elective</td>
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<td>Second Term</td>
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</tr>
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<td>300-400-level Elective</td>
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<td>Entrp 375</td>
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<td>MgtOp 450</td>
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### Fourth Year

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<td>Engl 402 [W] or 403 [W] (GER)</td>
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<tr>
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<td>Entrp 490 [M]</td>
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<tr>
<td>Entrp 492</td>
<td>3</td>
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<tr>
<td>MgtOp 491</td>
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<tr>
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</tr>
<tr>
<td>Elective</td>
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</tr>
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</table>

### Schedules of Studies

**Students must complete 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**

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
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<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Math 201</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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</tr>
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<td></td>
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<tr>
<td>Biological Sciences [B] (GER)²</td>
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**Second Year**

<table>
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<tbody>
<tr>
<td>First Term</td>
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<tr>
<td>Acctg 230</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [G,H] (GER)</td>
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<tr>
<td>B Law 210</td>
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<td>Physical Science [P] (GER)²</td>
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<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>Second Term</td>
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</tr>
<tr>
<td>Acctg 231</td>
<td>3</td>
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<tr>
<td>ComS 102 [C], 235 [C], or H D 205 [C] (GER)</td>
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<td>MgtOp 215</td>
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<tr>
<td>Complete Writing Portfolio</td>
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**Third Year**

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<tr>
<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
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<td>MgtOp 301</td>
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<td>Pol S Elective</td>
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<tr>
<td>Econ 301</td>
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<td>Fin 421</td>
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<td>MgtOp 340</td>
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<td>Mktg 360</td>
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**Fourth Year**

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<th>Hours</th>
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<td>Engl 402 [W] or 403 [W] (GER)</td>
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<td>Fin 427 [M] or Fin 437 [M]</td>
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<td>Finance Electives²</td>
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<td>Second Term</td>
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<td>Fin 425 [M]</td>
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<tr>
<td>Finance Elective²</td>
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<td>Tier III Course (GER)</td>
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<tr>
<td>Elective</td>
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</table>

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, 447, 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.

### Minors

**Entrepreneurship**

Three from EconS 301, Fin 325, MgtOp 301, Mktg 360; and three from Entrp 375, 426, 485, 489, 490 [M], 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 Prereq MIS 250. Same as MIS 375.
  - 399 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.
  - 426 Entrepreneurial Finance 3 Prereq Acctg 231; Fin 325. Same as Fin 426.
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

Finance Courses

Fin

223 Personal Finance 3 For nonbusiness majors. Consumer credit, financial institutions, investments, mutual funds, insurance, social security, home ownership, taxes, estate planning. Credit not granted for both Fin 223 and 325.

325 Introduction to Financial Management 3 Prereq Acctg 231; Econ 101; MgtOp 215. Financial decision making, financial strategies, investment in current and fixed assets, financial instruments, and capital markets.

345 Real Estate 3 Prereq B Law 210, EconS 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.


350 Risk and Insurance 3 Prereq B Law 210; EconS 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.

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.


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.

428 Portfolio Theory and Financial Engineering 3 Prereq Fin 427 or 437. The theory of portfolio management and the use of derivative securities in portfolio risk management.

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 (449) Real Estate Finance and Investments 3 Prereq Fin 325. Instruments and institutions of real estate and real estate finance: decision-making tools, mortgage financing analysis, mortgage securities and real estate portfolios.

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.

452 Property and Liability Insurance 3 Prereq Fin 350. Analysis and management of business property, liability and consequential loss exposures; issues in the property and liability insurance industry.

456 Risk Management 3 Prereq Fin 325. Identification and analysis of loss exposures of business and non-profit organizations; application of risk treatment measures including loss control and risk financing alternatives.

481 International Finance 3 Prereq Fin 325. Same as I Bus 481.

496 Special Topics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq permission of instructor. Topics may include finance, real estate or risk management/insurance.

498 Finance Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization. S, F grading.

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

500 Economic Theory I 3 Prereq EconS 401; EconS 408 or one year of calculus. Same as EconS 500.

501 Economic Theory II 3 Prereq EconS 301; EconS 408 or one year calculus; or c// in EconS 408. Same as EconS 501.

502 Economic Theory III 3 Prereq EconS 500. Same as EconS 502.

503 Economic Theory IV 3 Prereq EconS 501. Same as EconS 503.

504 Economic Theory 3 Prereq EconS 502; EconS 503. Same as EconS 504.

510 Statistics for Economists 4 Prereq college calculus and matrix algebra. Same as EconS 510.

511 Econometrics I 3 Prereq EconS 510. Same as EconS 511.

512 Econometrics II 3 Prereq EconS 501; EconS 510. Same as EconS 512.

521 Interest Rates and Financial Markets 3 Prereq Fin 325 or 525. Real and nominal interest rates; bond pricing; term and risk structure of interest rates; investment and commercial banking; financial futures.

524 Financial Management 3 Prereq Acctg 550; EconS 101. Financial management of the firm; capital budgeting, working capital management, capital acquisition, and dividend policy.

525 Advanced Financial Management 3 Prereq enrollment in the MBA program. Theory of financial management; quantitative analysis of financial problems of the firm; empirical studies on financing modern corporations.

526 Problems in Financial Management 3 Prereq enrollment in the MBA program; Fin 325 or 525. Application of financial principles to problems in financial management; credit policy, capital budgeting, leasing and mergers, cash management.

527 Investment Analysis 3 Fin 325 or 525. A decision-making approach to the problems of asset management for personal and business portfolio.

528 Portfolio Theory and Financial Engineering 3 Prereq Fin 325, 427, or 527. The theory of portfolio management and the use of derivative securities in portfolio risk management.

529 Financial Management for High Tech Firms 3 Fin 325. Application of finance principles to firms in high-tech industries; financing, risk 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 Prereq Fin 325 or 525. Same as I Bus 581.

590 Advanced Topics in Mathematical and Quantitative Methods V 1-6 Prereq EconS 500; EconS 501. Same as EconS 590.

591 Advanced Topics in Monetary and Public Economics V 1-6 Prereq EconS 500; EconS 501. Same as EconS 591.

592 Advanced Topics in International and Development Economics V 1-6 Prereq EconS 500; EconS 501. Same as EconS 592.

593 Advanced Topics in Health, Education, Labor, and Demographic Economics V 1-6 Prereq EconS 500; EconS 501. Same as EconS 593.
### Department of Information Systems

[www.business.wsu.edu/informationsystems](http://www.business.wsu.edu/informationsystems)

**Todd 442**

509-335-5319

Philip L. Kays Distinguished Professor and Department Chair, M. Fuller; George and Carolyn Hubman Distinguished Professor in MIS, J. Valacich; Associate Professors, T. Hess, K. D. Joshi, S. Sarker, J. Wells; Assistant Professors, P. Clay, P. Datta, M. Featherman, K. Marett, G. Rose, S. U. Sarker.

#### Schedules of Studies

Students must complete 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)

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

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tr>
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<td>Tier I Science [Q] (GER)</td>
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<tr>
<td><strong>Second Term</strong></td>
<td><strong>Hours</strong></td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>EconS 101 [S] or EconS 102 [S] (GER)</td>
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<tr>
<td>Intercultural Studies [L,G,K] (GER)</td>
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#### Second Year

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<tr>
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<td>GenEd 111 [A] (GER)</td>
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<td><strong>Hours</strong></td>
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<td>Acctg 231</td>
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<td>B Law 210</td>
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Complete Writing Portfolio

#### Third Year

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<tbody>
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<tr>
<td>MgtOp 301</td>
<td>3</td>
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<tr>
<td><strong>Second Term</strong></td>
<td><strong>Hours</strong></td>
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<tr>
<td>Engl 402 [W] or 403 [W] (GER)</td>
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<td>MgtOp 340</td>
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<td>MIS 325</td>
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<tr>
<td>MIS 372 [M]</td>
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<td>MIS 374</td>
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#### Fourth Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>MgtOp 491 or 492</td>
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<tr>
<td>MIS 375 or 426</td>
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<tr>
<td>MIS 424</td>
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<td>Soc or Psych [S] (GER)</td>
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<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Term</strong></td>
<td><strong>Hours</strong></td>
</tr>
<tr>
<td>MIS 448</td>
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<tr>
<td>Pol S Elective</td>
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<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Electives</td>
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#### 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. |

**Notes:**

1. For a total of 7 hours of Biological and Physical Sciences.

### Minors

**Management Information Systems**

The minor in management information systems requires MIS 171, 250, 271, 322; and two of the following: MIS 325, 372, 374, 375, or 424.

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.

<table>
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<tr>
<td>MIS 171 Introduction to Business Programming</td>
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### DEGREE PROGRAM (120 HOURS)

**First Term**

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<th>Hours</th>
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**Notes:**

1. For a total of 7 hours of Biological and Physical Sciences.

### Management Information Systems

The minor in management information systems requires MIS 171, 250, 271, 322; and two of the following: MIS 325, 372, 374, 375, or 424.

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**

**Management Information Systems Courses**

- MIS 153 BASIC Programming 3 Same as Cpt S 153.
- MIS 171 Introduction to Business Programming 3 Fundamentals of business programming logic and development environments.
375 Global E-Commerce  3 Prereq MIS 250. Capabilities of the Internet to support and enable global electronic commerce; effective design and implementation; managerial issues.


426 Emerging Technologies II  3 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 Global IS Project Management  3 Prereq MIS 322. Principles and techniques related to managing information systems projects in global business environments.

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 topologies, 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 enrollment in the MBA Program. Special and advanced topics in MIS.

580 Information Systems Management  3 Prereq enrollment in the MBA program. Data processing organization; operations, application development, computer selection, management of computer personnel and systems.

582 Systems Analysis and Design  3 Prereq admission to MBA program. Research on and application of systems analysis, design, development and management of information systems; systems development life cycle.

595 MIS Research Foundations  3 Prereq graduate standing. Seminal works in MIS, philosophy of science and theory development.

596 Doctoral Topics  3 May be repeated for credit; cumulative maximum 9 hours. Prereq graduate standing. Advanced topics in management information systems.

597 MIS Research Methods  3 Prereq MIS 596. Study and application of research methods used in MIS research.

598 MIS Research Topics  3 Major streams of research in MIS.

599 MIS Research Proposal Development  3 Prereq MIS 598. Seminar on the process of creating a MIS research proposal.

600 Special Projects or Independent Study  Variable credit S, F grading.

800 Doctoral Research, Dissertation, and/or Examination  Variable credit S, F grading.

International Business Institute

www.business.wsu.edu/internationalbusiness

Todd Hall 570
509-335-2180


The International Business Institute (IBI) was established to coordinate international activities in the College of Business. 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 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 (120 HOURS)

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

Hours

EconS 101 [S] or EconS 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

Hours

Biological Sciences [B] (GER)i 3 or 4
EconS 101 [S] or EconS 102 [S] (GER) 3
GenEd 111 [A] (GER) 3
Intercultural Studies [I,G,K] (GER) 3
Math 202 3

Second Year

First Term

Hours

Acctg 230 3
Arts & Humanities [H,G] (GER) 3
MIS 250 3
Physical Sciences [P] (GER)i 3 or 4
Pol S Elective 3

Second Term

Hours

Acctg 231 3
B Law 210 3
ComS 102 [C], 235 [C], or H D 205 [C] (GER) 3
MgmtOp 215 4
Soc or Psych [S,K] (GER) 3
Complete Writing Portfolio

Third Year

First Term

Hours

300-400-level Elective 3
Fin 325 3
I Bus 380 [M] 3
MgmtOp 301 3
Mktg 360 3

Second Term

Hours

Foreign Language Elective 4
Group A Electives2 6
MgmtOp 340 3
Tier III Course [T] (GER) 3

Fourth Year

First Term

Hours

Study Abroad3 12
Second Term

Hours

Elective 1
Engl 402 [W] or 403 [W] (GER) 3
MgmtOp 491 or 492 3
Group A Elective2 9

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 EconS 416, 427, or 1 Bus 470. No more than 3 hours of 498 may be used.

3 Study Abroad coursework must be approved by 1 Bus director before it is taken.
### Minors

#### International Business

I Bus 380 [M]; one of I Bus 435, 453, 496, 498, or 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; EconS 102, I Bus 375, 417, 470, 472, or EconS 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.

### Description of Courses

#### International Business Courses

- **1 Bus** 375 Aspects of Sustainable Development 3 Prereq junior standing. Same as EconS 326.
- **380 [M] International Business** 3 International political economy; business relationships between nations; corporations and economic institutions.
- **399 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, S, F grading.
- **416 [M] Public International Law** 3 Prereq B Law 210. Same as B Law 416.
- **417 Comparative Economic Systems** 3 Prereq EconS 102. Same as EconS 416.
- **420 Accounting and Culture** 3 Prereq Acctg 231. Same as Acctg 420.
- **435 International Tourism** 3 Same as HBM 435.
- **453 Comparative International Management** 3 Same as MgtOp 453.
- **470 International Trade and Finance** 3 Prereq EconS 102. Same as EconS 327.
- **472 Economic Development** 3 Prereq EconS 102; Rec EconS 301. Same as EconS 427.
- **481 International Finance** 3 Prereq Fin 325. Financial problems of multinational businesses; international financial environment; long-term capital commitment to international venture, financial techniques for firm operation, and international investment.
- **482 [M] International Marketing** 3 Prereq I Bus 380; Mktg 360. Opportunities, characteristics, trends in foreign markets; alternative methods; strategies; organizational planning, control; problems of adapting American marketing concepts and methods.
- **492 Small Business Policy** 3 Prereq Acctg 230, B Law 210, Fin 325, MgtOp 301, Mktg 360. Same as MgtOp 492.
- **496 Special Topics** V 1-3 May be repeated for credit; cumulative maximum 6 hours.

#### First Year

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<td>Biological Science [B] (GER)</td>
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<td>EconS 101 [S] or EconS 102 [S] (GER)</td>
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<td>Math 202 [N] (GER)</td>
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<td>Complete Writing Portfolio</td>
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### Department of Management and Operations

- [www.business.wsu.edu/managementoperations](http://www.business.wsu.edu/managementoperations)
- **Todd 342** 509-335-7527
  
  Professor and Department Chair, R. Reed; Professors, S. Ahn, B. Chen, J. Cullen, S. Fotopoulos, J. Goodstein, D. Lemak, T. Tripp, M.C. Wang; Associate Professors, T. Baker, K. Butterfield, K. Kuhn, C. Munson; Assistant Professors, J. Arthurs, K. Liu, V. Miskin (clinical), S. Shin, L. Trevino.

#### Schedules of Studies

Students must complete 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.

#### MANAGEMENT & OPERATIONS DEGREE PROGRAM (120 HOURS)

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.

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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 310, 312; MgtOp 101, 215. Not less than three from Fin 325, 345, 350; I Bus 380; MgtOp 301, 340; 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

The minor in human resource/personnel requires MgtOp 215 or PsyCh 311; and MgtOp 301, 401[M], 450, 455, and 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 course work.

Description of Courses

Management and Operations Courses

MgtOp

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 or/or Mktg 360.

215 Statistics 4 (3-2) Prereq Math 201; MIS 250 or c//. 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.


401 [M] Leadership Skills for Managers 3 Prereq MgtOp 301. Leadership, motivation, team building, group dynamics, interpersonal and group conflict, and job design


418 Quality Improvement for Management 3 Prereq MgtOp 215. Total quality management as used in industries; philosophy of Deming and others, control charts, process capability analysis, team tools.


450 Personnel and Human Resources Management 3 Prereq MgtOp 215; 301. Policy and practice in human resource utilization, selecting, training, motivating, evaluating, and compensating employees; labor relations; EEO legislation.

451 Business Statistical Analyses 3 Prereq admission to MBA program. Advanced preparation for graduate-level business analyses, applied finite math and statistics principles.


453 Comparative International Management 3 Cross-cultural implications of management theories and approaches; the role of national culture in management theory and practice.

455 [M] Staffing 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.

456 Compensation Administration 3 Prereq MgtOp 450 or c//. Theoretical, research, and applied issues related to the compensation of employees.

470 Business Modeling with Spreadsheets 3 Prereq Math 202 or 220; MIS 250. Spreadsheet modeling and solution of business problems with emphasis on operations management and logistics applications.


485 Negotiation Skills 3 Bargaining skills across a broad range of business settings; experiential work. Credit not granted for both MgtOp 485 and 585.

487 Business Ethics 3 Prereq MgtOp 301. The nature and sources of ethical conflicts and dilemmas individuals and organizations confront in the business context.

489 Entrepreneurial Management 3 Prereq Econ 311, 102, Fin 325, MgtOp 301, MIS 250, Mktg 360. Philosophy and nature of entrepreneurship for all business organizations; analytical, financial and interpersonal entrepreneurial skills.


492 Small Business Policy 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.

496 Seminar 3 May be repeated for credit.

498 Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization. S, F grading.

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

501 Management of Organizations 3 Leading, organizing, decision making, planning, controlling, conflict management, and behavior in work organizations.

516 Time Series 3 Prereq MgtOp 515 or Stat 443. ARIMA models; identification, estimation, diagnostics, and forecasting; seasonal adjustments, outlier detection, intervention analysis and transfer function modeling.

517 Quality Improvement for Management 3 Philosophy and evolution of quality control, control charts, process capability analysis, applications.

518 Techniques of Sampling 3 Prereq MgtOp 591. Sample surveys for business use; theory and application with emphasis on appropriate sample types and the estimation of their parameters.

519 Applied Multivariate Analysis 3 Prereq MgtOp 591 or Stat 443. Principal components, factor analysis, discriminant function, cluster analysis, multivariate normal distribution, Hotelling’s T2 and MANOVA.

540 Deterministic Business Models 3 Prereq MgtOp 340. Decision analysis, linear optimization models, nonlinear models, network analysis including PERT, and dynamic programming as applied to business.


581 Operations Management 3 Prereq enrollment in the MBA program. Analytical approach to solving problems in production and operations management.

582 Personnel and Human Resource Management 3 Human resources and personnel administration; selection, training, compensation, performance appraisal, labor relations, health and safety, EEO legislation.

583 Organization Design 3 Development and design of contemporary systems of organization and management.

585 Negotiation Skills 3 Graduate counterpart of MgtOp 485; additional requirements. Credit not granted for both MgtOp 485 and 585.

586 Applied Multiple Time Series Analysis 3 Prereq MgtOp 516. Approaches to modeling and analysis of multiple time series.
Department of Marketing

www.business.wsu.edu/marketing

Todd 367
509-335-0924

Professor and Department Chair, D. Muehling;
Professors, J. Cote, J. Johnson, E. Spangenberg, D. Stem,
P. Tansuhaj, U. Umesh; Associate Professors, D. Sprott;
Assistant Professors, K. Ehrlich, G. Gregoire, C. Plouffe.

Schedules of Studies

Students must complete one humanities, social science, or Tier II course that is also designated as an American Diversity [D] course. Note: Honors students complete Honors requirements in place of GERs.

MARKETING DEGREE PROGRAM (120 HOURS)

Preparation for careers in marketing management, sales, retail management, marketing research, brand management, and promotion.

First Year

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1 For a total of 7 hours of Biological and Physical Sciences.
2 Group A electives are: Four from Mktg 379, 450, 457 [M], 461 [M], 468, 470, 477, 478 [M], 480, 482 [M], 487, 490 [M], 496, 498. No more than 3 hours of 498 may be used.
3 Group B electives are: Two from Accctg 338; EconS 301, 321; I Bus 380 [M]; MktgOp 485; MIS 375; Mktg 499; additional courses with advisor approval.

Minors

Marketing

Mktg 360; 407 or 417; four of Mktg 368, 379, 450, 457 [M], 461 [M], 468, 470, 477, 478 [M], 480, 482 [M], 487, 490 [M], 495 [M], 496 (3 credits), 498. 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 taken in residence at WSU.

Description of Courses

Marketing Courses

Mktg

360 Marketing 3 Functions, methods, and middlemen 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.

379 Professional Sales 3 Prereq Mktg 360. Theory and principles of professional sales with special attention to the business-to-business market.

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 Mkgt 360. Case and project-based course exploring marketing's role in the Internet and electronic commerce.

457 [M] Advanced Consumer Behavior 3 Prereq Mkgt 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 Mkgt 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 Mkgt 360. Retailing system; organization, merchandising models, pricing, promotion, location, and control procedures; management decision processes.

477 Promotion Management 3 Prereq Mkgt 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 Mkgt 360. The role of selling in the marketing mix; problems in planning, organizing, evaluating and controlling the sales force.

480 Business to Business Marketing 3 Prereq Mkgt 360. Case and project-based course exploring business-to-business marketing in traditional and electronic environments.

482 [M] International Marketing 3 Prereq I Bus 380; Mkgt 360. Same as I Bus 482.

487 Independent Research 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Mkgt 368, 457. Independent research project with faculty member including problem statement, literature review, hypotheses, data collection, and reporting of results.


495 [M] Marketing Management 3 Prereq Mkgt 360; 6 hours Mkgt. Analysis of marketing policy; approaches to solutions of marketing problems.

496 Special Topics V 1-3 Prereq Mkgt 360. May be repeated for credit; cumulative maximum 6 hours.

498 Marketing Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Prereq Mkgt 360. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. Prereq Mkgt 360. S, F grading.

505 Survey of Marketing 3 Prereq enrollment in the MBA program. Marketing management; relevance of marketing to company profitability and consumer satisfaction; decision regarding price, product, promotion, and distribution.

506 Marketing Management and Administrative Policy 3 Prereq enrollment in the MBA program. Marketing management and administrative policies as they relate to concepts, strategies, and decision making.

507 Research Methodology 3 Prereq Mktg 215 or 591. Types of data needed and available, collection and analysis of data as they relate to decisional research.

511 Technology and New Product Marketing 3 Prereq Mkgt 360 or 505. Introduction of new products that are based on new technology; exploration of actual products in the market.

515 Seminar in Marketing 3 May be repeated for credit; cumulative maximum 9 hours. Marketing structure and behavior from economic and behavioral perspectives; social evaluation and behavioral implications of marketing strategy.

517 Consumer Behavior Theory 3 Prereq Mkgt 505. Theory in consumer and buyer behavior; conceptual and empirical research role of purchase and consumption behavior on society and marketing.

520 Seminar in Consumer Behavior 3 Advanced, doctoral-level topics in consumer behavior.

521 Seminar in Marketing Management 3 Advanced, doctoral-level topics in marketing management.

522 Seminar in Marketing Theory 3 Advanced, doctoral-level topics in marketing theory.

523 Seminar in Research Design 3 Advanced, doctoral-level topics in research design.

524 Seminar in Research Techniques 3 Advanced, doctoral-level topics in research techniques.

528 Doctoral Topics 3 Advanced topics in marketing.

530 Special Projects or Independent Study Variable credit S, F grading.

535 Master's Special Problems, Directed Study, and/or Examination Variable credit S, F grading.

540 Doctoral Research, Dissertation, and/or Examination Variable credit S, F grading.

School of Chemical Engineering and Bioengineering

www.che.wsu.edu
Dana 118
509-335-4332


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 goal of the Chemical Engineering program 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) provide an educational experience incorporating the needs of 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 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 is accredited by ABET.

The total number of majors in the school is restricted at the junior level.

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.

Bioengineering graduates are expected to demonstrate the following educational outcomes (abilities, skills, and attributes): 1) Application of math / science / engineering: Students demonstrate an ability to use foundational knowledge in mathematics, physics, chemistry, biology, physiology, and engineering sciences; 2) Critical thinking: Students demonstrate the ability to analyze and evaluate scientific and engineering arguments or claims and to relate such claims to global, economic, environmental, professional, and societal issues; 3) Independent learning: Students demonstrate awareness of a need for ongoing professional growth and the ability to learn independently to address challenges they encounter; 4) Systems solutions: Students demonstrate the ability to use analogous thinking, synthesis and analysis, integrative systems approaches, and associated tools to solve engineering problems; 5) Teamwork: Students demonstrate an ability to work in teams comprised of engineers and others to produce joint work products; 6) Bioengineering design: Students demonstrate the ability to design engineering solutions to meet needs with biological considerations and constraints of producers, users, investors, and society; 7) Experimentation: Students demonstrate ability to design and conduct experiments, make measurements, analyze data, and interpret results and interactions between living systems and non-living materials and systems; 8) Career awareness: Students demonstrate awareness of career opportunities and contemporary issues that influence their choices of entry-level jobs and advanced training; 9) Professional ethics: Students demonstrate understanding of professional and ethical responsibility and reasoning suitable for professional decision-making; 10) Communication: Students demonstrate the ability to communicate effectively in written and oral forms to interdisciplinary audiences.

### Transfer Students

Students who are planning to transfer to Chemical Engineering or 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 the requirement for sophomore professional requirements and course sequences. Students should complete a minimum of 60 college credits and earn a minimum GPA of 2.5 before being allowed to enroll in other 300-level or higher courses.

### 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 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 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)

Students who plan to pursue pre-med studies should consult their advisor for further information about appropriate courses.

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 or 320; Biol 106 or 107. Students must be certified in bioengineering before being allowed to enroll in other 300-level or 400-level required BE courses.

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1 A total of 18 credits of arts and humanities, social sciences, intercultural studies, and world civilization 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.

Note: Students interested in the professions of medicine, veterinary medicine, or dentistry have only two Bioengineering electives free to select. Four of them are already selected (Biol 106, MbioS 301, Chem 346, and Chem 348) to give the necessary foundation for the MCAT examination required for medical school application. Note also that the two remaining electives must be 400-level AND Engineering Topics totaling six credits.

### CHEMICAL ENGINEERING - GENERAL (131 HOURS)

At least 66 of the total hours required for this degree must be in 300-400-level courses. 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.

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**Second Term**

| 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**

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**Chemical Engineering - Pre-Med (136 Hours)**

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.

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<td>Tier III Course [T] (GER)</td>
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**Description of Courses**

**Bioengineering Courses**

**B E**

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 Ch E 211; Math 423 or c//. Composition of biological materials, mechanical and thermal properties, chemical and biological changes.

330 Bioinstrumentation 3 (2-3) Prereq E E 261; certified B E major. Principles of instrumentation applicable to bioengineering systems; experimental design for measurement systems.

340 Unified Systems Bioengineering 4 (3-3) B E 210 or c//; E E 261 or c//; Math 315; certified B E major. Foundation for dynamic modeling and design of physiological systems; part one of two-semester course.

350 Introduction to Cellular Bioengineering 4 (3-3) Prereq Chem 345; Math 315; Phys 202; MBioS 303 or c//. Integrating cellular biology and engineering science by applying quantitative engineering principles for development of cellular-based materials, diagnostic devices and sensor designs.

410 [M] Bioengineering Capstone Project 1 3 (2-3) Prereq Engl 402 or c//; B E 340 or permission of instructor. Part 1 of capstone engineering design project; customer needs, design requirements, conceptual design, business assessment, project proposal, and presentation.
211 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; nonengineer; 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 320 or (CE 215 and MSE 301); Math 315. 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 340; emphasis on feedback control system analysis and design, with examples from physiological systems.

445 Cardiovascular Systems Engineering 3 Prereq B E 340. Mathematical modeling used to integrate components of the cardiovascular system into a functioning simulation that allows critical systems-level study; individual and group projects are required.

481 Advanced Topics in Bioengineering V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Junior status; permission of instructor. Advanced topics in bioengineering.

495 Internship in Bioengineering V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq B E 205; prior approval of advisor and supervisor. Work experience related to academic learning. S, F grading.

499 Special Problems in Bioengineering V 1-4 May be repeated for credit; cumulative maximum 6 hours. Prereq sophomore status; prior approval of advisor and instructor. Special problems or guided independent study in bioengineering. S, F grading.

525 Biomechanics 3 Prereq B E 320 or (CE 215 and MSE 301); Math 315. 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; 322 or c/. Design and evaluation of equipment used in continuous contacting.

396 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, 322, 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 Prereq junior in engineering or physical science. 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.

476 Biomedical Engineering Principles 3 Prereq Ch E 301, 310. The application of chemical engineering principles to biomedical processes.

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 processings, integrated circuit manufacturing, in situ destruction of hazardous waste.

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 Prereq BSysE 481 or Ch E 330. 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 (Ch E 515).

515 Convective Heat Transfer 3 Same as M E 515.

527 Macroscopic Thermodynamics 3 Same as M E 527.
The Department of Chemistry offers a program leading to the Bachelor of Science degree in Chemistry, with options in general chemistry, materials chemistry, and inorganic 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 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 general 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. Student wishes for high school chemistry or one year of Advanced Placement high school chemistry and has scored 5 on the Advanced Placement Exam, credit is granted for 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, credit is granted for Chem 105. Students who complete an International Baccalaureate program with a high...
level pass and a grade of 4 or more on the exam are given credit for Chem 101.

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 Material 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.

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.

Lab Fees: A charge for expendable laboratory supplies is made in each laboratory course.

Schedules of Studies

Students must complete 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 - ENVIRONMENTAL OPTION

(125 HOURS)

The requirements for all chemistry options are the same through the first semester of the junior year.

First Year

First Term

Chem 105 [P] (GER) or 1151 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 171 [N] (GER) 4

Second Term

Biol 106 [B] (GER) 4
Chem 106 [P] (GER) or Chem 1161 4
GenEd 111 [A] (GER) 3
Math 172 4

Second Year

First Term

Chem 105 [P] (GER) or 1151 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 171 [N] (GER) 4

Second Term

Biol 106 [B] (GER) 4
Chem 106 [P] (GER) or 1161 4
GenEd 111 [A] (GER) 3
Math 172 4

Third Term

First Term

Chem 220 2
Chem 346 / 348 4
Chem 347 2
Phys 202 [P] (GER) 4
Social Sciences [S,K] (GER) 3
Complete Writing Portfolio 1

Second Term

Arts & Humanities [H,G], Intercultural Studies [I,G,K] (GER) 6
Chem 332 3
Chem 333 1
Chem 425 2
Chem 499 1
Environmental Electives2 3

Fourth Year

First Term

Chem 489 3
Chem 495 1
Environmental Electives2 8
Tier III [T] Course (GER) 3

Second Term

Chem 499 2
Chem 482 2
Chem 499 2
Engl 301 [W] or 402 [W] (GER) 3

CHEMISTRY - GENERAL OPTION

(120 HOURS)

The requirements for all chemistry options are the same through the first semester of the junior year.

First Year

First Term

Chem 105 [P] (GER) or 1151 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 171 [N] (GER) 4

Second Term

Biol 106 [B] (GER) 4
Chem 106 [P] (GER) or Chem 1161 4
GenEd 111 [A] (GER) 3
Math 172 4

Second Year

First Term

Chem 220 2
Chem 346 / 348 4
Chem 347 2
Phys 202 [P] (GER) 4
Social Sciences [S,K] (GER) 3
Complete Writing Portfolio 1

Second Term

Chem 220 2
Chem 346 / 348 4
Chem 347 2
Phys 202 [P] (GER) 4
Social Sciences [S,K] (GER) 3
Complete Writing Portfolio 1

Third Term

First Term

Chem 222 2
Chem 330 1
Chem 331 3
Chem 398 1
Intercultural Studies [I,G,K] (GER) 3
MBioS 303 4
Elective 3

Second Term

Arts & Humanities [H,G], Intercultural Studies [I,G,K] (GER) 6
Chem 332 3
Chem 333 1
Chem 425 2
Chem 499 1
Elective 3

Fourth Year

First Term

Chem 410 [M] 3
Chem 495 1
Environmental Electives2 8
Tier III [T] Course (GER) 3

Second Term

Chem 410 [M] 3
Chem 495 1
Chem Electives2 3
Engl 301 [W] or 402 [W] (GER) 3
Tier III [T] Course (GER) 3
Elective 3

CHEMISTRY - MATERIALS OPTION

(122 HOURS)

The requirements for all chemistry options are the same through the first semester of the junior year.

1 Highly qualified students are encouraged to take Chem 115 and 116 in place of Chem 105 and 106. Students who have taken Chem 101 must take Chem 105 and 106, or 102 and 106.

2 Electives must be carefully chosen and may require prerequisites that are best taken in the first two years. Students are required to obtain advisor's authorization of elective credit in this program that may feature work in the areas of geology, microbiology, and engineering.

1 Highly qualified students are encouraged to take Chem 115 and 116 in place of Chem 105 and 106. Students who have taken Chem 101 must take Chem 105 and 106, or 102 and 106.

2 Electives include: Chem 415, 416, 421, 422, 424, 427, 430, 461, 480, 481, 514, 517, 518, and other 500-level courses; C E 341, 401, 415; Geol 102, 350, 403, 475, 480, 483; Soils 201, 301, 415, 416, 421; ES/RP 101, 150, 406, 445, Biol 372; Phil 370; BSysE 351; microbiology courses.
**First Year**

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<tr>
<th>Term</th>
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<tr>
<td>Chem 105 [P] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<td>Math 171 [N] (GER)</td>
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<td><strong>Second Term</strong></td>
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<td>Biol 106 [B] (GER)</td>
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<td>Math 172</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>Phys 202 [P] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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<td>Complete Writing Portfolio</td>
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**Third Year**

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<td>Chem 330</td>
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<td>Arts &amp; Humanities</td>
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<tr>
<td>Intercultural Studies [I,G,K], Social Sciences [S,K] (GER)</td>
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<td>MSE 301</td>
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**Fourth Year**

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<td>Arts &amp; Humanities</td>
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<td>Chem 334 [M]</td>
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<td>MSE 320</td>
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<td><strong>Second Term</strong></td>
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<td>Chem 410 [M]</td>
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<td>Elective¹</td>
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³ Highly qualified students are encouraged to take Chem 115 and 116 in place of Chem 105 and 106. Students who have taken Chem 105 must take Chem 105 and 106, or 102 and 106.

¹ Or other course involving computational techniques approved by the materials chemistry advisor.

¹¹ Elective must be approved by materials chemistry advisor.

**Minors**

**Minor in Chemistry**

The minor in chemistry requires at least 16 hours selected from the courses below. All courses used for the minor must be completed with a grade of C or better. At least half of the hours must be upper-division and at least half must be taken in residence at WSU.


Chem 499/495 may be used for up to 4 hours. MBioS 303 and other MBioS courses may be substituted with approval.

**Description of Courses**

**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//. 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 or c//. Stoichiometry, structure, gases, liquids, solids, solutions, thermodynamics, kinetics, equilibrium, volumetric, and gravimetric analysis. 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 116.

**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, electrochem, 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. 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**

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 273; Phys 202 each with a grade of C or better. 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: Math 220; Chem 331 each 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 for Chemists 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 2 (0-6)**

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 including computational methods.

**335 Physical Chemistry Laboratory for Chemical Engineers 1 (0-3)**

Prereq: Chem 331 with a grade of C or better or c//. Experiments selected to meet the needs of students majoring in chemical engineering.
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 Organic Chemistry I 4 (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 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 Qualitative Analysis Laboratory 2 (0-6) Prereq Chem 345 with a grade of C or better. Isolation, purification and identification of unknown compounds; for chemistry and biochemistry majors.

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 Advanced Organic Synthesis Laboratory 2 (0-6) Prereq Chem 345, 346 and 347 with grades of C or better.


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/UP or Chem 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.

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; Phys 202 each with a grade of C or better. Credit not granted for both Chem 422 and 522.

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.

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.

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 2 (0-6) 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 1 Prereq permission of instructor. Poster presentation of final research project.

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).

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.

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 Rec Chem 425. 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 Prereq Chem 331 with a grade of C or better. Graduate-level counterpart of Chem 421; additional requirements. Credit not granted for both Chem 421 and 521.

522 Radiochemistry Laboratory 1 (0-3) Prereq Chem 222, 331; Phys 202 each with a grade of C or better. Graduate-level counterpart of Chem 422; additional requirements. Credit not granted for both Chem 422 and 522.

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. Chem 332 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. Chem 332 Introduction to quantum mechanics; postulates of quantum mechanics; exact solutions and approximation methods.
534 Chemical Statistical Mechanics 3 Prereq Chem 531, 532. Statistical theory of thermodynamic variables and chemical equilibrium; calculation of equilibrium properties from spectral data; fluctuation about equilibrium; quantum statistics.


536 Quantum Chemistry 3 Prereq Chem 532 or equivalent. Chem 332 or 531 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.


543 Bioorganic Chemistry 3 Rec Chem 540. Chemistry of biological systems, medicinal chemistry, protein chemistry, enzyme mechanisms and inhibitors.

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 3 Structural interpretation of mass spectrometry and IR, UV-VIS and NMR spectrometry of small molecule organic compounds.


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.

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.

570 Chemistry of Polymers and Biopolymers 3 Prereq C or better grade in Chem 345, 346, or MSE 402. Physical properties (molecular weight, rheology, glass transition temperatures) and synthetic methods (free radical, ionic, condensation) of artificial and biopolymers.

581 Environmental Chemistry I 3 Prereq Chem 220 and 222 each with a grade of C or better. 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 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. 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.

Department of Civil and Environmental Engineering

www.ce.wsu.edu
Sloan 101
509-335-2576

Professor and Department Chair, D. I. McLean; Professors, D. A. Bender, C. S. Claiborn, W. F. Cofer, J. D. Dolan, M. A. Hossain, R. Y. Itami, B. K. Lamb, G. H. Mount, B. Malunahan, R. J. Watts, M. P. Wolcott, D. R. Yonge; Associate Professors, M. E. Barber, T. Johnson, D. G. Pollock, Jr., P. Qiao, A. Rodriguez-Marek; Assistant Professors, M. Beutel, M. ElGawady, M. Laboric, J. Rentz, T. VanReken, J. Zhang; Clinical Assistant Professors, S. Brown, C. Poor.

Civil engineers plan, design, construct, and operate the physical works and facilities essential to modern life. Civil engineers are responsible not only for creating the facilities required by a modern civilization, but also are committed to the conservation and preservation of the environment. Examples of these facilities include bridges, highways, buildings, airports, flood control structures, purification plants for drinking water, waste treatment and disposal facilities, offshore structures, tunnels, irrigation systems, space satellites, and launching facilities.

The program leading to the Bachelor of Science degree in Civil Engineering is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

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 C E 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 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.
Computer Requirement
All incoming Civil and Environmental Engineering students are required to purchase laptop computers. Please contact the department for details and specifications and/or visit http://www.ce.wsu.edu.

Transfer Students
Students who are planning to transfer to civil engineering at Washington State University from other institutions should coordinate their program with the department chairperson to establish an integrated program leading to the bachelor's degree. Inquiries concerning specific questions are welcome. A strong preparation in mathematics and physics is necessary prior to transfer to minimize the time required to complete the degree requirements. The requirements for direct entry into the Department of Civil and Environmental Engineering upon transfer are the same as listed above for certification. The Admissions Office will handle admissions applications from transfer students and the Department of Civil & Environmental Engineering will handle certification applications.

Preparation for Graduate Study
As preparation for academic work toward an advanced degree in civil engineering or environmental engineering, a student should have completed substantially the equivalent of the schedule of studies.

Schedules of Studies
Students must complete 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.

CIVIL ENGINEERING DEGREE PROGRAM (130 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 and a grade of C or better in all C E courses is required for graduation.

Students who will be completing at least 45 semester hours of course work at the end of the semester including C E 211, Math 171, 172, and Phys 201 or equivalents are eligible to apply for certification into the Department of Civil and Environmental Engineering. The number of students certified into the department depends upon the available resources and facilities. The best qualified students, based on cumulative GPA and grades in the prerequisite courses listed above, will be certified into the department until the carrying capacity is reached.

First Year

<table>
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<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>Engr 120</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>
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Second Term

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<tbody>
<tr>
<td>Biol 102 [B] or MBioS 101 [B] (GER)</td>
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<td>ComSt 102 [C] (GER)</td>
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Second Year

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<td>First Term</td>
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<tr>
<td>C E 211</td>
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<tr>
<td>EconS 101 [S] or 162 [S] (GER)</td>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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<tr>
<td>Math 220</td>
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<td>Math 273</td>
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<td>Phys 201 [P] (GER)</td>
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Second Term

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<tr>
<td>C E 215</td>
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<tr>
<td>Chem 106 [P], Geol 102 [P], or Phys 202 [P] (GER)</td>
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<td>E E 221</td>
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<td>M E 212</td>
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<td>M E 220</td>
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<tr>
<td>Math 315</td>
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<td>Complete Writing Portfolio</td>
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Third Year

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<td>C E 301</td>
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<td>C E 315</td>
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<tr>
<td>C E 317 [M]</td>
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<td>C E 330</td>
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<td>C E 341</td>
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Second Term

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<td>C E 322</td>
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<td>C E 351</td>
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<td>C E 463</td>
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<tr>
<td>E E 304 or M E 301</td>
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<tr>
<td>Engl 402 [W] (GER)</td>
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<td>Math 360</td>
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Fourth Year

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<tr>
<td>First Term</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>C E Electives$^1$</td>
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<tr>
<td>C E Laboratory$^1$</td>
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Second Term

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<td>C E 465 [M]</td>
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<td>C E 480 [M]</td>
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<tr>
<td>C E Elective$^1$</td>
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<tr>
<td>Tier III [T] Humanities or Social Science Course (GER)</td>
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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

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<td>First Term</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>C E 415</td>
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<td>C E 418 or 471</td>
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<td>C E Electives$^1$</td>
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Second Term

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<tr>
<td>C E 408</td>
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<td>C E 442</td>
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<td>C E 465 [M]</td>
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<td>C E 480 [M]</td>
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<td>C E Elective$^1$</td>
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<tr>
<td>Tier III [T] Humanities or Social Sciences Course (GER)</td>
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</table>

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.

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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>C E 430</td>
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<td>C E 433 or 425</td>
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<td>C E 473</td>
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<td>C E 474</td>
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Second Term

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<td>C E 400</td>
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<td>C E 434</td>
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<td>C E 435</td>
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<td>C E 465</td>
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<td>C E 480 [M]</td>
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<tr>
<td>Tier III [T] Humanities or Social Sciences Course (GER)</td>
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</table>

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

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<td>First Term</td>
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<td>C E 433</td>
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<td>C E 436</td>
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<td>C E Elective</td>
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### Description of Courses

#### Civil Engineering Courses

**CE 174 Introduction to Meteorology and the Atmospheric Environment** 3 Introduction to meteorology, the atmospheric processes; weather, air pollution, and environmental topics.

**CE 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).

**CE 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).

**CE 301 Introduction to Surveying with CAD** 4 (2-6) Prereq Math 171; certified major in C E or instructor permission. Basic principles of surveying data collection, analysis, and application; measuring distances and angles using total stations and global positioning systems; analysis of errors in measurements; application of surveying data to engineering design using AutoCAD and Civil 3D software.

**CE 315 Fluid Mechanics** 3 Prereq M E 212; Math 315. Fluid statics, laminar and turbulent flow, similitude, pipe flow, boundary layer, lift and drag and measurement techniques.

**CE 317 [M] Geotechnical Engineering I** 3 (2-3) Prereq C E 215, 315 or c//; certified major in C E or instructor permission. Structure, index properties, and classification of soils; compaction; effective stress; seepage; consolidation and shear strength.

**CE 322 Transportation Engineering** 3 Prereq Math 360 or c//; 301; certified major in C E or instructor permission. Transportation engineering: demand and performance functions; geometric design; capacity and control of transport modes.

**CE 330 Introduction to Structural Engineering** 3 Prereq C E 215; certified major in C E or instructor permission. Introduction to structural analysis and design; structural modeling; design philosophies; deflections; indeterminate analysis by the Force Method.

### Description of Courses

**Civil Engineering Courses**

**CE 414** 3
**CE 431** 3
**CE 434** 3
**CE 435** 3
**CE 465** 3
**CE 480 [M]** 1

**Second Term Hours**

**CE 414** 3
**CE 431** 3
**CE 434** 3
**CE 435** 3
**CE 465** 3
**CE 480 [M]** 1

**Tier III [T] Humanities or Social Sciences Course (GER)** 3

**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; certified major in C E or instructor permission. 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 Engl 402; senior standing; certified major in C E or instructor permission. Basic properties and mix designs of aggregates, asphalt, concrete and recycled materials; quality assurance, quality control.

**403 Environmental Geology** 3 Prereq Geol 101 or 102. Same as Geol 403.

**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. Credit not granted for both C E 408 and 508. Cooperative course taught jointly by WSU and UI (Ch E 575).

**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 either C E 431, 433, 434, 436, or c//, Engl 402; certified major in C E or instructor permission. Senior lab requiring integration of previous course work into the execution of design projects and the assessment of experimental test data; design codes and standards, load determination, load path, influence lines; applications in concrete, masonry, steel, and wood.

**415 Environmental Measurements** 3 (1-6) Prereq C E 341, Engl 402; certified major in C E or instructor permission. 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, Engl 402; certified major in C E or instructor permission. 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; certified major in C E or instructor permission. 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; Math 220; E E 221; certified major in C E or instructor permission. Stiffness methods for the analysis of trusses, beams, and frames; matrix models; and computer applications.

**431 Structural Steel Design** 3 Prereq C E 330; certified major in C E or instructor permission. 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** 3 Prereq C E 330; certified major in C E or instructor permission. 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** 3 Prereq C E 433; certified major in C E or instructor permission. 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** 3 Prereq C E 317; certified major in C E or instructor permission. 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** 3 (2-3) Prereq C E 330; certified major in C E or instructor permission. Engineering properties of wood materials; analysis and design of members, connections, trusses, shearwalls and structural diaphragms; durability and moisture effects on engineered wood products. Cooperative course taught by WSU, open to UI students (CE 443).

**442 Water and Wastewater Treatment Design** 3 Prereq C E 341; major in engineering or environmental science. Water and wastewater treatment processes and design.

**450 Hydraulic Engineering Design** 3 Prereq C E 351; certified major in C E or instructor permission. 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** 3 Prereq C E 351; certified major in C E or instructor permission. Steady, non-uniform flow; controls and transitions in fixed-bed channels. Credit not granted for both C E 451 and 551.
460 Advanced Hydrology 3 Prereq C 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 C E 460 and 560.

462 Engineering Law and Contracts 2 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 3 Engineering economy; annual cost, present worth, rate of return, and benefit-cost ratio in engineering decision making; basic contract law.

465 [M] Integrated Civil Engineering Design 3 (1-6) Prereq senior in C. E, Arch, B E, M E, or E; registered for FE/EIT exam. Civil engineering applications to planning and design; problem synthesis, data analysis, decision making and reporting; design of complete projects that include local and world wide problems through interdisciplinary teams.

473 Pavement Design 3 Prereq C E 215, 317; Econ 101 or 102, Math 360; c/f in C 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 3 (2-3) Prereq C 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 3 (2-3) Prereq BSysE 351, C E 317 or Geol 315; and Math 140 or 172 or c/f. Same as Geol 475.

480 [M] Ethics and Professionalism 1 Prereq senior status; certified major in C. E or instructor permission. 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 May be repeated for credit; cumulative maximum 6 hours. Contemporary topics in civil engineering.

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

501 Advanced Topics in Transportation Engineering V 2-4 May be repeated for credit; cumulative maximum 9 hours. Prereq C E 322; statistics course. Analysis, planning, design, and evaluation of transportation modes and systems. Cooperative course taught jointly by WSU and UI (CE 571).

507 Seepage and Earth Dams 3 Principles of earth-dam design, failures, considerations in construction; principles governing flow of water through soils. Cooperative course taught by UI (C E 563), open to WSU students.

508 Air Pollution Control Engineering 3 Prereq graduate standing. Graduate-level counterpart of C E 408; additional requirements.

509 Numerical Modeling of Geomaterials 3 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 3 (1-6) Graduate-level counterpart of C E 410; additional requirements. Credit not granted for both C E 410 and 510.

511 Advanced Topics in Geotechnical Engineering V 2-4 May be repeated for credit; cumulative maximum 9 hours. Prereq C E 317. Soil dynamics, theoretical soil mechanics, numerical methods in soil mechanics, and geohydrology, engineering geology, cold regions geoengineering. Cooperative course taught jointly by WSU and UI (CE 569).

512 Dynamics of Structures 3 Equations of motion, free vibration, damping mechanisms, harmonic, impulse, and seismic loading; shock and seismic response spectra, time and frequency domain analysis, modal analysis, structural dynamics in building codes. Cooperative course taught jointly by WSU and UI (CE 543).

514 Advanced Mechanics of Materials 3 Elastic stress-strain relations, shear center, unsymmetrical 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 3 (1-6) Prereq C E 341, Eng 402. Graduate-level counterpart of C E 415; additional requirements. Credit not granted for both C E 415 and 515.

517 Mechanics of Sediment Transport 3 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 3 or 4 Prereq graduate standing. Graduate-level counterpart of C E 418; additional requirements. Credit not granted for both C E 418 and 518. Cooperative course taught by WSU, open to UI students (CE 435).

519 Hazardous Waste Treatment 3 Prereq C E 518. Graduate-level counterpart of C E 419; additional requirements. Credit not granted for both C E 419 and 519.


524 Geotechnical Earthquake Engineering 3 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 3 Prereq C E 317. Graduate-level counterpart of C E 425; additional requirements. Credit not granted for both C E 425 and 525. Cooperative course taught by WSU, open to UI students (CE 567).

527 Advanced Soil Mechanics 3 Prereq C 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.

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 (CE 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).

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 (CE 536).

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 (C E 537).

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 water suspensions for contaminants using electrometric, spectrophotometric, and chromatographic techniques.

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 waste 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/soil 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 retention and transport of pollutants and their associated impacts.

549 Instrumentation and Measurements 3 (2-3) Prereq Math 172; Phys 102 or 202. Same as BSysE 541.

550 Open Channel Flow 3 Prereq C E 351. Graduate-level counterpart of C E 451; additional requirements. Credit not granted for both C E 451 and 551.

551 Advanced Topics in Hydraulic Engineering V 1-3 May be repeated for credit; cumulative maximum 9 hours. Prereq C E 315. Cavitation, air entrainment, hydraulic machinery, similitude, mixing in rivers and estuaries, hydraulic design. Cooperative course taught by WSU, open to UI students (Hydro 527).

552 Advanced Topics 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.

553 Advanced Hydrology 3 Prereq C E 351. Graduate-level counterpart of C E 460; additional requirements. Credit not granted for both C E 460 and 553.

554 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).

555 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.

556 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.

557 Dynamics of Groundwater Contamination 3 Prereq C E 475. Fundamentals of groundwater flow, pollutant transport, modeling data analysis, well siting/sampling and interaction of pollutants with sediments/soils.

558 Advanced Groundwater Hydrodynamics 3 Prereq Geol 475, Math 315. Modeling of subsurface flow in saturated, unsaturated, and multifluid systems; analytic and numerical solutions techniques; review of statistical geohydrologic methods.

559 Groundwater Geochemistry 2-4 Prereq Chem 331, Geol 475. Same as Geol 579.

560 Graduate Seminar 1 May be repeated for credit; cumulative maximum 2 hours. Lectures and reports on current developments in research and practice.

561 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).

562 Environmental Engineering Analysis 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 553).

563 Environmental Microbiology 2 (1-3) or 3 (1-6) Prereq C E 583. Study of natural and damaged water systems with emphasis on water quality protection and restoration.

564 Bioremediation of Hazardous Waste 3 Prereq C E 584. Applications of bioremediations to in situ subsurface treatment of hazardous waste; subsurface microbial degradation as related to microbial ecology.

565 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.

566 Atmospheric and Physical Processes 3 Processes of removal of pollutants from the atmosphere; radical chain reactions, particle formation, model calculations.

567 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.

568 Special Projects or Independent Study Variable credit S, F grading.
in contemporary society; 7) understand the ethical and civic responsibilities that accompany a life-long career in communication in a democratic society; 8) understand the professionalism required to be successful in a highly competitive industry, and 9) compete successfully in regional and national job markets.

General School Requirements

Each student will complete the requirements of one of the following programs 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 program, must take a minimum of 15 credit hours in the School.

Agricultural Communications

See Agricultural and Food Systems for complete information under the Agricultural Business and Technology Systems, Communication Option.

Schedules of Studies

Students must complete 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.

Certification Requirements

To certify a major in communication, a student must meet the following minimum requirements: (1) Complete Com 101, 245, 260, 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 be placed in rank order. The top students then are certified based on how many spots are available that semester. Students transferring into the School with 55 or more hours should complete the certification requirements within two semesters. All students should certify before earning 90 credit hours.

All degree programs require a minimum of 39 semester hours in communication. 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) effectively and efficiently collect and evaluate information utilizing traditional methods and new techniques and technology; 2) communicate (written and verbal) clearly and succinctly to varied audiences; 3) carefully observe, interpret and accurately portray events, information, and activities to a diverse society; 4) shape messages to reflect the differing demands and strengths of different and developing media; 5) consider the legal, social, and economic contexts in which media operate and evolve; 6) examine the role and effects of media...
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**Second Year**

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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)**

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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)**

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1 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
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<td>3 Degree Core any four of the following: Com 321, ComSt 302, 324, 334, 335, 385, 401, 421, 424, 485, 488</td>
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**COMMUNICATION - GENERAL OPTION (123 HOURS)**

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<td>Arts &amp; Humanities [H,G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER)</td>
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<td>Second Term</td>
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<td>Arts &amp; Humanities [H,G]</td>
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<td>Foreign Language, if necessary, or Elective 1</td>
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<td>Apply to Certify</td>
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<td>Complete Writing Portfolio</td>
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<td>Third Year</td>
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<td>Degree Core 1</td>
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<td>Foreign Language, if necessary, or Elective 2</td>
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<td>Upper-division Elective 1</td>
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<td>Second Term</td>
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<td>300-400-level Emphasis Electives 1</td>
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<td>Internship/Enrichment</td>
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<td>Degree Core 1</td>
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<td>Foreign Language, if necessary, or Elective 2</td>
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<td>Seminar [M] 2</td>
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<td>Tier III Course [T] (GER)</td>
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<td>18 credits in another department, 9 of which are 300-400-level.</td>
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<td>3 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.</td>
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<td>3 Degree Core any four of the following: Com 321, ComSt 302, 324, 334, 335, 385, 401, 421, 424, 485, 488</td>
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<td>4 Upper-division core: Bdcst 481, Com 409, 410, 415, 420, 440, 450, 460, 470, 471, 481, ComSt 324, 385, 401, 435, 485, 488, Jour 405, 425</td>
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<td>Any seminar numbered 475 in communication.</td>
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<td>18 credits in another department, 9 of which are 300-400-level.</td>
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<td>3 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.</td>
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<td>3 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, 424, Com 499(max of 3cr.)</td>
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</table>
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3

**Second Term**

- Hours
- Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
- Math Proficiency [N] (GER) 3 or 4
- Emphasis in Law 3

**Third Year**

- First Term Hours
- 300-400-level Electives 6
- Com 415 3
- Foreign Language, if necessary, or Emphasis in Law 3
  Jour 305 or Bdcst 350 3
- Second Term Hours
- 300-400-level Elective 3
- Biological Sciences [B] (GER) 4
- Emphasis Elective 3
- Jour 425 or Bdcst 365 3
- Emphasis in Law 3

**Fourth Year**

- First Term Hours
- 300-400-level Elective 3
- Emphasis in Law 3
- Jour 330 or Bdcst 465 3
- Preprofessional Capstone or Seminar [M] 3
- Upper-division Core 3
- Second Term Hours
- 300-400-level Elective 3
- Emphasis Elective 3
- Foreign Language, if necessary, or Elective 3
- Second Term Hours
- 300-400-level Emphasis Elective 3
- ComSt 435 3
- Upper-division Core 3

**Fourth Year**

- First Term Hours
- 300-400-level Emphasis Elective 3
- ComSt 475 [M] 3
- P R 312 3
- Upper-division Core 3
- Elective 3
- Second Term Hours
- Foreign Language, if necessary, or Elective 3
- Internship or Com Electives (for enrichment) 3
- Tier III Course [T] (GER) 3

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*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.

*Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.

*Students must choose a pre-professional focus of 18 credits in journalism or broadcasting. The journalism focus requires Jour 305, 330, 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.

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**COMMUNICATION - ORGANIZATIONAL OPTION (120 HOURS)**

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<th>First Year</th>
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<td>Com 101 [S] (GER) 3</td>
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<td>ComSt 102 [C] (GER) 3</td>
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<td>ComSt 235 3</td>
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<td>Emphasis Elective 3</td>
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<td>Foreign Language, if necessary, or Elective 3</td>
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<td>300-400-level Emphasis Elective 3</td>
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<td>ComSt 435 3</td>
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<td>Upper-division Core 3</td>
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*Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.


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**COMMUNICATION - PUBLIC RELATIONS OPTION (120 HOURS)**

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<th>First Year</th>
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<td>Com 101 [S] (GER) 3</td>
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<td>Engl 101 [W] (GER) 3</td>
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<td>ComSt 102 [C] (GER) 3</td>
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<td>Internship or Com Electives (for enrichment) 3</td>
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<td>Tier III Course [T] (GER) 3</td>
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*18 credits in another department, 9 of which are 300-400-level.

*Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.

Adver 382 Media Planning 3 Prereq Adver 380; certified major in communications. Development of effective advertising copy and creative strategies.

382 Media Planning 3 Prereq Adver 380; certified major in communications. Media planning strategies, theories, and practices.

475 Seminar in Advertising 3 May be repeated for credit; cumulative maximum 9 hours. Prereq certified major in communications.

480 Advertising Agency Operation and Campaigns 3 Prereq Adver 380; Adver 381; Adver 382; certified major in communications. Principles and functions of advertising management: campaign planning, execution, presentation, and evaluation.

483 Advertising Research 3 Prereq Adver 380; Adver 381; Adver 382; Mktg 360; certified major in communications. Professional research practices in advertising.
420 New Communication Technologies 3
Prereq certified major in communications; junior 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 certified major in communications; junior standing. Foundations and frameworks of media ethics; case studies in assessing media performance. Credit not granted for both Com 440 and 540.

460 Mass Media Criticism 3
Prereq certified major in communications; junior 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; certified major in communications. How news and entertainment media shape perceptions, expectations, and aspirations of members of portrayed groups and nonmembers.

470 Mass Communications Theories and Theory Construction 3
Prereq certified major in communications; 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 course; 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.

483 Special Topics: Study Abroad V 1-15 May be repeated for credit. Prereq by interview only. S, F grading.

495 Communication Professional Internship V 2 (0-6) to 12 (0-36) Prereq 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. Prereq by interview only. 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
Prereq graduate standing. Relationship of research to theory development; evaluation of current theory and research; planning and executing research within specified theoretical frameworks.

504 Instructional Practicum 1
Prereq graduate standing; by interview only. May be repeated for credit; cumulative maximum 4 hours. S, F grading.

509 Quantitative Research 3
Prereq graduate standing. 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
Prereq graduate standing. 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
Prereq graduate standing. Transnational cultural processes, role of communication in negotiating meanings across borders, identity and difference.

524 Criticism of Public Address 3
Prereq by interview only. Graduate-level counterpart of ComSt 424; additional requirements. Credit not granted for both ComSt 424 and Com 524.

525 Rhetorical Theory 3
Prereq graduate standing. Major theories from classical to contemporary; analysis of symbolic action in public, political discourse.

538 Seminar in Training and Development 3
May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Instructional aspects of training and consultation in organizational communication; team-building, presentational skills, conflict resolution, assessment leadership, group dynamics.

540 Media Ethics 3
Prereq by interview only. Graduate-level counterpart of Com 440; additional requirements. Credit not granted for both Com 440 and 540.

560 Mass Media Criticism 3
Prereq by interview only. Graduate-level counterpart of Com 460; additional requirements. Credit not granted for both Com 460 and 560.

570 Communication Theory 3
Prereq graduate standing. 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. Prereq graduate standing; by interview only. Contemporary, specialized, or technical topics in communication.

585 Interpersonal and Small Group Communication 3
Prereq graduate standing. Theory and research in interpersonal and small group communication.

591 Qualitative Research Methods 3
Prereq graduate standing. 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. Prereq graduate standing; by interview only. Special topics in rhetoric, communication, and public address.

600 Special Projects or Independent Study Variable credit. Prereq by interview only. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. Prereq by interview only. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. Prereq by interview only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. Prereq by interview only. S, F grading.

Communication Studies Courses

ComSt

102 [C] Public Speaking: Theory, Models, and Practice 3
An introduction to the theory and practice of speaking in formal settings.

185 Principles of Interpersonal Communication 3
Theory and practice of interpersonal communication; understanding and applying intrapersonal 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.

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. Prereq by interview only. S, F grading.

302 [C] Advanced Public Speaking 3
Prereq ComSt 102; certified major in communications. Advanced principles of public speaking and their practical implementation for effective communication.

324 [C,M] Argumentation 3
Prereq ComSt 102; certified major in communications. Theory, analysis and application of written and oral arguments in everyday use.

335 Organizational Communication 3
Prereq certified major in communications. Communication theory and organizational functions; communication influences on organizational behavior, managerial effectiveness, corporate culture, organizational power and politics.

351 Broadcast Performance/Interpretation 3
Prereq certified major in communications. Voice and dictation, interpretation of copy for broadcast.
Communication

401 Persuasion 3 Prereq certified major in communications. 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 course; 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 Prereq certified major in communications. Criticism of Public Address 3 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; certified major in communications. Advanced concepts, models and methods for in-depth analysis of contemporary organizations.

451 Readers Theatre for the Classroom 3 Prereq certified major in communications. Principles of literature selection, scriptwriting and staging of readers theatre for classroom.

475 Seminar in Communication Studies 3 Prereq certified major in communications; senior or graduate standing. May be repeated for credit; cumulative maximum 9 hours.

483 Special Topics: Study Abroad V 1-15 May be repeated for credit. Prereq certified major in communications. S, F grading.

488 Structure of Communication 3 Prereq Com 245; certified major in communications. Symbol systems and their interrelation in sequential organization in everyday communication.

495 Communication Studies Professional Internship V 2 (0-6) to 12 (0-36) Prereq 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.

Public Relations Courses

PR

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

312 Principles of Public Relations 3 Prereq Com 295; certified major in communications. Principles, theories, methods and objectives of public relations; public relations problems and practices.

313 [M] Public Relations Techniques and Media Usage 3 (2-3) Prereq Com 295; Jour 305; P R 312; certified major in communications. Practical applications of public relations theory and techniques with emphasis on writing and media use.

412 Public Relations Management and Campaign Design 3 Prereq Com 409; P R 312; Jour 306 or P R 313; certified major in communications. Application of public relations principles, management, persuasion theory and research methods to public relations issues.

475 Seminar in Journalism 3 Prereq certified major in communications. May be repeated for credit; cumulative maximum 9 hours.

481 Newspaper Management 3 Prereq Jour 305; certified major in communications. 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.

511 Public Relations Theory and Application 3 Theory and practice of public relations; its function in organizations and its role in society.

Department of Community and Rural Sociology

www.crs.wsu.edu

Wilson 23

509-335-8623

Professor and Chair, R. A. Jussaume, Jr.; Professors, D. A. Dillman, E. P. Fiske, K. Gray, W. H. Gray, A. R. Kirschn er, R. McDaniel; Associate Professors, M. Ostroom, D. Sonnenfeld; Assistant Professors, J. Goldberger, J. Garcia.

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 human quality of life, the relationship between communities and their natural resource base, and how community conflicts may be resolved successfully. The courses and the minor are intended to help prepare students for effectively living in communities and for working to influence sustainable community development and change.

Minors

Minor in Community Studies

The department offers a minor in community studies. The minor requires 18 hours, of which must come from CRS 334, 335, 336, 391 (on approval); 3 hours from Anth/Soc 418, HD 410, or CRS 423, 431, 435, 441, 491 or 499 (on approval). The remaining 12 hours may come from any of the above courses or from: Arch 202; Econ 355; ES/EP 335, 486; HD 205; NATRS 312, 438; Pol S 316, 416; Soc 301, 331, 332, 424. Please contact the department at 509-335-8623 or rajussaume@wsu.edu for more information.

Description of Courses

Community and Rural Sociology Courses

CRS

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

334 [S] Principles of Community Development 3 Prereq 3 credits S or K GER; 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 Prereq 3 credits S or K GER; sophomore standing. Examines interdependencies between farming/ranching, the natural environment and human communities including perspectives on sustainable agriculture.

391 Special Topics V 1-3 May be repeated for credit; cumulative maximum 3 hours. Prereq 3 credits S or K GER; sophomore standing. Topics in rural sociology or community studies.

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 6 credits S or K GER; sophomore standing. 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 [T,DJ] 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 6 credits S or K GER; junior standing. 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.

441 Local Impacts of Global Commodity Systems 3 Prereq 6 credits S or K GER; junior standing. 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 May be repeated for credit; cumulative maximum 3 hours. Prereq 6 credits S or K GER. Advanced topics in rural sociology or community studies.

499 Special Problems V 1-3 May be repeated for credit. S, F grading.

523 Fundamentals of Participatory Research 3 Prereq graduate standing. Graduate-level counterpart of CRS 423; additional requirements. Credit not granted for both CRS 423 and 523.

535 Resolving Environmental Conflicts 4 (3-3) Prereq graduate standing. 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. Graduate-level counterpart of CRS 441; additional requirements. Credit not granted for both CRS 441 and 541.

591 Graduate Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Advanced topics in rural sociology or community studies.

600 Special Projects/Independent Study Variable credit. S, F grading.

Department of Comparative Ethnic Studies
libarts.wsu.edu/ces
Wilson Hall 111
509-335-2605

Interim Chair and Associate Professor, C. R. King; Professor, Y. Flores Niemann; Associate Professors, J. Alamillo, R. Ong; Assistant Professors, K. Christen, L. Guerrero, D. Leonard, C. Lugo-Lugo, J. Streamas; Associate Professor Emeriti, T. Anderson, W. Willard.

Vision Statement

Comparative Ethnic Studies (CES) participants challenge the unequal distribution of power and privilege within and between ethnic and racial groups in the United States and around the world. CES provides the knowledge and the tools to realize social justice.

Mission Statement

The Department of Comparative Ethnic Studies (CES) offers a multidisciplinary, comparative, and, ultimately, transformative approach to the study of the psycho-social, cultural, political, historical, 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 fabric of our historical and contemporary world. While preparing 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. A major in CES prepares students to apply their education in any number of occupations including the areas of business, service, education, 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. It is responsible for providing the critical understanding of racialized communities. CES fosters an in-depth understanding of the complexities of the United States cultures and its intersections with global perspectives, while examining social justice concerns and movements. The teaching, research, and service components of CES examine the scholarly aspects of social justice, with an eye toward sophisticated awareness, comprehension, communication, activism, and transformation. The Department of CES facilitates students’ and the larger campus community’s understanding of today’s racial problems and to serve as a consultant for 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. Understand and articulate its historical development, key concepts, theories, methods, central debates, problems, and possibilities in an increasingly global context.

2. Critique Eurocentricism and understand prevailing Eurocentric formulations on race and ethnicity as they have contributed to social conflict, economic issues, and political inequalities.

3. Advocate for social justice for Communities of Color in the Pacific Northwest, especially, with respect to tribal nations and recent immigrants. Show an understanding of the regional articulations of race, gender, sexuality, class, and ability.

4. Critically and responsibly engage in their civic responsibility as global citizens with an enhanced appreciation of the processes and consequences of colonization, empire, and of nationalism in the US and its consequences to other groups across the globe.

5. Reflect on their experiences in a complex, unequal, and often contradictory world, while understanding and articulating their privileges and the implications of their race/ethnicity and socioeconomic status.

6. Think critically about the social constructions of race over time, having a broad understanding about the relationship between race and institutional structures; individual and collective identities; ideologies and images; individual and institutional/structural racism; and issues of power, appropriation, and essentialism.

7. Appreciate the histories, implications, and possibilities of marginalized and racialized people.

8. Demonstrate knowledge of major developments in ethnic formations and relations as they shape U.S. culture.

9. Be literate about popular culture, demonstrating the ability to decode racial meanings of media texts, films, television, music, sports and other forms utilized for the deployment of race.

10. Engage the world around them critically, defining and challenging normative views and values, especially with respect to whiteness, maleness, and heterosexuality as normative systems.

11. Effect and understand the processes of resistance and social change; conceptualize and articulate the history and processes of resistance to systems of oppression; challenge the paradigmatic assumptions of progress; and understand the connection between social change and struggle.
12. Apply curricular knowledge by serving in internships, which demonstrate 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, foster stronger relations with the community at large, and enhance our desire in breaking down barriers between the campus and community. CES launched an internship program in fall 2004. This program allows students to 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 the application of their skills outside the university and the critical engagement of their civic responsibility.

2. CES Film Series
   Pending available funding, the CES 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
   Pending available funding, the CES Speaker Series brings internationally recognized individuals to WSU. It promotes the voices and perspectives of academics and artists from marginalized and racialized groups. At the same time, it affords students 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 mentorship for Chicana/o and Latina/o graduate students. These students compose one of the most underrepresented groups in academia. By providing 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 also serves to educate the WSU community about the work of our graduate students.

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 engage in advisor 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 Website
   The CES Website is a source of information about the department courses, faculty, and activities/events. It is also an important resource for issues/concerns and current topics related to the CES program. It provides numerous links to informative Websites and databases.

**Schedules of Studies**

**Students must complete 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**

**SCHEDULED STUDIES**

**120 HOURS**

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>
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<tr>
<td>Eng 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Science Elective</td>
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<tr>
<td>Tier I Science [Q]</td>
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**Second Term**

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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>GenEd 111 [A] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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**Second Year**

<table>
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<tbody>
<tr>
<td>CES 301</td>
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<tr>
<td>CES Cluster I</td>
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<tr>
<td>CES Cluster II</td>
<td>3</td>
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<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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**Second Term**

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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>CES Cluster I or II</td>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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<td>Elective</td>
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<td>Complete Writing Portfolio</td>
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**Third Year**

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</tr>
<tr>
<td>CES 491</td>
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<tr>
<td>CES Cluster I or II</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Writing In The Major Elective [M]</td>
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**Second Term**

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<td>Electives</td>
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**Fourth Year**

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<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>CES 498</td>
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<tr>
<td>Electives</td>
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**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.

203 [S] Introduction to Critical Psychology 3 Prereq: Psych 105 or 198. Methods and traditions of critical psychology with origins in liberation and community psychology; emphasis on critical analysis of racism and oppression.

204 [S] Critical Studies in Whiteness 3 Political and cultural practices that define whiteness through history, popular culture and everyday life.

211 [K] Asian Pacific American History 3 Historical experience of Asian/Pacific Americans since the 19th century.
220 [H,D] Introduction to Multicultural Literature 3 Survey of multicultural literature including European American, African American, Asian American, Chicana/o, and Native American authors.

222 Race in Sport Films 3 (2-2) Examination of racial politics through critical discussions of sport film.


244 Critical Globalizations 3 Critical examination of the historical trajectory and contemporary practices, institutions and policies that make up “globalization”.

254 [S,D] Comparative Latino/a Cultures 3 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.

255 [S,D] Chicana/o History 3 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.

260 [S,D] Race and Racism in US Popular Culture 3 Examines images, ideologies, and identities; introduces key concepts and methods; focuses on race, gender, sexuality and class.


300 [S,M] Intersections of Race, Class, Gender and Sexuality 3 Prereq CES 101, Soc 101, or W St 200. Same as W St 300.


302 [S,D] Social Psychology of Prejudice 3 Causes and nature of prejudice from social, psychological, and cultural theoretical perspectives.

303 [M] Research Methods in Ethnic Studies 3 Quantitative, qualitative, and/or literary research methods and strategies particular to the study of race, ethnicity, and culture.


305 [S,D] Contemporary Masculinity and Men’s Issues 3 Same as W St 302.

308 [M] Cultural Politics of Sport 3 A critical examination of US sports through class, race, gender, sexuality, nationalism and criminality.

309 Queer Identities in Contemporary Cultures 3 Same as W St 369.

313 [G] Asian Pacific American Literature 3 Asian American fiction, drama, poetry, and other arts, 1900 to present; impact of Asian/Pacific American culture and experience upon these works.

314 [M] Topics in Asian Pacific American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Trends, themes, major writers.


316 [G] South Asian Film 3 (2-3) Same as Engl 316.

325 [I] Traveling Cultures: Tourism in Global Perspective 3 Social relations and cultural practices central to tourism with examples from around the world.

331 [G] African American Literature 3 Introduction to major issues and major works in the African American literary tradition.

332 [M] Topics in African American Literature 3 Same as Engl 322.

335 [S] Black Freedom Struggle 3 Historic exploration of black resistance focusing on nationwide movement that developed following World War II.


337 [S,D] Black Social Psychology 3 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.

338 [H,D] Cinematic Images of Blackness 3 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.

339 [I] Black Politics 3 Same as Pol S 324.

340 Empire and Race 3 Prereq CES 244 or 301. Analysis of historical and contemporary manifestations of Empire and their effect on race and the international racialized division of labor.


354 Topics in Latina/o Literature 3 Prereq CES 101. Trends, themes and major writers in Latina/o literature.

355 [S] Chicanas/os and the Educational System 3 Investigation of the educational experiences, both current and historical, of Chicanas/os in the United States.

356 Bilingual/Bicultural Women 3 Philosophical, legal, cultural, linguistic, and curricular aspects of bilingual education.

357 Chicana/os and Popular Culture 3 Representation of Chicanos in US popular culture.


359 Chicana/o and Latina/o Politics 3 Character, role, and goals of Chicano/Latino politics; contemporary Chicano/Latino issues.

372 [S,D] Native American Women in Traditional and Contemporary Societies 3 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.

373 [G,M] Native American Literature 3 Native American literature, by and about the original inhabitants, image and counter-image, with emphasis on the 20th century.

375 [K] North American Indian History, Precontact to Present 3 Same as Hist 308.

376 [K] America Before Columbus 3 Prereq Anth 101 or GenEd 110. Same as Anth 331.

377 [K] Native Peoples of North America 3 Same as Anth 320.

378 [S,D] Contemporary Native Peoples of the Americas 3 Prereq Anth 101 or CES 171. Same as Anth 327.

379 [H,D] Native Americans in Film 3 Critical examination of films and videos featuring American Indians; traces the history of the Indian as subject of films and as filmmaker.

380 [S,D] Immigration and Citizenship in the Global Economy 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.

401 Seminar in Culture and Power 3 Complex power relations that develop among competing local, regional, national, and global culture(s).

403 [T,D] Cultural Issues in Psychology 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.

404 [T,D] Stereotypes and The Media 3 Prereq completion of one Tier I and three Tier II courses. Same as Com 471.

405 [T] Cultural Criticism and Theory 3 Prereq completion of one Tier I and three Tier II courses. Major critiques and theories of colonialist and imperialist formations of culture.
La Chicana in US Society

Racism and Anti-Racism in Global Nation, Ethnicity, and Modernity

Social Justice and American Workers Across North America

Intercultural Processes in Global Asian Pacific Americans and Popular Culture

Introduction to Critical Race Comparative Ethnic Studies

of a marginalized group - Chicanas. gender and sexual orientation in the experience three Tier II courses. Intersections of race, class, and gender in the lives of Asian Pacific American women.

Asian Pacific Americans and Popular Culture 3 Prereq CES 101 or 111. Examines the racial politics that have developed around the representation of Asian Pacific Americans in US popular culture.

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.

Asian 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.

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.

Nation, Ethnicity, and Modernity 3 Prereq CES 244 or 301. Relationship between modernity and nation-making in relation to dominant constructions of race and ethnicity and histories of colonialism.

White Power Movements and Ideologies 3 Prereq completion of one Tier I and three Tier II courses. Critical assessment of white supremacist and nationalist movements and ideologies around the globe.

Racism and Anti-Racism in Global Context 3 Prereq CES 101 or 201. Theory and practice of anti-racism; history and scope; strategies to transform racist systems.

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 Chicanas/os from an interdisciplinary perspective.

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.

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 Chicano/Latino populations.

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.

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.

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.

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.

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

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

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

Theories of Racism and Ethnic Conflicts 3 Prereq CES 101. Provides general knowledge of the history of racist ideas and the social, political, and cultural contexts underlying ethnic conflicts.

Advanced Topics in Ethnic Studies 3 May be repeated for credit; cumulative maximum 9 hours; total hours allowed for CES 492, 493, 494 is 9 hours. Prereq course in CES. A reading and discussion course that explores special topics in ethnic studies.

Advanced Topics in Ethnic Studies 3 May be repeated for credit; cumulative maximum 9 hours; total hours allowed for CES 492, 493, 494 is 9 hours. Prereq course in CES. A reading and discussion course that explores special topics in ethnic studies.

Advanced Topics in Ethnic Studies 3 May be repeated for credit; cumulative maximum 9 hours; total hours allowed for CES 492, 493, 494 is 9 hours. Prereq course in CES. A reading and discussion course that explores special topics in ethnic studies.

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.

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.

Directed Independent Study V 1-4 May be repeated for credit, S, F grading.
**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 above schedule of studies.

**Schedules of Studies**

Students must complete 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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**CRIMINAL JUSTICE DEGREE PROGRAM (120 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**

**First Term**

- Arts & Humanities [H,G] (GER) 3
- Crm J 101 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Social Sciences [S,K] (GER) 3

**Second Term**

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Communication [C,W] (GER) 3
- Crm J 201 3
- GenEd 111 [A] (GER) 3
- Science Elective (GER) 4

**Second Year**

**First Term**

- Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
- Biological Sciences [B] (GER) 4
- Crm J 330 3
- Intercultural Studies [I,G,K] (GER) 3
- Math Proficiency [N] (GER) 3

**Second Term**

- Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3

**Third Year**

**First Term**

- First Term Hours
- Crm J 420 3
- Crm J Electives 3
- Crm J Institution course 3
- Pol S collateral course 3
- Quantitative methods course 3

**Second Term**

- First Term Hours
- Crm J Electives 6
- Pol S collateral course 3

**Fourth Year**

**First Term**

- First Term Hours
- CLA Elective 3
- Crm J 450 [M] 3
- Crm J Elective 3
- Foreign Language, if necessary, or Electives 4

**Second Term**

- First Term Hours
- Foreign Language, if necessary, or Electives 4
- Tier III Course [T] (GER) 3
- Electives 7

**Minor in 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**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Crm J 101 Introduction to the Administration of Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>Crm J 201 The Nature of Crime</td>
<td>3</td>
</tr>
<tr>
<td>Crm J 330 Crime Control Policies</td>
<td>3</td>
</tr>
<tr>
<td>Crm J 420 Criminal Procedure</td>
<td>3</td>
</tr>
<tr>
<td>Crm J 450 [M] Issues in the Administration of Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>Crm J 470 [M] Comparative Criminal Justice</td>
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</table>

**Minors**

**Minor in 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.

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<td>3</td>
</tr>
<tr>
<td>Crm J 450 [M] Issues in the Administration of Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>Crm J 470 [M] Comparative Criminal Justice</td>
<td>3</td>
</tr>
</tbody>
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**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.

**330 Crime Control Policies**

3 Prereq Crm J 101. Analysis of ideologies, assumptions, and performance of crime control policies. Cooperative course taught by WSU, open to UI students (CJ 330).

**365 Juvenile Justice and Corrections**


**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 (2-2) Prereq Crm J 101 or Pol S 101. Mass media as both reflector and shaper of public attitudes and opinions about crime, criminals, law, order, and justice; using films.

**388 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 May be repeated for credit; cumulative maximum 6 hours. Prereq Crm J 101. Selected topics in criminal justice. Cooperative course taught by WSU, open to UI students (CJ 401).

**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.

**405 [M] Comparative Criminal Justice Systems**

3 Prereq Crm J 101. Comparative study of criminal justice systems in the US and selected foreign countries. Cooperative course taught by WSU, open to UI students (CJ 405).

**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.


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

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

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

490 Criminal Justice Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. Prereq Crm J 101. On/off-campus internship in criminal justice institutions (police, FBI, jails, law firms, etc.); written assignments and readings will be required. S, F grading.

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

504 Quantitative Methods in Political Science and Criminal Justice 3 Prereq introductory statistics course. Same as Pol S 504.

505 Comparative Criminal Justice 3 Comparative study of crime laws and criminal justice systems in selected foreign countries. Cooperative course taught by WSU, open to UI students (CJ 505).

530 Criminal Justice: Process and Institutions 3 Processes of criminal justice in the context of the social, political, and economic environments. Cooperative course taught by WSU, open to UI students (CJ 530).

539 The Political Science Profession 1 Same as Pol S 539. S, F grading.

540 Seminar in Research Evaluation 3 Interrelationship of ideology, data, policy development, and policy implementation in public policy analysis. Cooperative course taught by WSU, open to UI students (CJ 540).

541 Seminar in Corrections 3 Preq Stat course. Current issues related to the control, management, and sanctioning of criminal offenders. Cooperative course taught by WSU, open to UI students (CJ 541).

555 Seminar in the Nature of Crime 3 Preq graduate standing. Individual, situational and ecological correlates of criminal behavior; data sources and empirical research.

560 Prosecution and Adjudication 3 Preq graduate standing. The function of courts and the behavior of prosecutors, defense attorneys and judges within the criminal justice system.

570 The Police and Society 3 Community and selected social institutional factors as related to their influence on police systems. Cooperative course taught by WSU, open to UI students (CJ 570).

572 Seminar in Comparative Policing 3 Study of the history, organization, and policies of policing systems in selected countries and of transnational policing. Cooperative course taught by WSU, open to UI students (CJ 572).

580 Women and the Criminal Justice System 3 Criminal justice system's treatment of women offenders, victims, and professionals.

590 Criminal Justice Field Practicum V 1-6 By interview only. Off-campus professional internship in selected criminal justice agencies. S, F grading.

591 Seminar in the Administration of Criminal Justice 3 May be repeated for credit; cumulative maximum 6 hours. Current issues, problems, and critical concerns within the field of administration of criminal justice. Cooperative course taught by WSU, open to UI students (CJ 591).

592 Proseminar in Administration, Justice, and Applied Policy Studies 3 Same as Pol S 542.

597 Graduate Internship V 2-12 V 2-12 May be repeated for credit; cumulative maximum 12 hours. On/off-campus internship in criminal justice institutions (police, FBI, law firms, etc.) nonprofit or public organizations; written assignments will be required. S, F grading.

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.

Department of Crop and Soil Sciences

www.css.wsu.edu

Johnson Hall 201
509-335-3475


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. The Department is also involved with the College of Agricultural, Human and Natural Resource Sciences interdisciplin ary Agricultural and Food Systems Degree Program. The Agricultural and Food Systems (AFS) program is an exciting, college-wide, interdisciplinary program that offers a Bachelor of Science degree with five majors and a Master of Science degree. Majors available through AFS include Agricultural Business and Technology Systems, Agricultural Education, Organic Agriculture Systems, Pest Management Systems, and Plant and Soil Systems. More information regarding AFS is available under the Agricultural and Food Systems catalog section.

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 Washington State Department of Ecology, Department of Agriculture and Department of Natural Resources; as well as in food processing companies, insurance agencies, and commercial concerns dealing with farm products, fertilizers and agricultural chemicals and seeds. Opportunities also exist for further study and employment in international agriculture such as through the US Agency for International Development (USAID).
the option, Chem 345.

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 a 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. 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 for 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 a Doctor of Philosophy degree. Normally, preparation for an advanced degree in soil science includes course work outlined under one of the above options plus completion of Math 171, Phys 102 or 202, and, if not specified in the option, Chem 345.

AGRICULTURAL AND FOOD SYSTEMS PROGRAM

The Agricultural and Food Systems Degree Program is an exciting, college-wide, interdisciplinary program that offers a Bachelor of Science degree with five majors including Agricultural Business and Technology Systems, Agricultural Education, Organic Agriculture Systems, Pest Management Systems, and Plant and Soil Systems. The program also offers a Master of Science in Agriculture.

In each major, emphasis is placed on gaining a solid background in the agricultural sciences, including learning to work with and in the complexity of agriculture and food systems. All students take a core set of classes in order to develop a broad interdisciplinary background while also studying specific subjects that prepare graduates for their chosen fields. An internship related to the students focus area is included in these requirements.

For specific information regarding this interdisciplinary program, please see the Agricultural and Food Systems section of the WSU General Catalog.

Schedules of Studies

Students must complete 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 (120 HOURS)

For students who wish to engage in farming, corporate farm management, production specialist positions, consulting, international careers, and agribusiness.

First Year

First Term Hours
Chem 101 [P](GER) 4
CropS 201 4
EconS 101 [S], or EconS 102 [S] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
SoilS 201 [B] (GER) 3

Second Term Hours
Arts & Humanities [H,G] (GER) 3
Biol 106 [B] (GER) 4
Chem 102 [P](GER) 4
ComSt 102 [C] or H D 205 [C] (GER) 3

Second Year

First Term Hours
Biol 107 [B] or 120 [B] (GER) 4
CropS 201 4
EconS 101 [S], or EconS 102 [S] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Intercultural Studies [I,G,K] (GER) 3
Stat 212 [N] (GER) 4
Complete Writing Portfolio

Third Year

First Term Hours
Biol 320 4
CropS 360 3
CropS 403 3
EconS Elective 2 or 3
EconS, Mgt, or Mktg sequence1 3
Second Term Hours
Crop Production Elective 3
EconS, Mgt, or Mktg sequence1 3
SoilS 441 3
SoilS 442 2
Elective 3

Fourth Year

First Term Hours
Crop Production Elective 3
CropS 305 3
CropS 495, 497, 498, or 499 1-3
EconS Elective 2 or 3
PL P 429 3
Tier III Course [T] (GER) 3
Second Term Hours
Acctg or Mgt Elective 3
CropS 411 [M] 3
CropS 412 1
CropS 444 2
CropS 445 [M] 3
EconS Elective 2 or 3
Elective 3

1 First in sequence.

CROP SCIENCE - CROPPING SYSTEMS OPTION (120 HOURS)

For students who wish to emphasize pest control and environmental quality in cropping systems.

First Year

First Term Hours
Chem 101 [P](GER) 4
CropS 101 3
Engl 101 [W] (GER) 3
Math 107 4

Second Term Hours
Arts & Humanities [H,G] (GER) 3
Biol 106 [B] (GER) 4
Chem 102 [P](GER) 4
ComSt 102 [C] or H D 205 [C] (GER) 3

Second Year

First Term Hours
Biol 107 [B] or 120 [B] (GER) 4
CropS 201 4
EconS 101 [S], or EconS 102 [S] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
SoilS 201 [B] (GER) 3
Acctg or Mgt Elective 3
Social Sciences [S,K] (GER) 3

Second Term Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
CropS 201 3
EconS 101 [S], or EconS 102 [S] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
SoilS 201 [B] (GER) 3

Second Year

First Term Hours
Biol 107 [B] or 120 [B] (GER) 4
GenEd 110 [A] or 111 [A] (GER) 3
Stat 212 [N] (GER) 4
Complete Writing Portfolio

Crop and Soil Sciences
## Third Year

<table>
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<tr>
<th>Term</th>
<th>Course Code</th>
<th>Hours</th>
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<td><strong>First Term</strong></td>
<td>CropS 305</td>
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<tr>
<td></td>
<td>CropS 306</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CropS 403</td>
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<td>CropS 410</td>
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<tr>
<td></td>
<td>Elective</td>
<td>3</td>
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<tr>
<td><strong>Second Term</strong></td>
<td>Biol 320</td>
<td>4</td>
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<tr>
<td></td>
<td>CropS 444</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CropS 445 [M]</td>
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<td></td>
<td>Entom 340</td>
<td>3</td>
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<tr>
<td></td>
<td>SoilS 441</td>
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## Fourth Year

<table>
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<tr>
<th>Term</th>
<th>Course Code</th>
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<tbody>
<tr>
<td><strong>First Term</strong></td>
<td>CropS 495, 497, 498, or 499</td>
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<td>PI P 429</td>
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<td>Production Elective</td>
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<td></td>
<td>Tier III Course [T] (GER)</td>
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<td></td>
<td>Elective</td>
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<tr>
<td><strong>Second Term</strong></td>
<td>300-400-level EconS Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CropS 411</td>
<td>1</td>
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<tr>
<td></td>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IPM 462</td>
<td>3</td>
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<tr>
<td></td>
<td>SoilS 442</td>
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<td></td>
<td>Elective</td>
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## CROP SCIENCE - SCIENCE/ BIOTECHNOLOGY OPTION (120 HOURS)

<table>
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<tr>
<th>Term</th>
<th>Course Code</th>
<th>Hours</th>
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<tr>
<td><strong>First Year</strong></td>
<td>Biol 106 [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chem 101 [P] or 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CropS 101</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CropS 104</td>
<td>1</td>
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<tr>
<td></td>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Math 107</td>
<td>4</td>
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<tr>
<td><strong>Second Year</strong></td>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Chem 102 [P] (GER)</td>
<td>4</td>
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<tr>
<td></td>
<td>ComSt 102 [C] or H D 205 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Math 107</td>
<td>4</td>
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</table>

## CROP SCIENCE - TURF MANAGEMENT OPTION (120 HOURS)

For students who wish to specialize in golf course supervision, grounds maintenance, and similar recreation positions involving turfgrass management techniques and personnel relations.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>First Term</strong></td>
<td>Chem 101 <a href="GER">P</a></td>
<td>4</td>
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<td></td>
<td>CropS 201</td>
<td>3</td>
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<tr>
<td></td>
<td>CropS 444</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Math 107</td>
<td>4</td>
</tr>
<tr>
<td><strong>Second Term</strong></td>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Chem 102 <a href="GER">P</a></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ComSt 102 [C] or H D 205 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
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</tbody>
</table>

## Soil Science - Environmental Option (120 Hours)

This option emphasizes the basic principles of soils as they relate to the quality of the environment.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>First Year</strong></td>
<td>Biol 106 [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CropS 101</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CropS 104</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Math 107</td>
<td>4</td>
</tr>
<tr>
<td><strong>Second Year</strong></td>
<td>Biol 106 [B] or Bot 120 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Chem 102 [P] or 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
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<tr>
<td></td>
<td>Math 140 [N], 171 [N], or Stat 212 [N] (GER)</td>
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## Third Year

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<th>Term</th>
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<th>Hours</th>
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<tbody>
<tr>
<td><strong>First Term</strong></td>
<td>Biol 322, 372, 409, or 410</td>
<td>4</td>
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<tr>
<td></td>
<td>Biol 320</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CropS 305</td>
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## Fourth Year

<table>
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<tr>
<th>Term</th>
<th>Course Code</th>
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<tbody>
<tr>
<td><strong>First Term</strong></td>
<td>Biol 320</td>
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</tr>
<tr>
<td></td>
<td>CropS 302 or Hort 231</td>
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<tr>
<td></td>
<td>CropS 318</td>
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<td></td>
<td>SoilS 441</td>
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<td></td>
<td>Electives</td>
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</table>

## SOIL SCIENCE - ENVIRONMENTAL OPTION (120 Hours)

This option emphasizes the basic principles of soils as they relate to the quality of the environment.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>First Year</strong></td>
<td>Bio 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Chem 101 [P] or 105 [P] (GER)</td>
<td>4</td>
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<tr>
<td></td>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td></td>
<td>Math 107?</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Term</strong></td>
<td>Biol 106 [B] or Bot 120 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Chem 102 [P] or 106 [P] (GER)</td>
<td>4</td>
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<td></td>
<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td></td>
<td>Math 140 [N], 171 [N], or Stat 212 [N] (GER)</td>
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## Third Year

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<th>Term</th>
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<th>Hours</th>
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<tbody>
<tr>
<td><strong>First Term</strong></td>
<td>Biol 372</td>
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<tr>
<td></td>
<td>SoilS 301 [M]</td>
<td>3</td>
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<td>SoilS 360</td>
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<td></td>
<td>SoilS 421 or 441</td>
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<td></td>
<td>SoilS 442</td>
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Fourth Year

<table>
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<th>First Term</th>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
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<td>Soils 413</td>
<td>3</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>Soils 495 or 498</td>
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<td>Stat 212 [N] or [Q] (GER) or 412</td>
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<td>Tier III Course [T] (GER)</td>
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First Year

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<th>Hours</th>
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<tbody>
<tr>
<td>Biol 106 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107?</td>
<td>3</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
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<tr>
<td>Biol 107 [B] or Bot 120 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 102 [P] or 106 [P] (GER)</td>
<td>3</td>
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<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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Second Year

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</thead>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>EconS 101 [S] (GER)</td>
<td>3</td>
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<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>Second Term</td>
<td>Hours</td>
</tr>
<tr>
<td>Chem 545</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Geol 102 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Third Year

<table>
<thead>
<tr>
<th>First Term</th>
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<tbody>
<tr>
<td>AgTM 315</td>
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<tr>
<td>Biol 320</td>
<td>4</td>
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<tr>
<td>CropS 305, Entom 305, or Pl P 429</td>
<td>3</td>
</tr>
<tr>
<td>Soils 301 [M]</td>
<td>3</td>
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<tr>
<td>Soils 360</td>
<td>3</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>EconS 350</td>
<td>3</td>
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<tr>
<td>Soils 421</td>
<td>3</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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<tr>
<th>First Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>CropS 305, Entom 305, or Pl P 429</td>
<td>3</td>
</tr>
<tr>
<td>Soils 374</td>
<td>3</td>
</tr>
</tbody>
</table>
Plant Breeding I 2 Prereq Crops/Hort 444 or MBioS 301. MBioS 301 Principles and practices of plant breeding.

Research Experience V 1-4 May be repeated for credit; cumulative maximum 12 hours. Planned and supervised undergraduate research experience.

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

Professional Internship V 1-6 May be repeated for credit; cumulative maximum 9 hours. Planned and supervised professional work experience. S, F grading.

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

Advanced Cropping Systems 3 Prereq Crops 201; Pl P 429 or c//; or graduate standing. 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).

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).

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).

Seminar 1 May be repeated for credit. Literature review; preparation and presentation of reports in crop science.

Research Proposal and Development 2 Develop research proposal and give oral presentation to demonstrate ability to employ strategy and procedures to address objectives. S, F grading.

Topics in Crop Science 1 or 2 May be repeated for credit. Concepts of plant breeding, seed physiology, and technology; crop physiology and management.

Biography of Weeds 3 Prereq Biol 320. Graduate-level counterpart of Crops 413; additional requirements. Credit not granted for both Crops 413 and 513.

Seminar in Molecular Plant Sciences 1 Same as MPS 515.

Plant Cytogenetic Techniques 3 (1-6) Prereq MBioS 301. Plant genes and chromosomes. Cooperative course taught by UI (PlSc 520), open to WSU students.

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).
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 (SoilS 345).

[1] World Agricultural Systems 3 Prereq two semesters physical or biological sciences. Same as CropS 360.

Introduction to ArcGIS 3 (1-6) Prereq one course in biology, geology, or soils. Introduction to geographic information systems applied to landscape data; geographic coordinate systems and projections, make maps and use geodatabases.

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.

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).

Agricultural Entrepreneurship 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.

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.

Seminar 1 Same as CropS 412.

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.

Agricultural 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).

Environmental Biophysics Laboratory 1 (0-3) Prereq Soils 414 or c/1. 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).

Environmental Soil Chemistry 3 Prereq two semesters of Chem; 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.

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.

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.

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).

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).


ArcGIS and Geospatial Analysis 4 (2-6) Prereq Biol 120, Geol 101 or Soils 201. Geographic information systems applied to analysis of landscape data; maps, geographic coordinate systems and projections, geodatabases.

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.

Composting 2 The composting industry, including biology, methods, benefits, management, regulations, and environmental concerns.

Research Experience V 1-4 May be repeated for credit; cumulative maximum 12 hours. Same as CropS 495.

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

Professional Internship V V 1-6 May be repeated for credit; cumulative maximum 9 hours. Planned and supervised professional work experience. S, F grading.

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

Seminar 1 May be repeated for credit. Presentation of research information.

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.

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.

Research Presentation Techniques 1 Preparation of visual aids and oral presentation of research findings. S, F grading.

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.

Research Proposal and Development 2 Same as CropS 511. S, F grading.

Soil Physics 3 (2-3) Prereq graduate standing. Characterization of soil properties including water content and potential and hydraulic conductivity; modeling water, solute transport, erosion contamination of groundwater. Credit not granted for both SoilS 413 and 513.

Environmental Biophysics 2 Prereq Math 107. Graduate-level counterpart of SoilS 414; additional requirements.

Environmental Soil Chemistry 3 Prereq two semesters of Chem; SoilS 201. 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).

Soil Mineralogy 2 (1-3) Prereq SoilS 421, 451. Distribution and significance of soil 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.

Soil Microbiology and Biochemistry 3 (2-3) Prereq MBioS 101 or 201; SoilS 201. Same as SoilS 431.

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).

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.
In completing this degree, students
- Acquire a historically grounded understanding of the role of digital technology as media for cultural transmission.
- Learn to develop persuasive, culturally appropriate content for digital environments.
- Develop a sophisticated understanding of hypermedia and multimedia rhetorics.
- Work individually and in teams to design, compose, and complete digital products.
- Gain insight into how digital environments transform the exchange of ideas and how information is used.
- Master the tools of electronic research and the skills of invention, analysis, synthesis, organization, and delivery.

The DTC major requires 39 credits composed of a 24-credit core, a concentration of 12 additional credits, and an internship of at least 3 credits.

The DTC core includes five courses that introduce multimedia rhetorics, research and information technology, the relationship between language and technology, art and technology, and digital diversity. The core also includes interdisciplinary choices in Anthropology, Computer Science, English, Fine Arts, and Sociology.

The 12-credit DTC concentration is designed to meet individual interests and strengths. Concentrations are available in Technology and Culture, Media Authoring, and Informatics.

**Schedules of Studies**

**Students must complete 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.**

**DIGITAL TECHNOLOGY AND CULTURE (120 HOURS)**

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td>3</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>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
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<tr>
<td>Science Elective (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>Second Term</td>
<td>3</td>
</tr>
<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>F A 102</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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**Second Year**

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<th>Course</th>
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<tbody>
<tr>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>DTC 355 [M]</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<td>Elective</td>
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<td>Second Term</td>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>DTC 356</td>
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<tr>
<td>DTC 375</td>
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**Third Year**

**First Term**

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<th>Course</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
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<tr>
<td>DTC Concentration Elective</td>
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<tr>
<td>DTC Core Option</td>
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<tr>
<td>F A 331</td>
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<td>Elective</td>
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**Second Term**

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<th>Course</th>
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<tbody>
<tr>
<td>DTC 475</td>
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<tr>
<td>DTC Concentration Elective</td>
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<tr>
<td>DTC Core Option</td>
<td>3</td>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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<td>Elective</td>
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**Fourth Year**

**First Term**

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<th>Course</th>
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<tbody>
<tr>
<td>DTC Concentration</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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**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Senior Seminar, Thesis, or Internship</td>
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</tr>
<tr>
<td>Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

1 Prerequisite to F A 331.
2 Consult with an advisor for a list of approved courses and prerequisites.

**Minors**

**Digital Technology and Culture Minor**

A student may certify in a DTC minor after the completion of 60 semester hours. A minimum of 18 semester hours of approved, upper-division is required for the minor from the following: DTC/Engl 355 and 375, F A 331 and three from Anth 350, AmSt/Engl/DTC 475, DTC/Engl 356, 478, Engl 301, 336, 402, 405, F A 332, 363, 434, Soc 373 or 430.

**Description of Courses**

**Digital Technology and Culture Courses**

**DTC**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>335 Digital Animation: Story, Narration and Production 3-2-3</td>
<td>3</td>
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</tbody>
</table>

**Digital Animation: Story, Narration and Production 3-2-3** D-3 digital animation for creative and professional presentations using Maya software, art skills, story-telling and team problem-solving techniques.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>336 [H] Composition and Design 3</td>
<td>3</td>
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</table>

**Social Skills** D-3-3 D-3 digital animation for creative and professional presentations using Maya software, art skills, story-telling and team problem-solving techniques.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>338 Special Topics in Digital Technology and Culture 3</td>
<td>3</td>
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</tbody>
</table>

Digital technology and culture is an interdisciplinary degree program that combines studies in language and culture, rhetoric, fine arts, cognition and learning, language and society, design and visual communication, and information science to prepare students for careers in a wide range of fields.
3 Writing for new computer-based media; multimedia authoring project; examination of new rhetorics of information technology.

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.

375 [H,M] Language, Texts and Technology
3 Prereq: junior standing. Relationship between technology and communication; writing practices from a historical point of view.

475 [T,D] 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 355. Development and use of new literacies as they affect communication through technology.

477 Advanced Multimedia Authoring
3 Prereq: Engl 355. Advanced writing, imaging and teamwork skills for authoring in new computer-based media; website project in client-oriented context.

478 Usability and Interface Design

School of Earth and Environmental Sciences


The School of Earth and Environmental Sciences is a new unit established August, 2006 comprised of the former Program in Environmental Science and Regional Planning and the Department of Geology. The School offers a Bachelor of Science in Environmental Science, Bachelor of Science in Geology, Master of Science in Environmental Science, Master of Regional Planning, Master in Geology, Doctor of Philosophy (Environmental and Natural Resource Sciences) and Doctor of Philosophy (Geology). The Masters and Bachelors degrees in Environmental Science are offered at WSU Tri-Cities. A Bachelor of Science in Environmental Science is also offered at WSU Vancouver. Minors in Environmental Science and Geology are available. The School of Earth and Environmental Sciences (SEES) focuses on the study of the earth, the environment, and the role of humans in modifying earth and environmental systems. SEES investigates the materials and processes of the geologic past to better understand the present and future states of our planet. Such materials and processes range in scale from the atomic structure of minerals to global patterns of geochemical cycling and climate change. Inherent in these studies is the application of the basic chemical, mathematical and physical sciences to investigate complex geologic and environmental systems. The study of human impact on the environment is inherently interdisciplinary, involving, in addition, biological and social sciences, as well as elements of policy, planning, and ethics. The interdisciplinary study of earth and environmental systems is the hallmark of the SEES approach to increasing understanding of the earth system and to providing a sound scientific basis for environmental decision-making.

Environmental Science and Regional Planning

esrp.wsu.edu
Troy 305
509-335-8538

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, multioptional 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 landuse planning. Regional planning majors can specialize in a variety of areas including landuse 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 65 members representing many disciplines.

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 graduation 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 improvement, environmental 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 previous 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 18 hours of core planning courses, and 6 hours of a 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.

Geology

www.sees.wsu.edu
Webster 1228
509-335-3009

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 microprobe, X-ray diffraction and fluorescence instrumentation, inductively coupled plasma mass spectrometer, isotopic extraction lines and X-ray diffraction and fluorescence analysis. 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 year of general inorganic chemistry; mathematics through one semester of calculus.

Schedules of Studies

Students must complete 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 (120 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/EP 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.

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.)

First Year

First Term
Chem 105 [P] (GER)4
Engl 101 [W] (GER)4
ES/EP 101 [B] (GER)4
GenEd 110 [A] (GER)4

Second Term
Arts & Humanities [H,G] (GER)2
Chem 106 [P] (GER)4
GenEd 111 [A] (GER)4
Intercultural Studies [I,G,K] (GER)2
Math 140 [N] or 171 [N] (GER)4

Second Year

First Term
Biol 106 [B] (GER)4
Chem 3454
Phys 101 [P] or 201 [P] (GER)4
Social Sciences [S,K] (GER)4

Second Term
Biol 107 [B] (GER)4
Engl 402 [W] (GER)4
Phys 102 [P] or 202 [P] (GER)4
Stat 212 [N] (GER) or 4123 or 4
Complete Writing Portfolio

Third Year

First Term
ES/EP 335 [M]3
ES/EP 490, 492, or 4931
Geol 102 [P] or SoilS 201 [B] (GER)3
MbioS 301, 302, or 3034
Tier III Course [T] (GER)3

Second Term
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)3
Biol 3724
ES/EP 3104
Intercultural [I,G,K] (GER)3
Option Course3

Fourth Year

First Term
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)3
ES/EP 490 [M]3
Option Courses9

Second Term
ES/EP 4444
ES/EP 4911
Option Courses9
Elective1

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.

GEOLOGY DEGREE PROGRAM (120 HOURS)

A 2.0 minimum GPA in the major is required.

First Year

First Term
Chcm 105 [P] (GER)4
Engl 101 [W] (GER)4
GenEd 110 [A] (GER)4
Geol 101 [P] or 102 [P] (GER)4
Math 107, if necessary4

Second Term
Chem 106 [P] (GER)4
ComSt 102 [C] (GER)4
GenEd 111 [A] (GER)4
Math 140 [N] or 171 [N] (GER)4

Second Year

First Term
Geol 210 [P] (GER)3
Geol 350 [M]4
Geol 3511
Math 172, Cpt S 121, or Stat 4124
Phys 101 [P] or 201 [P] (GER)4

Second Term
Arts & Humanities [H,G] (GER)3
Biological Sciences [B] (GER)4

136
36 Minors

Environmental Science

A 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.

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

Environmental Science and Regional Planning Courses


174 Introduction to Meteorology and the Atmospheric Environment 3 Same as CEE 174.

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

285 Planning for a Sustainable Environment 3 Prereq ES/RP 101. Ideas and information necessary to integrate environmental viability and sustainable development with other concerns of environmental planning.

301 Forest and Range Plant Resources I 3 (2-3) Prereq NATRS 300 or c//. 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 EconS 101. Same as EconS 330.


375 Aspects of Sustainable Development 3 Prereq junior standing. Same as EconS 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 Prereq Geol 101 or 102. 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; radiocology 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 Law 3 Prereq junior standing or permission of instructor. 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.

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.

425 Economic Analysis of Environmental Policies 3 Prereq Ag Ec 201 or Econ 101. Same as EconS 431.

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.

444 Environmental Assessment 4 Rec Biol 372. Environmental impact statements and their national and state policy frameworks, methods of assessment, and team preparation of an impact statement. Credit not granted for both ES/RP 444 and 544. Cooperative course taught by WSU, open to UI students (Geog 444).

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).


466 Environmental Psychology 3 Prereq Psych 105. 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.
471 Meteorology 3 Prereq Math 273; Phys 202. Basic meteorology; atmospheric thermodynamics; cloud physics; synoptic meteorology; radiative processes; climate change. Credit not granted for both ES/RP 471 and 571.

472 Economic Development and Underdevelopment 3 Prereq Econ 102; Rec Econ 301. Same as Econ 472.

480 Advanced Resource Economics 3 Prereq Math 201, 202. Same as Ag Ec 480.

481 Economics of Environmental Issues 3 Prereq Econ 101; Rec Econ 301. Same as Econ 481.

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


490 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

491 Senior Seminar 1 Prereq senior in environmental science and regional planning.

492 Special Topics V 1-3 May be repeated for credit; cumulative maximum 3 hours.

493 Special Topics V 1-3 May be repeated for credit; cumulative maximum 3 hours.

495 Undergraduate Internship V 1-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Practical experience in appropriate agencies; for career students in environmental science.

496 Cooperative Education Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Practical experience in appropriate agencies; for career students in environmental science.

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) Prereq calculus course; Phys course; Rec ES/RP 406. Graduate-level counterpart of ES/RP 409; additional requirements. Credits not granted for both ES/RP 409 and 509.

514 Environmental Biophysics 2 Prereq Math 107. Same as SoilS 514. Graduate-level counterpart of ES/RP 414; additional requirements. Credit not granted for both ES/RP 414 and 514.

516 Radiation Biology 4 (3-3) Prereq introductory radiological physics, or one course each in biology and radiological physics; Rec ES/RP 406. Graduate-level counterpart of ES/RP 416; additional requirements. Credit not granted for both ES/RP 416 and 516.

519 International Development and Human Resources 3 Same as Anth 519.

524 Environmental Health Assessment 2 Prereq one course each in biology, calculus, chemistry, general ecology and physics; Rec ES/RP 406. Graduate-level counterpart of ES/RP 424; additional requirements. Credit not granted for both ES/RP 424 and 524.

526 Population Analysis 1 Prereq NATRS/Entom/Biol 529, biometry. Same as NATRS 526.

527 Environmental Chemistry 2 Same as Chem 527.

529 Population Theory 1 Prereq general ecology. Same as NATRS 529.

530 Fundamentals of Industrial Safety 2 Prereq 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 Prereq ES/RP 531 or Pr/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) Prereq graduate standing, two social science courses. Same as CRS 535. Graduate-level counterpart of ES/RP 435; additional requirements. Credit not granted for both ES/RP 435 and 535.

544 Environmental Assessment 4 Rec Biol 372. 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 Prereq 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).


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 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Same as Entom 556.

557 Herbicides: Toxicology and Mode of Action 1 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Same as Entom 557.

558 Pesticide Topics 1 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Same as Entom 558.

560 Watershed Management 3 Prereq NATRS 204, completion of department requirement in biology, chemistry, and physical science, mathematics and statistics; or by interview. 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 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.

571 Meteorology 3 Graduate-level counterpart of ES/RP 471; additional requirements. Credit not granted for both ES/RP 471 and 571.
575 Geographic Information Systems 3 
Prereq 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 2 (1-3) or 3 (1-6) Prereq C E 583. Same as C E 584.

585 Aquatic System Restoration 3 (2-3) Prereq Chem 345 or C E 583; MBioS 101 or C E 581. Aquatic System Restoration 3 (2-3) Same as C E 583.

586 Introduction to Geographic Information Systems 4 (2-6) Rec DOS knowledge. Graduate-level counterpart of ES/RF 466; additional requirements. Credit not granted for both ES/RF 466 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 3 Prereq senior standing. Same as NATRS 594.

595 Graduate Internship V 2-5 By interview only. Practical work experience in appropriate agencies; for graduate career students. S, F grading.

597 Technical and Public Communications in Environmental Science 2 Prereq technical writing course; Rec public speaking course. Development of written and oral communication skills for practical application in the field of environmental science.

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.

Geology Courses

Geol 101 [P] Introduction to Geology 4 (3-3) Introductory physical geology for non-science majors; emphasis on western US Credit not granted for more than one of Geol 101, 102, 180.

102 [P] Physical Geology 4 (3-3) For science majors and honors students. Modern concepts of earth science; mineral rock, resource, and map study. Field trip required. Credit not granted for more than one of Geol 101, 102, 180.

103 The Solar System 3 Overview of the results of modern planetary exploration, geological processes and environments on planets and moons in our solar system. Field trip required.

150 [Q] Conflict and Debate in Geological Sciences 4 (3-3) Examples in geology of how science is done, how it advances, and what constitutes scientific work. Field trip required.

180 [P] Honors Geology 4 (3-3) Prereq honors student or by interview. Introduction to physical geology with emphasis on original research and scientific writing. Credit not granted for more than one of Geol 101, 102, 180. Field trip required.

201 Geology of the National Parks 2 Prereq Geol 210. Significant geographic features, processes, and geologic history of the national parks. Field trip optional.

206 Field Petrology 3 (2-3) Prereq Geol 101 or 102. Hand sample analysis, petrogenesis and field relationships of rocks. Field trips required.

210 [P] Earth's History and Evolution 4 (3-3) Rec Biol 102. Introduction to earth's history and evolution through observations, data collection and analysis, readings and writing exercises. Two field trips required.

221 Field Trip I (0-3) May be repeated for credit. Prereq Geol 210. One-week field trip to study geology of a selected area of the western United States. S, F grading.

230 Introductory Oceanography 3 Basic physical, chemical, geological and biological principles underlying oceanic phenomena; for both science and non-science majors.

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.

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.


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 physical 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.
418 Geomicrobiology 3 Explore the interactions of microorganisms with the environment, particularly soil-rock-water interaction and how microorganisms are important to our understanding of geological and hydrological processes; topics include ground water microbiology, subsurface microbiology and the microbiology of extreme environments. Additional work required for graduate credit. Credit not granted for both Geol 418 and 518. Cooperative course taught by UI (Geol 418); open to WSU students.


428 Geostatistics 3 Prereq Stat 360. 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 geologic record and assessing seismic risk in active fault environments. Cooperative course taught by UW, open to WSU students.

445 Astrobiology 3 Prereq completion of biological and physical science GER and junior standing. Origin, evolution, distribution and future of life in the universe; fundamental concepts of life and habitable environments on Earth and other planetary bodies in and outside of the solar system. Credit not granted for both Geol 445 and 545. Cooperative course taught by UW, open to UI students.

451 Pedology 3 (2-3) Prereq SoilS 201. 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).

467 Volcanology 3 (2-3) Prereq Geol 320; Geol 356. Volcanic process, eruption mechanisms, volcanic deposits, hazard assessment. Field trip required. Cooperative course taught jointly by WSU and UI (Geol 467). Credit not granted for both Geol 467 and 567.

470 Introduction to Economic Geology 4 (3-3) Prereq Geol 340, 350. Genesis, evolution and tectonic setting of ore deposits combining 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 geological, 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 Prereq Chem 105 and 106 or equivalent; Geol 480 or by permission. Radiogenic isotopes and their uses as chronometers (radiometric dating) and as traces 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.

490 Undergraduate Research V 1-3 Prereq Geol 101, 210. Research and advanced laboratory experience with a geology faculty member; oral presentation and written thesis.

498 Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Credit not granted for both Geol 498 and 598. Prereq major in geology or related field. Research papers presented by students, faculty, and visiting scientists on geological research. S, F grading.

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

505 Geophysics 4 (3-3) Prereq Geol 340. Graduate-level counterpart of Geol 405; additional requirements. Credit not granted for both Geol 405 and 505.

513 Soil Physics 3 (2-3) Prereq graduate standing. Same as SoilS 513. Credit not granted for both SoilS 413 and 513.

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.

518 Geomicrobiology 3 Graduate-level counterpart of Geol 418; additional requirements. Credit not granted for both Geol 418 and 518. Cooperative course taught by UI (Geol 518); 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. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 520).


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).

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 Prereq 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 538).

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 539).

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 540).

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.

545 Astrobiology 3 Graduate-level counterpart of Geol 445; additional requirements. Credit not granted for both Geol 445 and 545.

547 Astrobiology 3 Graduate-level counterpart of Geol 445; additional requirements. Credit not granted for both Geol 445 and 545.
in the economics majors allow sufficient time for electing courses outside the school while meeting all unit 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.

In economics, students study the allocation of resources between competing and alternative uses. Macroeconomics analyzes the level of output and prices, inflation, and unemployment. Microeconomics emphasizes how consumers make purchase decisions and how they use their time, how firms make decisions on what to produce and who to employ, often focused on applied topics such as health care, sports or transportation economics. Both macroeconomics and microeconomics often deal with international issues.

In agricultural economics and management, students learn to use economic concepts along with technical production information to solve problems of farms, ranches, and related organizations. They also obtain knowledge and skills needed to solve broader economic and social problems facing agriculture and society.

In agribusiness, students learn to use economic and business concepts and management tools to effectively function in firms and organizations that comprise the agribusiness sector. Knowledge and skills in management, marketing, and finance are developed with emphasis on the specialized requirements of the agribusiness community.

In environmental and resource economics and management, students learn to make decisions while carefully weighing the trade-offs between protecting, restoring, developing, and allocating natural resources for the greatest benefit to society.

Students in all four majors complement courses in the major with technical and career electives that strengthen their preparation for productive careers. Many choose to include business, entrepreneurship, and accounting courses. Others focus on agricultural production courses. Still others emphasize political science and public policy.

A wide variety of courses is available to non-majors who want to take selected courses to support their programs in other departments. Students from other departments may declare a minor in any of these program areas. The school also offers a minor in Sustainable Development.

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 PhD programs, expect calculus through vector calculus (Math 171, 172, 273), linear algebra (Math 220), mathematics for economics (EconS 406), and econometrics (EconS 311). Students planning to pursue graduate study in economics are urged to select an appropriate program of study, including a self-designed additional 15 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: EconS 322, 324, 327, 423, 425, 451; 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 math requirements. Calculus through Math 273 and EconS 408 are also useful.

Program in Sustainable Development

Interim Director, M. Nezimmamangal.

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-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, financial and market analysts for natural resource-based firms; as advocates and lobbyists for environmental groups; and as economists, environmental auditors, environmental compliance officers, legislative and policy analysts for state, local, and federal governments.

Schedules of Studies

Students must complete 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 ECONOMICS AND MANAGEMENT REQUIREMENTS (120 HOURS)

The Bachelor of Science in Agribusiness Economics and Management 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 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) understand basic business concepts in management, marketing, and finance for appropriate application in the agribusiness 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**

**First Term**

- EconS 101 [S] or 102 [S] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 201 3
- Tier I Science [B,P,Q] (GER) 3 or 4

**Second Term**

- Biological Sciences [B] (GER) 3 or 4
- ComSt 102 [C] or 324 [C] (GER) 3
- EconS 101 [S] or 102 [S] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 202 [N] (GER) 3

**Second Year**

**First Term**

- Acctg 230 3
- Arts & Humanities [H, G] (GER) 3
- EconS 301 3
- Intercultural Studies [I,G,K] (GER) 3
- Physical Sciences (GER) 3

**Second Term**

- Acctg 231 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- EconS 302 3
- Stat 212 [N] (GER) or MgtOp 215 4
- Elective 3
- Complete Writing Portfolio

**Third Year**

**First Term**

- Business Skills Elective 3
- EconS 311 3
- EconS 350 or 352 3
- Fin 325 3
- Elective 3

**Second Term**

- Business Skills Elective 3
- EconS 351 3
- EconS 452 3
- Engl 402 [W] (GER) 3
- Elective 3

**Fourth Year**

**First Term**

- Business Skills Elective 3
- EconS 451 [M] 3
- EconS 453 3
- EconS 497 or 499 3
- Elective 3

**Second Term**

- Business Skills Elective 3
- EconS 490 [M] 3
- Tier III Course [T] (GER) 3
- Electives 6

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1 All three science GER courses must total 10 credits.
2 At least one elective must satisfy the American Diversity [D] GER.
3 Consult advisor.

**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.

**First Year**

**First Term**

- EconS 101 [S] or 102 [S] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 201 3
- Tier I Science [B,P,Q] (GER) 3 or 4

**Second Term**

- Biological Sciences [B] (GER) 3 or 4
- ComSt 102 [C] or 324 [C] (GER) 3
- EconS 101 [S] or 102 [S] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 202 [N] (GER) 3

**Second Year**

**First Term**

- Acctg 230 3
- Arts & Humanities [H, G] (GER) 3
- EconS 301 3
- Intercultural Studies [I,G,K] (GER) 3
- Physical Sciences (GER) 3

**Second Term**

- Acctg 231 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- EconS 302 3
- Stat 212 [N] (GER) or MgtOp 215 4
- Elective 3
- Complete Writing Portfolio

**Third Year**

**First Term**

- EconS 311 3

**Fourth Year**

**First Term**

- EconS 451 3
- EconS 497 3
- EconS Elective 3
- Engl 402 [W] (GER) 3
- Technical/Career Electives 3
- Elective 3

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1 All three science GER courses must total 10 credits.
2 At least one elective must satisfy the American Diversity [D] GER.
3 Consult advisor.

**ECONOMICS DEGREE PROGRAM (120 HOURS)**

The B.A. in Economics is designed to provide basic knowledge and analytical tools needed to secure professional positions in a wide range of industries and public and government organizations.

Graduates with the B.A. in Economics will be able to 1) understand the 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) practice appropriate applications to general policy and business decision making; 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**

**First Term**

- EconS 101 [S] or 102 [S] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 201 3
- Tier I Science [B,P,Q] (GER) 3 or 4

**Second Term**

- Biological Sciences [B] (GER) 3 or 4
- ComSt 102 [C] or 324 [C] (GER) 3
- EconS 101 [S] or 102 [S] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 202 [N] (GER) 3

**Second Year**

**First Term**

- Arts & Humanities [H, G] (GER) 3
- EconS 301 3
- Intercultural Studies [I,G,K] (GER) 3
- Physical Sciences [P] (GER) 3 or 4
- Elective 3

**Second Term**

- Acctg 230 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- EconS 302 3
- Stat 212 [N] (GER) or MgtOp 215 4
- Technical/Career Electives 3
- Complete Writing Portfolio

**Third Year**

**First Term**

- EconS 311 3

**Fourth Year**

**First Term**

- ComSt 102 [C] or 324 [C] (GER) 3
- EconS 301 3

143
Economics Sciences

Intercultural Studies [I,G,K] (GER) 3
Physical Sciences [P] (GER) 3 or 4
Social Sciences [S,K] (GER) 3

**Second Term Hours**

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
EconS 302 3
Stat 212 [N] (GER) or MgtOp 215 3
EconS Electives 3
Elective 2 2
Complete Writing Portfolio

**Third Year**

**First Term Hours**

EconS 311 3
EconS Option Electives 6
Electives 6

**Second Term Hours**

EconS Electives 6
EconS Option Elective 6
Electives 3

**Fourth Year**

**First Term Hours**

EconS 497 or 499 3
EconS Elective 3
Engl 402 [W] (GER) 3
Electives 3

**Second Term Hours**

EconS 490 [M] 3
Tier III Course [T] (GER) 3
Electives 9

1. Acceptable alternatives are Math 140, 171, 202, or 206.
2. At least one elective must satisfy the American Diversity [D] GER.

**ENVIRONMENTAL AND RESOURCE ECONOMICS AND MANAGEMENT (120 HOURS)**

This degree offers in-depth study of economic and management decision tools and applications for environmental policy, sustainable resource management, and the regulatory process. Students develop entrepreneurial skills for integrating sound environmental and resource management into day-to-day business decisions. The flexibility of this degree enables students to prepare for a wide range of career options and advanced educational opportunities. 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 the B.S. in Environmental and Resource 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 to environmental and resource management issues; 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>EconS 301 3</td>
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<td>Intercultural Studies [I,G,K] (GER) 3</td>
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<td>Physical Sciences [P] (GER) 3</td>
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<td>Biol 102 [B], 106 [B], 120, or MBioS 101 [B] (GER) 4</td>
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**Third Year**

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<td>EconS 302 3</td>
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**Fourth Year**

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<td>EconS 430 3</td>
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<td>EconS 431 3</td>
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<td>NATRS 438 3</td>
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**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 School of Economic Sciences, 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 EconS 351 and 451; 335; 352 and 452; and enough additional EconS electives to total 16 hours of course work in the School.

A student wishing to declare a minor should consult with an advisor as early as possible to develop the required program.

**Economics**

To be eligible to certify in an economics minor, students must have a cumulative 2.0 gpa. A minor in economics requires 18 hours of EconS courses, nine of which must be at the 300-400-level with an overall 2.0 gpa in the required courses. EconS 101 or 198, 102, and 302 or 320 are required. In addition, EconS 305, one 300-level or higher EconS elective and one 400-level or higher EconS elective are required (only three hours of EconS 497 or 499 may be used to fulfill the upper-division EconS elective requirement). Only EconS 497 or 499 may be taken pass, fail.

**Environmental and Resource Economics and Management**

The minor in Environmental and Resource Economics and Management requires 16 hours. The following courses are required: EconS 330, 431, 432 or 433; EconS 301 or 305 or 326; and 4 elective credits in EconS. A student wishing to declare a minor should consult with an advisor as early as possible to develop the required program.

**Sustainable Development**

The program offers a minor in sustainable development. The minor is comprised of EconS 326, 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.

1. All three science GER courses must total 10 credits.
2. At least one elective must satisfy the American Diversity [D] GER.
3. Consult Advisor. Technical/Career electives enhance the focus of the degree.
Description of Courses

Economic Sciences Courses

EconS 101 [S] Fundamentals of Microeconomics
3 Theory and policy of human responses to scarcity; how this affects business competition, international trade, industrial organization, investment, and income distribution.

EconS 102 [S] Fundamentals of Macroeconomics
3 Theory and policy related to unemployment, inflation, foreign trade, government spending, taxation, and banking.

EconS 198 [S] Economics Honors 3 Introduction to economic theory and policy issues. Open only to students in the Honors College.

EconS 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.

EconS 301 Intermediate Microeconomics Theory
3 Prereq EconS 101; Math 171 or 202. Calculus-based intermediate microeconomic theory for majors in economics and agricultural economics. Credit not granted for both EconS 301 and 305.

EconS 302 Intermediate Macroeconomic Analysis
3 Prereq EconS 102; Math 171 or 202. Income, employment, and inflation theory with policy implications.

EconS 305 Theory of the Firm and Market Policy
3 Prereq EconS 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 EconS 301 and 305.

EconS 311 Introductory Econometrics
3 Prereq EconS 101; EconS 102; Stat 212 or MgtOp 215. Methods of empirical analysis in the context of economic analysis and forecasting problems. Credit not granted for both Econ 311 and 411.

EconS 320 Money and Banking
3 Prereq EconS 102. Analysis of banking institutions and monetary policy in the US, with comparison to abroad.

EconS 321 Economics of Sports in America
3 Prereq EconS 101; junior standing. Economic aspects of American sports; fan demand; advertising; team output decisions; league/conference organization; government and sports.

EconS 322 [M] Public Finance and Taxation
3 Prereq EconS 101. Theory and practice of the public sector; taxes, expenditures, and administration at local, state, and federal levels.

EconS 323 Labor Economics
3 Prereq EconS 101. Functioning of labor markets; introduction to collective bargaining and labor law.

EconS 324 [M] The Economics of Health Care
3 Prereq EconS 101. The economics of allocating, financing and delivering medical care services. Cooperative course taught by WSU, open to UI students (Econ 450).

EconS 325 [M] The Economics of Organization, Contracting, and Law
3 Prereq EconS 101. Examination of the economic and legal aspects of contractual and non-contractual ways of organizing transactions by business.

EconS 326 Aspects of Sustainable Development
3 Prereq junior standing. Ecological, economical, and sociological aspects of sustainable development.

EconS 327 International Trade and Finance
3 Prereq EconS 102. Analysis and description of international trade flows; commercial policy; multinational firms, foreign exchange markets; open economy macroeconomics; international monetary systems.

EconS 330 Natural Resource Economics
3 Prereq EconS 101. The role of economics in natural resource management and policy. Course equivalent to OSU’s AREC 351.

EconS 335 Agribusiness Finance
3 Prereq Acctg 230; EconS 101; Math 107 or 201; either Stat 212 or MgtOp 215. Financial management, decision making, and analysis in the agribusiness sectors; capital market institutions and valuation processes.

EconS 350 Introduction to Farm and Ranch Management
3 Prereq EconS 101. Decision making, planning, implementation and control of farms and ranches using economic principles, records, financial reports, budgeting and investment analysis.

EconS 351 Introduction to Agricultural Marketing
3 Prereq EconS 101. Problems of marketing farm products; functions and institutions surrounding market operations.

EconS 352 Business Management Economics
3 Prereq EconS 101. Introduction to the economic concepts, techniques and applications of organizational, marketing, financial, operations, and resource management in a firm. Cooperative course taught jointly by WSU and UI (Ag Ec 391).

EconS 355 [S,M] American Agriculture and Rural Life
3 History and economic structure of American agriculture, land settlement, organizational nature of farms, technology, and patterns in rural life.

EconS 361 Farm and Natural Resources Appraisal
3 Prereq EconS 101; EconS 350. Factors affecting value of land; valuation for loans, sales, assessment, and condemnation. Field trips required. Cooperative course taught by UI (AgEc 361), open to WSU students.

EconS 404 Economics for Managers
3 Permission of Vancouver or Tri-Cities MBA coordinator or the academic coordinator in the School of Economic Sciences required. Topics in the application of economics for business decision making with an introduction to calculus. Credit not granted to graduate students in the School of Economic Sciences.

EconS 407 Decision Analysis in Economics
3 Prereq EconS 301; EconS 311; EconS 330. Decision analysis tools for economics and agribusiness; linear, nonlinear, integer programming; transportation, assignment, inventory, input-output models. Credit not granted for both EconS 407 and 507.

EconS 416 Economics in Transition
3 Prereq EconS 102. Key institutions, policies, and economic performance of different economic systems; transition of new economies in Eastern Europe; capitalism as a global system.

EconS 420 Monetary Theory and Policy
3 Prereq EconS 320. Current issues in monetary economics with a special emphasis on policy.

EconS 423 [M] Collective Bargaining
3 Prereq EconS 102. Collective bargaining from an economic perspective: union-management negotiations in the US private sector.

EconS 425 Industrial Organization
3 Prereq EconS 301; EconS 311. Economic theories of firm behavior and the influence of market industry parameters; buyer/seller concentration, information asymmetries, product differentiation, and entry conditions.

EconS 426 Transportation Economics
3 Prereq EconS 305. Transportation economics and relevant transportation modeling; policy issues and concerns.

EconS 427 Economic Development and Underdevelopment
3 Prereq EconS 102. Development theories, policies, and performance of Third World economies; population, land reform, foreign trade, aid, investment, debt, dependency.

EconS 428 [T] Global Capitalism Today: Perspectives and Issues
3 Prereq GenEd 111; EconS 101 or 102. Logic and consequences of capitalism as a global system; multinational corporations; underdevelopment and overdevelopment; external debt, population, and environmental crisis.

EconS 430 [T] Managing the Global Environment
3 Study of policy and management tools to address environmental issues of global significance.

EconS 431 Economic Analysis of Environmental Policies
3 Prereq EconS 301; EconS 311; EconS 330. 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 EconS 431 and 531.

EconS 432 [M] Natural Resource Economics and Policy
3 Prereq EconS 301; EconS 311; EconS 330. Economic principles and models applied to natural resource problems, issues, and policies. Credit not granted for both EconS 432 and 532.

EconS 433 Topics in International Environmental Law, Policy and Institutions
3 Prereq permission of instructor. Interdisciplinary study of the political development of the European Union and its impact on modern Italy; natural resource, environmental and agricultural policy and law.
501 Microeconomic Theory II 3 Prereq EconS 101, Rec EconS 350. Business and financial principles applied to organization and operation of farms and ranches.

500 Macroeconomic Theory I 3 Prereq EconS 301 or 305; EconS 351; Math 202 or 171; Stat 212 or MgtOp 215. Institutions, practices, policies, and problems in agricultural input and output marketing.

502 Macroeconomic Theory III 3 Prereq EconS 500. Macroeconomic theory, short-run fluctuations and nominal rigidities, monetary economics and inflation, real business cycle models, unemployment international macroeconomics.

503 Microeconomic Theory IV 3 Prereq EconS 501. General equilibrium, welfare economics and social choice, market failure, game theory, economics of information.

504 Production and Consumption Economics 3 Prereq EconS 502; EconS 503. Advanced duality topics, demand and supply system modeling, financial economics and risk.

507 Decision Analysis in Economics 3 Prereq EconS 301; either Math 171 or 202. Graduate-level counterpart of EconS 407; additional requirements. Credit not granted for both EconS 407 and 507.

509 Applied Econometrics 3 Prereq EconS 509. Application of sampling techniques, linear regression and analysis of variance and covariance to economics research problems.

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 EconS 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 EconS 501; EconS 511. Econometric methods for systems estimation; simultaneous equations, discrete and limited dependent variable, panel data, and time series data.

513 Econometrics III 3 Prereq EconS 502; EconS 503; EconS 512. Linear and nonlinear models and maximum likelihood estimation and inference; semi-parametric and parametric methods; limited dependent variable models.

514 Econometrics IV 3 Prereq EconS 502; EconS 503; EconS 513. Constrained estimation, testing hypotheses, bootstrap resampling, BMM estimation and inference, nonparametric regression analysis, and an introduction to Bayesian econometrics.

521 Topics in Agricultural Economics V 1-3 Prereq EconS 301; EconS 311; EconS 330. Current topics in agricultural development, marketing, farm management, and agricultural policy. May be repeated for credit; cumulative maximum 6 hours.

525 Econometrics 3 Prereq 3 hours in statistics. Theory and practice of multiple regression methods; applications to the study of economic and other phenomena; use of computer regression programs. Cooperative course taught by UI (AgEc/S 525); open to WSU students.

526 Microeconomic Analysis 3 Prereq EconS 301 or 305; Math 171 or 202. Masters-level, calculus-based producer and consumer theory with selected managerial economics topics. Cooperative course taught by WSU, open to UI students (AgEc/S 526).

527 Mathematics for Economists 3 Prereq graduate standing. Mathematical methods applicable to economic analysis and research. Cooperative course taught by UI (AgEc/S 527); open to WSU students.

531 Economic Analysis of Environmental Policies 3 Prereq EconS 301; EconS 311; EconS 330. Graduate-level counterpart of EconS 431; additional requirements. Credit not granted for both EconS 431 and 531. Cooperative course taught by WSU; open to UI students (Ag Econ S 531).

532 Natural Resource Economics and Policy 3 Prereq EconS 301; EconS 311; EconS 330. Graduate-level counterpart of EconS 432; additional requirements. Credit not granted for both EconS 432 and 532. Cooperative course taught by WSU; open to UI students (Ag Econ S 532).

533 International Trade and Policy 3 Prereq graduate standing. Economics of international trade and development with an emphasis on policy and research issues that arise from interaction of economic events in the world food economy. Cooperative course taught by UI (AgEc S 533); open to WSU students.

535 Agribusiness 3 Prereq graduate standing. Economic and strategic management theories and their relevance to agribusiness decision-making including empirical applications. Cooperative course taught by UI (AgEc S 535); open to WSU students.

536 Marketing Economics 3 Prereq EconS 508. Application of economic theory to topics in marketing and price analysis. Cooperative course taught by WSU; open to UI students (Ag Econ S 536).

540 Production Economics 3 Prereq EconS 508. Production economics theory and methods applied to problems of production response, economic optimization, technology, policy, risk and dynamics.

553 International Trade and Marketing 3 Prereq graduate standing. Graduate-level counterpart of EconS 453; additional requirements. Credit not granted for both EconS 453 and 553.

555 Managerial Economics for Decision Making 3 Prereq admission to MBA program. Optimal economic decision making for business in a global environment. Not open to economics graduate students.

560 Agribusiness Management and Marketing 3 Rec EconS 452. Management and marketing problem situations in agribusiness; alternative policies, strategies, and decisions.

571 International Trade 3 Prereq EconS 502; EconS 503; EconS 511. Recent developments in trade theory and policy, including international factor movements, empirical analysis of trade flows and strategic trade policies.
Variable credit. S, F grading.

3 Prereq EconS 502, 503, 511. Economic theory and the dynamics of natural resource systems.

596 Advanced Topics in Financial Economics
V 1-6. Prereq EconS 500; EconS 501. Same as Fin 596.

599 Special Topics in Economics 3 Prereq 500. 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.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Educational Leadership and Counseling Psychology

www.education.wsu.edu/ELCP
Cleveland 351
509-335-9195


The department offers courses of study leading to a Bachelor of Arts in Sports Management or Bachelor of Science in Kinesiology (with majors in athletic training, movement studies, and health and fitness education); and undergraduate minors in leadership studies and sport management. Majors degrees (Master of Education, Master of Arts in Education) are offered in the areas of educational leadership, higher education, counseling, educational psychology, and sport management. The Doctor of Philosophy (Education) is offered with a specialization in educational leadership or higher education.

The Department of Educational Leadership and Counseling Psychology housed in the College of Education, has excellent facilities for undergraduate/graduate study and research. The department sponsors and hosts a number of state, national, and international programs. The Assessment and Evaluation Center serves schools districts and state agencies by providing high-quality assessment and evaluation services through grant and contract agreements. Programs for superintendent, principal and program administrator certification are available at the Pullman, Spokane, Tri-Cities, and Vancouver campuses. A state-wide cohort-based superintendent program is also available. Educational Staff Associate (ESA) school counselor certification program is offered at the Pullman and Tri-Cities campuses. Also, a post-master's school psychology certification program is offered at the Spokane campus.

Application for Graduate Study
Students who plan to work towards an advanced degree should contact the Office of Graduate Studies in the College of Education. Individuals applying for admission to do graduate work must make application to the WSU Graduate School, and submit the following materials to the Office of Graduate Studies: Departmental Application form; a statement of your professional objectives; official college transcripts; three (3) letters of recommendation from individuals qualified to comment on the applicant's academic and professional abilities; and see the program web page to determine if the desired graduate program requires completion of the Graduate Record Examination. Interested students should directly contact the Office of Graduate Studies for specific requirements of each program area.

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 or communications. 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 in sport management.

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.

Bachelor of Science in Kinesiology
Three kinesiology majors in the Department of Educational Leadership and Counseling Psychology (athletic training, movement studies and 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 centered on human movement. A grade of C or better must be obtained in all departmental courses in and 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.

The general prerequisite for enrollment in 300 and 400-level movement studies courses is 60 hours of coursework and certification as a kinesiology major. Students of junior or senior status in a certified major who require a 300- or 400-level movement studies 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.

Undergraduate Minors
The Department of Educational Leadership and Counseling Psychology offers undergraduate minors in Leadership Studies and Sport Management. 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.
### Schedules of Studies

**Students must complete 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 (125 HOURS)

The athletic training education program is seeking continuing accreditation 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. Acceptance into the clinical internship is required to certify in athletic training and to complete the degree requirements for graduation. Academic requirements for this application process include but are not limited to 1) completion or current enrollment in MvtSt 264, Ath T 267, and Ath T 267; 2) a 2.75 cumulative collegiate gpa at the time of application; and 3) current first aid, CPR, and AED credentials. Students are advised to consult with athletic training advisors early in their academic careers for specific application procedures.

Transfer students are welcome to apply for admission into the clinical internship prior to their attendance at WSU. Transfer students desiring admission into the clinical internship program must have been accepted to WSU, have completed the prerequisite course work, meet academic requirements and be of sophomore standing.

Applicants who do not meet the required 2.75 cumulative gpa requirement but have had a semester 2.75 gpa the last two semesters at WSU can complete the application process to be admitted into the clinical internship experience. Transfer students will also have to show two semesters at WSU with a 2.75 gpa to be eligible.

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 six 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.

Kinesiology Core courses required for athletic training, health and fitness teaching, and movement studies: Ath T 311, HF 361, 484, MvtSt 199, 262, 264, 362, 380, 415, 461, Biol 251.

### First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>First Term</th>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td>Engl 101 [W] (GER)</td>
<td>Ath T 266</td>
<td>3</td>
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<td></td>
<td>MvtSt 199</td>
<td>Ath T 267</td>
<td>3</td>
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<td></td>
<td>MvtSt 262</td>
<td>Biol 102 [B] or 106 [B] (GER)</td>
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<td></td>
<td>MvtSt 264</td>
<td>ComSt 102 [C] (GER)</td>
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<td></td>
<td>Psych 105 [S] (GER)</td>
<td>Math 205 or [N] (GER)</td>
<td>3</td>
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<td>Soc 101 [S,D] (GER)</td>
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<td>Apply to Clinical Internship</td>
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### Second Year

<table>
<thead>
<tr>
<th>Term</th>
<th>First Term</th>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td>Ath T 466</td>
<td>Ath T 311</td>
<td>3</td>
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<td></td>
<td>Ath T 491</td>
<td>Ath T 468</td>
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<tr>
<td></td>
<td>Chem 101 [P] (GER)</td>
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<td></td>
<td>GenEd 110 [A] (GER)</td>
<td>FSHN 130 [B]</td>
<td>3</td>
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<td></td>
<td>HF 361</td>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td></td>
<td>MvtSt 313</td>
<td>Complete Writing Portfolio</td>
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### Third Year

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<thead>
<tr>
<th>Term</th>
<th>First Term</th>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>Ath T 390, 391, or 392</td>
<td>3</td>
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<td>Ath T 467</td>
<td>Ath T 469</td>
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<td>Ath T 492</td>
<td>Ath T 492</td>
<td>3</td>
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<td></td>
<td>SpMgt 377</td>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
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<td></td>
<td></td>
<td>MvtSt 362</td>
<td>3</td>
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<td></td>
<td></td>
<td>Psych 265</td>
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### Fourth Year

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<th>Term</th>
<th>First Term</th>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td>Ath T 305</td>
<td>Ath T 390, 391, or 392</td>
<td>3</td>
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<td>Ath T 493</td>
<td>Biol 251</td>
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<td></td>
<td>Biol 251</td>
<td>HF 484</td>
<td>4</td>
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<td></td>
<td>MvtSt 481</td>
<td>MvtSt 380</td>
<td>3</td>
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<td>MvtSt 415</td>
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<td>MvtSt 461</td>
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### First Year

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<tr>
<td>Ath T 266</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>HF 393</td>
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<tr>
<td>HF 484</td>
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<td>MvtSt 481</td>
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### Second Term

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<tbody>
<tr>
<td>Ath T 493</td>
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<tr>
<td>MvtSt 380</td>
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<td>MvtSt 415</td>
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### Third Year

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<tr>
<th>Term</th>
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<tbody>
<tr>
<td>Ath T 311</td>
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<tr>
<td>HF 361, 484</td>
<td>3</td>
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<tr>
<td>MvtSt 199, 262</td>
<td>3</td>
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<tr>
<td>MvtSt 264, 362, 380, 415, 461, Biol 251</td>
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</tbody>
</table>

### 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 lifestyle. Kinesiology Core courses required for athletic training, health and fitness teaching, and movement studies: Ath T 311, HF 361, 484, MvtSt 199, 262, 264, 362, 380, 415, 461, Biol 251.
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, professional health and fitness club employment, teaching, coaching, physical therapy, dance therapy, and sports medicine.

Because of the high demand for this program, students must meet minimum certification requirements, as listed below, in order to be admitted to the Movement Studies program. 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 Movement Studies major prior to taking any 300- or 400-level Movement Studies 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. A cumulative GPA of 2.75.
   3. A grade of C or better in each of the following courses: ComSt 102, Eng 101, and Math [N] GER.
   4. A written statement (maximum of two pages) describing relevant work experience/involvement in extracurricular activities related to Movement Studies. This statement will be evaluated on the basis of the breadth and depth of the experiences, as well as for clarity of expression.

SP &T MANAGEMENT DEGREE PROGRAM
(120 HOURS)

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 for Certification

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.

First Year

First Term

   | Course Code | Course Title | Hours |
---|-------------|------------|-------|
   | Ath T 311   |             | 3     |
   | HF 481      |             | 3     |
   | MvtSt 415   |             | 3     |
   | T & L 464   |             | 1     |
   | T & L 465   |             | 1     |

Second Term

   | Course Code | Course Title | Hours |
---|-------------|------------|-------|
   | GenEd 110 [A] (GER) |             | 3     |
   | T & L 466   |             | 2     |

Second Year

First Term

   | Course Code | Course Title | Hours |
---|-------------|------------|-------|
   | Chem 101 [P] or 105 [P] (GER) |             | 4     |
   | Biol 251    |             | 3     |
   | HF 361      |             | 3     |
   | MvtSt 313   |             | 3     |
   | Soc 345     |             | 3     |
   | Elective    |             | 2     |
   | Intercultural Studies [I,G,K] (GER) |             | 3     |
   | Soc 101 [S,D] (GER) |             | 3     |

Second Term

   | Course Code | Course Title | Hours |
---|-------------|------------|-------|
   | MvtSt 314   |             | 3     |
   | MvtSt 362   |             | 3     |
   | MvtSt 380   |             | 3     |
   | Elective    |             | 2     |

Fourth Year

First Term

   | Course Code | Course Title | Hours |
---|-------------|------------|-------|
   | Ath T 311   |             | 3     |
   | HF 393      |             | 1     |
   | HF 484      |             | 3     |
   | MvtSt 481   |             | 3     |
   | Elective    |             | 6     |
   | Intercultural Studies [I,G,K] (GER) |             | 3     |

Second Term

   | Course Code | Course Title | Hours |
---|-------------|------------|-------|
   | MVST 461   |             | 3     |
   | Tier III Course [T] (GER) |             | 3     |
   | Elective    |             | 3     |

266 Care and Prevention of Athletic Injuries
3 Prereq MvtStt 262 or c//. Prevention, recognition, and management of common sport related injuries and illnesses.

267 Techniques in Athletic Injuries 2 (1-2) Prereq MvtSt 266 or c//. Applied clinical approach to basic skills commonly used in the field of athletic training.

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 MvtSt 262. Basic information and guidelines for enhancement of athletic performance, injury prevention, rehabilitation and general fitness.

390 Athletic Training High School Practicum
V 1-4 May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. S, F grading.

391 Athletic Training Sport Medicine Practicum
V 1-4 May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. 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.


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 V 1-4 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

491 Athletic Training Clinical Internship I
2 (0-4) May be repeated for credit; cumulative maximum 6 hours. By interview only. Beginning techniques in management of sport injury/illness under supervision of a certified athletic trainer. S, F grading.

492 Athletic Training Clinical Internship II
2 (0-4) May be repeated for credit; cumulative maximum 6 hours. By interview only. Intermediate techniques in management of sport injury/illness under supervision of a certified athletic trainer. S, F grading.

493 Athletic Training Clinical Internship III
2 (0-4) 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.

Counseling Psychology Courses

457 [T,D] Chicano/Latino 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. Same as CES 457.

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 Philosophical assumptions, theory of personality, counseling process, techniques and relevant research in the major theories of counseling and personality. Cooperative course taught by WSU, open to UI students (PEP 511).

512 Theories, Research, and Techniques in Counseling Psychology II 3 Prereq CoPsy 511. Advanced study of process techniques and outcome research in the field of counseling and psychotherapy; non-specific process skills are presented and integrated into specific, empirically validated interviews. Cooperative course taught by WSU, open to UI students (PEP 512).

513 Career Counseling: Theories and Methods 3 Theories, concepts, methods and findings in career counseling; vocational assessment and prediction.

515 Ethics and Professional Problems in Counseling Psychology 3 Professional problems; ethical, legal, and training issues, practices, and new issues. Cooperative course taught by WSU, open to UI students (PEP 515).
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Description</th>
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<tbody>
<tr>
<td>516</td>
<td>Life Span Development and Counseling Issues</td>
<td>Prereq graduate standing. Major theories and issues in human development and their application to counseling practice including case conceptualization, treatment and intervention planning and psychological assessment and research.</td>
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</tr>
<tr>
<td>518</td>
<td>Theoretical Foundations of Group Counseling</td>
<td>Prereq CoPsy 512 or c//. History, philosophy and theoretical foundations; the group counselor, members, and issues in group counseling. Cooperative course taught by WSU, open to UI students (PEP 518).</td>
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<tr>
<td>523</td>
<td>Topics in Counseling Psychology V</td>
<td>Prereq PhD student in counseling, educational, experimental, or clinical psychology. Clinical and experimental hypnosis, emphasizing applied research and clinical methods. Cooperative course taught by WSU, open to UI students (PEP 541).</td>
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<tr>
<td>525</td>
<td>Counseling Diverse Populations</td>
<td>Prereq CoPsy 512. Research and theories regarding the influence of culture, gender, and lifestyle on counseling processes; application of appropriate assessment/treatment strategies. Cooperative course taught by WSU, open to UI students (PEP 525).</td>
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<tr>
<td>527</td>
<td>Individual Appraisal I</td>
<td>Prereq EdPsy 508, 509. Cognitive assessment of individuals, with an emphasis on the theoretical background and practical skills needed to administer, score, and interpret individual intelligence tests; assessment of learning disabilities, AD/HD, and individual achievement.</td>
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<tr>
<td>528</td>
<td>Individual Appraisal II</td>
<td>Prereq CoPsy 527. Interpretation of representative personality assessment inventories and symptom checklists used in counseling practice; integration of results in psychological reports.</td>
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</tr>
<tr>
<td>529</td>
<td>Counselor Supervision: Theory, Research, and Practice</td>
<td>Prereq admission to Counseling Psychology PhD program. Survey of major theoretical approaches, techniques, and research in models of counselor supervision and training.</td>
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</tr>
<tr>
<td>532</td>
<td>Current Issues in School Counseling II</td>
<td>Prereq CoPsy 531. Additional coverage of contemporary issues of concern to school counselors; comprehensive developmental school programs, school community dynamics, parental involvement, consultation.</td>
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<tr>
<td>533</td>
<td>Master's Internship in Community Counseling V</td>
<td>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. S, F grading.</td>
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<tr>
<td>535</td>
<td>Master's Internship in School Counseling V</td>
<td>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.</td>
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<tr>
<td>537</td>
<td>Professional Development in Counseling Psychology</td>
<td>Prereq admission to Counseling Psychology. Professional development; growth and development, social and cultural foundations, the helping relationship, group dynamics, career, appraisal and research.</td>
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</tr>
<tr>
<td>541</td>
<td>Clinical and Experimental Hypnosis Seminar</td>
<td>Prereq PhD student in counseling, educational, experimental, or clinical psychology. Clinical and experimental hypnosis, emphasizing applied research and clinical methods. Cooperative course taught by WSU, open to UI students (PEP 541).</td>
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</tr>
<tr>
<td>542</td>
<td>Cross-cultural Research in Counseling and Assessment</td>
<td>Prereq PhD student in counseling, educational, experimental, or clinical psychology. Cross-cultural research methods, concepts, and findings in counseling and assessment.</td>
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</tr>
<tr>
<td>552</td>
<td>Doctoral Practicum in Counseling Psychology II</td>
<td>Prereq CoPsy 551, by interview only. Supervised experiences in the application of counseling psychology theory and techniques. S, F grading.</td>
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<tr>
<td>553</td>
<td>Doctoral Practicum in Counseling Psychology III</td>
<td>Prereq admission to Counseling Psychology. Supervised experiences in the application of counseling psychology theory and techniques. S, F grading.</td>
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<tr>
<td>554</td>
<td>Research and Design Applied to PhD Dissertation</td>
<td>Prereq admission to Counseling Psychology. Research and practice; application of counseling psychology theory and techniques. S, F grading.</td>
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<tr>
<td>555</td>
<td>Continuing Counseling ESA Certification V</td>
<td>Prereq Initial Counselor Certification; equivalent of 180 full days of school counselor experience. The requirements for continuing level ESA Counselor Certification. May be repeated for credit; cumulative maximum 6 hours.</td>
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<tr>
<td>556</td>
<td>Advanced Hypnosis and Therapy</td>
<td>Prereq CoPsy 512, or by permission. Advanced training emphasizing mind-body therapies and primary health care including hypnosis, biofeedback, and ego-state therapy. Cooperative course taught by WSU, open to UI students (PEP 562).</td>
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<tr>
<td>557</td>
<td>Seminar in Research in Counseling Psychology</td>
<td>Prereq admission to Counseling Psychology. Recent developments in counseling psychology research and design applied to PhD dissertation proposals. S, F grading.</td>
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<tr>
<td>558</td>
<td>Counseling Psychology Internship V</td>
<td>Prereq CoPsy 512. May be repeated for credit; cumulative maximum 8 hours. Supervised internship experience, individual and group counseling, evaluation, assessment, supervision, and teaching. S, F grading.</td>
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<tr>
<td>560</td>
<td>Special Projects or Independent Study</td>
<td>Variable credit. S, F grading.</td>
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**Educational Administration Courses**

**Ed Ad**

389 Undergraduate Leadership Development
- Basic leadership through skills, styles and conflict management, critical thinking, problem solving, organizational behavior, and leadership issues.

440 Principles of Service and Leadership
- 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
- Prereq admission to Counseling Psychology. May be repeated for credit; cumulative maximum 8 hours.

497 Peer Leadership
- Prereq admission to Counseling Psychology. Development of leadership and interpersonal skills for specific peer leadership and paraprofessional positions. S, F grading.

498 Undergraduate Leadership Practicum
- Prereq admission to Counseling Psychology. Development of and reporting on significant project associated with a leadership position held by the student. S, F grading.

501 Philosophy of Education
- Development of American educational philosophy.

502 Principles of Curriculum Design
- Study of ethical theories, the moral dilemmas of public schooling, and the skills of ethical reasoning; professional code of ethics.

505 Social Context of Education
- 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
- Educational adaptations to the economic and social trends and forces.

510 Improvement of Instruction
- Rec teaching experience. Analysis and evaluation of instructional models with emphasis on information processing; implications for changing teaching style.

514 Basic Principles of Curriculum Design
- Prereq admission to Counseling Psychology. The application of theoretical concepts and approaches in the planning and design of curricula.

515 Curriculum Implementation
- 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.

518 Media Literacy and Educational Technology
3 Rec & L 445 or 446. Relates research and theory of media literacy to instructional resources and current leadership practices; 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.

531 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.

532 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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534 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.

535 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.

536 Introduction to Qualitative Research in Education
3 Prereq EdPsy 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 EdRes 564. 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 Prereq Ed Ad 536. May be repeated for credit; cumulative maximum 6 hours.

560 Student Personnel Services in Higher Education
2 or 3 Philosophy, structure, functions, and organization of student affairs administration.

561 Introduction to College Student Development
3 College student development theory, related research and the application of theory to practice in student affairs work.

562 Professional Issues in Student Affairs Administration
3 Prereq Ed Ad 560, 561. The organization, programs and professional issues related to selected student affairs programs and units.

563 Research in College Student Development
3 Prereq Ed Ad 561. Critique, understand, and apply college 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 Practicum in Higher Education
3 Prereq graduate student with 15 hours of completed course work in education. Selected supervised experiences in general higher education and student affairs settings 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 Diversity in Higher Education
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.

569 Community and Technical Colleges
3 For teachers and administrators. Development and function of community and technical colleges.

570 Community and Technical Colleges
3 College Teaching
3 Rec Ed Ad 570 or 572. Concepts, principles, issues, and procedures in college curriculum development, and college teaching.

571 History of Higher Education
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.
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 V 2 - 3 Prereq T & L 301. For candidates admitted to teacher preparation. Principles and practice of high-quality classroom assessment in the elementary 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 Prereq EdPsy 505. Introductory course for graduate students in applied statistics for the behavioral sciences.
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.
531 School Psychology Professional Practice 3 Prereq admission to school psychology program. Overview of the advocacy role along with legal/ethical issues that psychologist face.
532 Interventionist Role for the School Psychologist 3 Prereq admission to school psychology program. Tools to assist school psychologists to develop and monitor academic and behavioral intervention for students.
533 Assessment of the Exceptional Child 3 Prereq admission to school psychology program. Assessment tools to assist general and special education teachers providing additional academic and cognitive data.
534 Developmental Psychopathology 3 Prereq admission to school psychology program. Impact of developmental psychopathology on a student's ability to function in the general education environment.
535 Multicultural Issues in Assessment 1 Prereq admission to school psychology program. Issues and best practices in the assessment of culturally and ethnically diverse populations.
563 Principles of Research 3 Prereq CoPsy 501, EdRes 562 or c//. Theoretical underpinnings of qualitative research; familiarity with published qualitative research in education; practical research skills.
564 Qualitative Research 3 Prereq EdRes/EdPsy 563. Statistical literacy in educational research; parametric and non-parametric methods.
566 Research Seminar 1 Prereq doctoral student. Presentation and analysis of research; professional development in research presentation. May be repeated for credit; cumulative maximum 4 hours. S,F grading.

Educational Research Courses

EdRes
562 Education, Research and Epistemology 3 Prereq doctoral student. Epistemological assumptions and methodological strategies of research.
563 Principles of Research 3 Prereq CoPsy 501, EdRes 562 or c//. The centrality of literature review and the understanding of methods used in educational research; practice in designing research questions.
564 Qualitative Research 3 Prereq EdRes/EdPsy 563. Theoretical underpinnings of qualitative research; familiarity with published qualitative research in education; practical research skills.
565 Quantitative Research 3 Prereq EdPsy 508, EdRes 563. Statistical literacy in educational research; parametric and non-parametric methods.

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 certified teacher education major; HF 361; T&L 464 or c//; T&L 465 or c//. Basic principles, theory, and practices of public school health education teaching methods for K-12 public school pre-service teachers.
483 Fitness Education Methods 3 (2-3) Prereq certified teacher education major; T&L 464 or c//; T&L 465 or c//. Basic principles, theory, and practices of public school physical education teaching methods for K-12 public school pre-service teachers.
484 Principles of Movement for Individuals with Disabilities Knowledge, understanding, and skills for teaching movement activities to individuals with disabilities.

490 Instructional Practicum V 1-4 Same as MvtSt 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.

Kinesiology Courses

Kin

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.


Movement Studies Courses

MvtSt


262 Human Anatomy 4 (3-3) Comprehensive survey of the structure and organization of the human body; emphasis on skeletal, cardiovascular, nervous, and respiratory systems. Cooperative course taught by WSU, open to UI students (PE 261).

264 Fitness 3 (2-3) Physiological, mechanical, and health-related basis of fitness practices.

313 [M] Behavioral Aspects of Human Movement 3 Prereq certified MvtSt or Ath T major; Psych 105 or Soc 101. Psychological, sociological, and anthropological concepts which relate to human movement and human performance.

314 Philosophy of Human Movement 3 Prereq certified MvtSt major. The philosophical dimensions of physical education, sport, and dance.

362 Biomechanics 3 Prereq certified MvtSt, Ath T, or HF major; junior standing; MvtSt 262 or Biol 315; math proficiency requirement. Anatomical and mechanical influences on human movement.

380 Introduction to Exercise Physiology 3 Prereq certified MvtSt, Ath T, Biol, or HF major; Biol 251; junior standing. Introduction to exercise physiology as it relates to sport, physical training, and performance.

390 Practicum in Coaching 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. Combined maximum for MvtSt 300-level practicum courses 8 hours. S, F grading.

392 Practicum in Physical Education 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. Combined maximum for MvtSt 300-level practicum courses 8 hours. S, F grading.

415 Assessment 3 (2-3) Prereq certified MvtSt, Ath T, or HF major; Math GER, senior standing. Measurement and evaluation for human performance.

461 [M] Motor Skill Acquisition 3 Prereq certified MvtSt, Ath T, or HF major; Biol 251; senior standing; completion of writing portfolio. Motor learning and motor control areas; neural mechanisms, practice, feedback, retention, and transfer application of theoretical concepts.

475 Marginality and Movement 3 Understanding of the current status of women’s sports participation in the U.S. and of the woman participant herself.

481 Analysis of Human Movement 3 (2-3) Prereq certified MvtSt or Ath T major; MvtSt 362; senior standing. Application of biomechanical principles for movement analysis.

490 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

496 Special Topics 1 May be repeated for credit; cumulative maximum 4 hours. Physical education, leisure, recreation, dance, health sports.

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

Sport Management Courses

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 sports 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.

SpMgt

276 Introduction of Sport Management 3 Prereq C or better in Engl 101, ComSt 102, and [N] GER; 2.5 cumulative gpa. Principles and concepts in sport management; overview of sport industries and career opportunities. Not open to seniors or first semester freshmen.

290 Sport Programs 3 (2-3) Prereq C or better in Engl 101, ComSt 102, and [N] GER; 2.5 cumulative gpa. Philosophies and program content of public/private sport programs; laboratory experiences in school, college, and community sport programs.

365 Ethics and Moral Reasoning in Sport 3 Prereq certified SpMgt major or minor; SpMgt 276; junior standing. Understanding and application of ethical theory and principles of moral reasoning to the analysis of issues and dilemmas in sport.

367 [M] Sport in American Society 3 Prereq certified SpMgt major or minor; 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.

374 Sport Finance 3 Prereq certified SpMgt major or minor; SpMgt 276; Acctg 230; junior standing. Introduction to financial analysis, budgeting and revenue acquisition for both “for profit” and “not for profit” sport organizations.

377 Legal Aspects of Sport 3 Prereq certified SpMgt major, minor, or Ath T major; SpMgt 276; junior standing. Legal aspects of the supervision, management and business of sport.

394 Practicum in Sport Management 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.

399 Professional Work Experience V 1 (0-3) to 6 (0-18) Prereq sophmore standing, by interview only. Paid or volunteer, off-campus work experience with a sport organization. S, F grading.

464 Sport Marketing 3 Prereq certified SpMgt major; SpMgt 265. An examination of sport as a consumer product and as a medium by which to sell consumer products.


488 Current Trends in Sport Management 2 Prereq certified SpMgt major; SpMgt 276; SpMgt 377; senior standing. Current trends and issues; research resources; professional presentations.

489 Theory and Application in Sports Event Management 3 Prereq certified SpMgt major; SpMgt 276; SpMgt 377; senior standing. Investigation and application of the components of the sport management profession.

490 Internship Seminar 1 Prereq certified SpMgt major; SpMgt 265; SpMgt 377; senior standing; by interview only. Overview of policies and requirements; guidance through site selection and application process; communication skills for the business/sport environment. S, F grading.

491 Internship V 10-12 Prereq certified SpMgt major; SpMgt 488; SpMgt 490. By interview only. Supervised practicum in agency or business. S, F grading.

496 Special Topics V 1-2 May be repeated for credit; cumulative maximum 6 hours. Special topics in sports studies.

497 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Special topics in sports studies.

498 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Special topics in sports studies.
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 (BSCptE), or Computer Science (BSCS), Bachelor of Arts in Computer Science (BACS), Master of Science in Electrical Engineering (MSEE) or Computer Engineering (MScptE), or Computer Science (MSCS), and Doctor of Philosophy. The programs leading to the BSEE and BSCptE 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 for 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 specialty. 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/computer tools necessary for engineering practices.

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 multi-disciplinary 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, and computer networking. Option area course sequences allow students to specialize in specific areas such as computer graphics, computer networking, computer systems software, software engineering, or computer engineering.
We expect our graduating students will be able to: 1) apply knowledge of computer science and mathematics to the modeling, design and development of software systems of various scales and complexity; 2) analyze a problem and identify and define the computing requirements appropriate to its solution; 3) design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs; 4) use current techniques, skills, and tools necessary for computing practice; 5) analyze the impact of computing on individuals, organizations, and society, including ethical, legal, security, and global policy issues based on an understanding of professional, ethical and social responsibilities; 6) communicate effectively; and 7) function effectively on teams to accomplish a common goal. Graduates will understand the importance of life-long learning in the field of computer science.

**Certification**

Students interested in majoring in any of the school’s bachelor degree programs should apply for certification as early as possible in their studies after completion of the respective courses listed under the schedule of studies. 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.

**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 http://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 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, COMPUTER SCIENCE REQUIREMENTS (122 HOURS)**

Students may apply for certification into the Bachelor of Arts in Computer Science degree program after completion of Cpt S 121, 122, 223; EE 214; Math 171, 172, 216; Phil 201. Math 171, 172 may be substituted for Math 201, 202, 216; Phil 201. 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.

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<td>Cpt S 122</td>
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<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 or GenEd 111 [A] (GER)</td>
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<td>Math 202 [N] (GER)</td>
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<td>Math 201</td>
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<td>Phil 201 [H] (GER)</td>
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<td>Social Sciences and Diversity [S,K] [D] (GER)</td>
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<td>Cpt S 260</td>
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<td>Lab Sciences [B,P] (GER)</td>
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<td>Cpt S 322 [M]</td>
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<td>Advanced Cpt S Elective</td>
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<td>Cpt S 355</td>
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<td>Cpt S 323</td>
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<td>Lab Sciences [B,P] (GER)</td>
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<td>Minor Electives</td>
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<td>Science Elective [B,P,Q] (GER)</td>
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<td>Advanced Cpt S Elective</td>
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<td>Cpt S 422 [M]</td>
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<td>Engl 101 [W] (GER)</td>
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<td>Cpt S 223</td>
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<td>Biological Sciences [B] (GER)</td>
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<td>Cpt S 224</td>
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<td>GenEd 110 [A] or 111 [A] (GER)</td>
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<td>Cpt S 260</td>
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<td>Math 220</td>
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<tr>
<td>Phys 201 [P] (GER)</td>
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<td>Phys 202 [P] (GER)</td>
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<tr>
<td>Social Sciences and Diversity [S,K] [D] (GER)</td>
<td>3</td>
<td>Complete Writing Portfolio</td>
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1. Either math sequence below will satisfy the math requirement for this degree. Sequence B will allow a broader selection of advanced computer science electives. The course work in mathematics must total at least sixteen semester hours (including Math 216). Sequence A: Math 201,202,212, and a math elective chosen from the following list: Math 364, 416, or Stat 412. Sequence B: Math 171, 172, 220, and Math 212, or Math 360.
2. Soc 101 recommended.
3. Science electives must include a year-long sequence (two semester including a laboratory in each semester) and two additional science courses, one of which must have a laboratory component.
4. Acceptable science courses are those designated [P], [B], or [Q]; courses with a lab component have an (L) designation in WSU’s GER system. At least one science course from each of the [B] and [P] categories is required.
5. Elective credits must include a minor program.
6. If a minor in a science or engineering discipline is contemplated, Math Sequence B should be taken (see note 1).
7. Advanced computer science electives must be chosen to contain advanced work in at least three separate computer science areas, in order to comply with CSAC/CSAB guidelines. Eligible areas and courses include: Theory: Cpt S 317, 450, 453 (453 requires Math 220); Scientific Computing: Cpt S 330, 430 (courses require Math 172); Programming Languages: Cpt S 355, 452; Hardware Systems: Cpt S 360, 460, 465, 466, E E 324, 424; Graphics and Multimedia: Cpt S 442, 443, 445, 446, Math 418 (Cpt S 442 requires Math 171; Cpt S 445 requires Math 171, 220, and 273; Math 418 requires Math 171, 172); Software Systems: Cpt S 425, 427, 451, 455; Intelligent Systems: Cpt S 440, 434; Software Engineering: Cpt S 423. Selected offerings of Cpt S 483 could fit in one or more of the categories above.

8. Students interested in majoring in any of the Electrical Engineering and Computer Science for specific information.
Electrical Engineering and Computer Science

**Third Year**

**First Term**
- Cpt S 322 [M] 3
- Cpt S 355 3
- Engl 402 [W] or 403 [W] (GER) 3
- Math 273 or 301 2 or 3
- Stat 360 3

**Second Term**
- Cpt S 317 3
- Cpt S 323 3
- Cpt S 360 4
- Cpt S Option Courses1 6

**Fourth Year**

**First Term**
- Cpt S 422 [M] 3
- Cpt S 450 3
- Cpt S 483 3
- Cpt S Option Courses3 3
- Intercultural Studies [J,G,K] (GER) 3

**Second Term**
- Cpt S 402 3
- Cpt S 423 3
- Cpt S 460 3
- Cpt S Option Course3 3
- Tier III Humanities or Social Sciences Course [T] (GER) 3

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1 EconS 101 or EconS 102 recommended.
2 Soc 101 recommended.
3 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 (129 HOURS)**

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, 273; Phys 201, 202.

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 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 4
- GenEd 110 or 111 [A] (GER) 3
- Math 220 2

**Second Term**
- Cpt S 251 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 172 4
- Math 273 2
- Phys 202 [P] (GER) 4

**Third Year**

**First Term**
- E E 234 4
- E E 261 4
- E E 262 1
- GenEd 110 or 111 [A] (GER) 3
- Intercultural Studies [J,G,K] (GER) 3
- Math 315 3
- Complete Writing Portfolio

**Second Term**
- E E 331 3
- E E 324 4
- E E 331 3
- Engl 402 [W] or 403 [W] (GER) 3

**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
- EconS 101 [S] or EconS 102 [S] (GER) 3

**Second Term**
- Approved Cpt E Technical Electives2 6
- Cpt S 460 or 466 3
- E E 416 [M] 3
- Tier III Humanities or Social Sciences Course [T] (GER) 3

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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 (126 HOURS)**

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 251; E E 221; Math 171, 172, 273; Phys 201, 202.

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
- Engl 101 [W] (GER) 3
- Engr 120 2
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 171 [N] (GER) 4

**Second Term**
- Cpt S 251 3
- 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
- E E 214 3
- E E 221 2
- Math 273 2
- Phys 202 [P] (GER) 4

**Second Term**
- E E 234 3
- E E 261 3
- E E 262 1
- EconS 101 [S] or EconS 102 [S] (GER) 3
- Engineering Science I1 3
- Math 315 3
- Complete Writing Portfolio

**Third Year**

**First Term**
- Arts & Humanities [H,G] (GER) 3
- E E 311 3
- E E 321 3
- E E 331 3
- E E 352 3
- Stat/Math 360 3

**Second Term**
- E E 341 3
- E E 351 3
- E E 361 3
- E E 362 [M]1 2
- Engineering Science II1 3
- Engl 402 [W] or 403 [W] (GER)2 3

**Fourth Year**

**First Term**
- E E 415 2
- E E 489 3
- Intercultural Studies [J,G,K] (GER) 3
- Probability and Stat Elective3 3
- Technical Electives4 3

**Second Term**
- E E 416 [M] 3
- Technical Electives4 9
- Tier III Humanities or Social Sciences Course [T] (GER) 3

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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 Select from E E 432, 451, 491 or 496.
4 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**

18 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
18 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

111 Introduction to Algorithmic Problem Solving 3 (2-3) Elementary algorithmic problem solving, computational models, sequential, iterative and conditional operations, parameterized procedures, array and list structures and basic efficiency analysis.

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 Skills and literacy course. Comprehensive programming practice using contemporary instances of the BASIC programming language.

203 FORTRAN Programming 2 Prereq Math 171 or c//. Skills and literacy course. Comprehensive programming practice using FORTRAN.

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. 223 or equivalent Debugging tools, scripting languages, UNIX programming tools, introduction to graphical user interface programming.

251 C Programming Language 3 Prereq Math 171 or c//. Skills and literacy course. Comprehensive programming practice using C.


253 Java Programming Language 3 Prereq Cpt S 121, 153, 203, or 251. Skills and literacy course. Comprehensive programming practice using Java.

260 Introduction to Computer Architecture 3 Prereq Cpt S 233 or c//. Computer systems architecture: logic, data representation, assembly language, memory organization and trends.

283 Topics in Computer Skills and Literacy V 1-3 May be repeated for credit; cumulative maximum 9 hours. Skills and literacy course. Current topics in computer skill development and computer literacy.

302 Unix System Administration 3 (2-3) Prereq Cpt S 121. Skills and literacy course. 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.

323 Software Design 3 Prereq Cpt S 223; Cpt S 322 or c//. Practical aspects of software design and implementation using object-oriented, aspect-oriented and procedural programming.

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. Skills and literacy course. 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; Cpt S 323. Dependable software systems; software verification and validation, testing; CASE environments; software management and evolution.

423 Software Design Project II 3 (1-6) Prereq Cpt S 421; 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, 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 mechanism; encryption technology, formal models, policy and ethical implications. Credit not granted for both Cpt S 427 and 527.

430 Numerical Analysis 3 Prereq FORTRAN, C, or other programming language; Math 315. Same as Math 448. Credit not granted for both Cpt S 430 and 530.

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.

438 Scientific Visualization 3 Prereq Math 172; Cpt S 223; Cpt S 224. Data taxonomy, sampling, plotting, using and extending a visualization package, designing visualization and domain-specific techniques. Credit not granted for both Cpt S 438 and 538.
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 404/504).

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.

446 Distributed Systems Concepts and Programming 3 Prereq Cpt S 360. Concepts of distributed systems; naming, security, networking, replication, synchronization, quality of service; programming middleware. Credit not granted for both Cpt S 464 and 564. Cooperative course taught by WSU, open to UI students (CS 404/504).

447 System Software 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).

451 Introduction to Database Systems 3 (2-3) Prereq E E 315; engineering consortium students only. Engineering and design of system software in C and assembly, including libraries, executives, and I/O; use of debugger and emulators.

452 Compiler Design 3 Prereq Cpt S 223, 224. Design of lexical analyzers, syntactic analyzers, intermediate code generators, code optimizers and object code generators. Cooperative course taught jointly by WSU and UI (CS 445).

456 Secure Wireless Networks 3 Prereq Cpt S/EE 453 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.

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).
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.


552 Secure Wireless Networks 3 Prereq Cpt S 453; additional requirements. Credit not granted for both Cpt S 452 and 553.

553 Graph Theory 3 Prereq Math 220; graduate standing. Graduate-level counterpart of Cpt S 453; additional requirements. Credit not granted for both Cpt S 452 and 553.

554 Computer Communication Networks 3 Prereq Stat 443. Same as E E 555.

555 Computer Communication Networks 3 Prereq Cpt S 455 or 555. ATM networks, optical WDM networks, and wireless/mobile networks; access, transport, and routing protocols.

556 Mobile Computing in Wireless Networks 3 Prereq Cpt S 452. Structure of multiprogramming and multiprocessing; efficient allocation of systems resources; design implementation and performance measurement.

557 Advanced Computer Networks 3 Prereq Cpt S 455 or 555. ATM networks, optical WDM networks, and wireless/mobile networks; access, transport, and routing protocols.

558 Operating Systems 3 Prereq Cpt S 460. Structure of multiprogramming and multiprocessing; efficient allocation of systems resources; design implementation and performance measurement.

559 Computer Architecture 3 Prereq E E 424. Parallel and distributed processors; multiprocessors; interconnection topologies; language-directed architecture; special-purpose architecture.

560 Operating Systems 3 Prereq Cpt S 460. Structure of multiprogramming and multiprocessing; efficient allocation of systems resources; design implementation and performance measurement.

561 Fault Tolerant Computer Systems 3 Prereq Cpt S 460; Cpt S 464 or 564. Fault tolerance aspects involved in design and evaluation of systems; methods of detection and recovery; multicast, middleware, and reconfiguration.

562 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).

563 Embedded Systems 3 (2-3) Prereq Cpt S 360; graduate standing. Graduate-level counterpart of Cpt S 466; additional requirements. Credit not granted for both Cpt S 466 and 566.

564 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.

565 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.

566 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.

567 Advanced Topics in Computer Science 3 May be repeated for credit.

568 Directed Study in Computer Science V 1-3 May be repeated for credit; cumulative maximum 6 hours. Current topics in computer science.

569 Computer Science Seminar 1 May be repeated for credit; cumulative maximum 3 hours.

570 Special Projects or Independent Study 1-3 May be repeated for credit; cumulative maximum 6 hours. Current topics in computer science.

571 Master’s Research, Thesis, and/or Examination 1 Variable credit S, F grading.

572 Mathematics for Electrical Engineering 3 Prereq E E 214. Design and analysis of synchronous sequential machines; module and bit-slice devices; alternative architectures; system-level design; asynchronous sequential machines.

574 Fundamentals of Digital Systems 4 (3-3) Prereq E E 214. Design and analysis of combinational logic circuits with exposure to modern methods and design tools; introduction to sequential logic circuits.

575 Numerical Computing for Engineers 3 Prereq Math 220. Solutions to engineering problems using modern software tools such as Matlab.

576 Electrical Engineering Courses

577 Electrical Circuits Laboratory I 1 (0-3) Prereq E E 221; E E 261 or c//. Electrical instruments; laboratory applications of electric laws; transient and steady-state responses of electrical circuits.

578 Introduction to Electrical Circuits 2 Prereq Math 315 or c//. Basic DC and AC circuits.

579 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.

580 Electronics Laboratory I 1 (0-3) Prereq E E 321 or c//. Lab exercises in the implementation and analysis of electronic circuits.

581 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.

582 Microprocessor Laboratory 1 (0-3) Prereq admission to engineering consortium program, E E 315 or c//. Lab exercises in microprocessor systems.

583 Electrical Circuits II 3 Prereq E E 261. State space analysis, Laplace transforms, network functions, frequency response, Fourier series, two-ports, energy and passivity.

584 Electrical Circuits Laboratory II 1 (0-3) Prereq admission to engineering consortium program; E E 321 or c//. Lab exercises in the time and frequency-domain analysis of electrical circuits.


586 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.

587 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.

588 Electromagnetic Fields and Waves 3 Prereq E E 261, 262; Math 315; Phys 202; certification not required. Fundamentals of transmission lines, electrostatics, magnetostatics, and Maxwell’s Equations.

589 Computer Architecture 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; Stat 360 or 443 or c/. Discrete and continuous-time signals, LTI systems, convolution, sampling, Fourier transform, Z-transform, filtering, DFT, amplitude and frequency modulation.

351 Distributed Parameter Systems 3 Prereq E E 331. Plane waves, waveguides, resonators, antennas, numerical methods.

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.


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; completion of all required 300-level E E and Cpt S courses. 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 presentations 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.

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; E E 351; Stat 360 or 443. System and propagation issues for wireless telecommunications; cellular, PCS, microwave, and satellite system analysis, design, measurement, and testing.

434 ASIC and Digital Systems Design 3 Prereq E E 234, 321, 324. Application Specific Integrated Circuit and Digital System Design methods, semi-custom, full-custom, and field-programmable devices; digital system architectures, electronics, and tests.

451 Digital Communication Systems 3 Prereq E E 341, Stat 360 or 443. Digital communication techniques; performance of digital communication systems in noise; matched filter detection; quantization. Cooperative course taught jointly by WSU and UI (EE 455).

455 Introduction to Computer Networks 3 Prereq Cpt S 360. Same as Cpt S 453.

461 Digital Sound Synthesis and Processing 3 Prereq EE 321 or Cpt S 317; B- or better in Cpt S 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.

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 (EE 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.
501 Solid State Direct Energy Conversion 3
PreReq E E 496. Analysis of homojunction and heterojunction solar cells.

511 Protection of Power Systems I 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 EE 341. Devices and classical network synthesis, two-port network theory, filters, active filters.

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 (EE 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.

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.

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).

530 Digital Signal Processing I 3

531 Energy Management and Planning 3
Available energy resources; energy issues, economic analysis of energy alternatives; energy future.

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.

536 Numerical Solutions to EM Problems II 3

541 Digital Control Systems I 3
PreReq E E 441. State space approach, SISO, optimal control, state estimators, stochastic systems, state estimation in the presence of noise.

544 Neural Computation 3
PreReq Math 315, Stat 443. 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
PreReq Cpt S 460; Cpt S 464 or 564. Same as Cpt S 562.

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 standing grade; E E 311; 351 or c//; 489 or c//; c// in 477 for capstone design credit. Graduate-level counterpart of E E 476; additional requirements. Credit not granted for both E E 476 and 576.

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.

595 Directed Study in Electrical Engineering
V 1-3 May be repeated for credit. Current topics in electrical engineering.

596 Advanced Analog Integrated Circuits 3
PreReq E E 476, 477. MOS and BiCMOS technologies; MOS and BiCMOS operational amplifiers; A/D, D/A converters; switched-capacitor filters; continuous-time filters. Cooperative course taught by WSU, open to UI students (EE 515).

597 RF Mosfet Modeling 3
PreReq E E 496. Graduate-level counterpart of E E 497; additional requirements. Credit not granted for both E E 497 and 597.

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.

Engineering

www.cea.wsu.edu
Dana Hall 146
509-335-5593
Dean, C. S. Claiborn.

The College of Engineering and Architecture offers degree programs through its School of Architecture and Construction Management, School of Chemical Engineering and Bioengineering, Department of Civil and Environmental Engineering, School of Electrical Engineering and Computer Science and School of Mechanical and Materials Engineering. These degree programs are described under each unit's separate description in the catalog. In addition, the college offers one course that is
common to several degree program curricula and a minor that is available to all non-engineering majors at the university. The minor provides students with a background about how engineering can be applied to real-world problems.

**Minors**

**Minor in Engineering**

The College of Engineering and Architecture offers a minor in engineering. The minor in engineering requires 17 hours, 9 of which must be upper-division. The requirements are: 8 hours from Engr 120 or M E 103 or MSE 110; C E 211, Ch E 201, M E 212, E E 214, 361, 262; and 9 hours from C E 315, 316, 463, E E 304, 311, M E 301, 313.

The engineering minor is not open to engineering majors. Please contact the College of Engineering and Architecture Undergraduate Programs and Students Services office at 509-335-0348 or ceainfo@wsu.edu for more information.

**Description of Courses**

**Engineering Courses**

Engr

120 (Arch/B E/B Sys E/C E/ Ch E/Cpt S/E M E/MSE 120) Innovation in Design

2 Introduction to engineering disciplines, problem solving, design teamwork and ethics.

**School of Engineering and Computer Science, WSU Vancouver**

[www.vancouver.wsu.edu/encs](http://www.vancouver.wsu.edu/encs)

**VELS 130, Vancouver Campus 509-546-9639**

Associate Professor and Director H. Gurocak; Associate Professor C. R. Lung; Assistant Professors, X. Chen, W. O. Cochran, G. Fletcher, A. Jokar, D. Kim, O. Pilskalns, S.D. Solovitz, W. Song, S. Wallace, W. Xue; Instructors: S. Mocas, H. Moosavi-Rad; Adjunct Professors, R. Ray, H. Talley, K. Wade, W. Wreggit.

The School of Engineering and Computer Science (ENCS) is an academic unit of the WSU College of Engineering and Architecture that houses the engineering and computer science programs located at WSU Vancouver.

The undergraduate curricula provide students with a solid foundation upon which they can build to meet the challenges associated with their individual career paths and to adapt to the rapidly changing technologies. We emphasize the fundamentals and give students significant choice in designing their academic agenda to meet their career goals. In Computer Science, students can choose from a variety of courses in areas such as intelligent systems, software and hardware systems, graphics and multimedia. In Mechanical Engineering, students can customize their study through three option areas: (1) Micro/nanotechnology; (2) Design and Manufacturing; and (3) Mechatronics (robotics and automation). Effective writing, speaking and presentation skills, and ethics are also emphasized as important attributes of our graduates.

The School of ENCS is located at Washington State University's campus in Vancouver Washington and is intended to directly serve students in the southwest Washington region. The programs were established and designed to prepare students to satisfy the needs of regional companies and organizations for engineering and computing professionals. The curricula also prepare students for continued education at the graduate level in computer science and mechanical engineering.

The School offers courses of study leading to the degrees of Bachelor of Science in Mechanical Engineering (BSME), Bachelor of Science in Computer Science (BSCS), Master of Science in Mechanical Engineering (MSME), and Master of Science in Computer Science (MSCS).

**Computer Science**

It is the objective of the computer science program to provide a broad education in the science and application of computing. Students are expected to gain proficiency in the design and implementation of software systems, as well as the application of the theory of computing to that process. In addition, all students will develop a background in the hardware and mathematics that provide the basis for science and computing. The degree program also requires students to obtain a background in other scientific disciplines and to develop effective communication skills.

**Educational Objectives**

As a graduate of the WSU Vancouver Computer Science program:

1. You will be a knowledgeable and skilled computer scientist. Each graduate’s knowledge will span the fundamental principles of computer science and include an understanding of several advanced specialty areas. Graduates will have practical experience with tools, languages and systems which are representative of those used by regional industries. Analytical problem solving and well-crafted software solutions will be hallmarks of our graduates.

2. You will exhibit the workplace behaviors expected by employers. Employers can expect our graduates to communicate clearly, to maintain task commitment, to stay organized, and to overcome obstacles, while working individually or in a team. Graduates will demonstrate these behaviors in their jobs and careers.

3. You will be committed to high standards of professionalism. Graduates will embrace a professional code of ethics in their practice of computer science. They will recognize the social impact of their work and respect the intellectual property of others.

4. You will adapt to the changing landscape of computer science. Effective computer scientists must regularly update their knowledge and skills. WSU Vancouver graduates augment their knowledge and develop new skills with individual study, classes and other techniques. Some graduates will pursue advanced degrees; others will take advantage of professional development opportunities.

**Program Outcomes**

Graduates of WSU Vancouver Computer Science program will possess:

A. Firm foundation and knowledge of mathematics, statistics, science, and computing principles, and the ability to apply this knowledge to solving problems.

B. Foundational knowledge of computer engineering and the methods by which computers are constructed and organized.

C. Ability to design, implement, test and evaluate a computing system, software component, or algorithm to meet required needs and imposed constraints.

D. Ability to function on multi-disciplinary teams.

E. Ability to identify and analyze problems, and synthesize computational solutions.

F. Understanding of professional and ethical responsibility.

G. Ability to communicate effectively in writing, orally, and visually.

H. Ability to understand the global and societal impacts of computing technology.

1. Recognition of the need for, and an ability to engage in, life-long learning and an ability to adapt to changes and advancements in the field of computer science.

J. Knowledge of contemporary problems and technologies related to computer science.

K. Ability to use modern software development tools and languages necessary for professional practice.

**Mechanical Engineering**

Mechanical Engineering provides an excellent education for today’s technological world. Mechanical engineers are the backbone of the engineering profession and work in every industry—from transportation, communications, and electronics to bioengineering, commerce, and manufacturing—in business, government, and universities. Mechanical engineers work with motion, energy, force and are involved with manufacturing the products they design. They develop robotic systems, design products, computer control systems for machinery, commercial jets, instruments for medicine, high-performance sporting equipment, and supervise manufacturing operations.

Our 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 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 controls, automation and robotics.

Educational Objectives

The goal of our program is to prepare our graduates for successful professional practice and advanced studies by providing a broad education in mechanical engineering and by offering the opportunity to deepen their technical understanding in a particular concentration area of related technical electives.

Our graduates will:

1. Apply technical knowledge and skills as mechanical engineers to provide optimal solutions in industrial and government organizations.
2. Utilize effective communication, team, and project management skills to work productively within their professions and communities.
3. Conduct themselves as responsible professionals making contributions in technology for the greater benefit of society.
4. Pursue professional development and/or graduate studies to meet the challenging demands and increasing responsibilities of a successful career.

Program Outcomes

Our students will have:

A. Knowledge of mathematics, science and engineering principles and the ability to apply this knowledge for solving problems.
B. Ability to design and conduct experiments as well as to analyze and interpret data.
C. Ability to design and realize thermal and mechanical components, systems, or processes to meet desired needs and realistic constraints.
D. Ability to function on multidisciplinary teams.
E. Ability to identify, formulate and solve problems encountered in the practice of mechanical engineering.
F. Understanding of professional and ethical responsibility.
G. Ability to communicate effectively.
H. Ability to understand the impact of engineering solutions in a global, economic, environmental and societal context.
I. Recognition of the need for, and an ability to engage in life-long learning.
J. Knowledge of contemporary issues.
K. Ability to use the techniques, skills and modern engineering tools necessary for mechanical engineering practice.

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 following their application for certification.

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. Additional details regarding certification in the major are available from the School of ENCS Academic Coordinator.

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 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 ENCS 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 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.

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 minimum 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. Our laboratories are equipped with state-of-the-art equipment worth more than $4 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.

Schedules of Studies

Students must complete 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, COMPUTER SCIENCE REQUIREMENTS (VANCOUVER ONLY) (122 HOURS)

Students who have completed at least 30 semester hours of course work and who have completed CS 121, 122, 216, 214, 223; Math 171, 172; Phil 201; 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.

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.

First Year

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CS 121</td>
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<tr>
<td>GE 101 [E]</td>
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</tr>
<tr>
<td>GE 110 [A]</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N]</td>
<td>4</td>
</tr>
<tr>
<td>Phil 201 [H]</td>
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Second Term

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CS 122</td>
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<tr>
<td>CS 216</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W]</td>
<td>3</td>
</tr>
<tr>
<td>GE 111 [A]</td>
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<tr>
<td>Math 172</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>CS 214</td>
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<tr>
<td>CS 223</td>
<td>3</td>
</tr>
<tr>
<td>EconS 101 [S]</td>
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<tr>
<td>Math 220</td>
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<tr>
<td>Phys 201 [P]</td>
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Second Term

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<th>Course</th>
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<td>Biological Science [B]</td>
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<tr>
<td>CS 224</td>
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<td>CS 234</td>
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</tr>
<tr>
<td>Math 273</td>
<td>2</td>
</tr>
<tr>
<td>Phys 202 [P]</td>
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Complete Writing Portfolio

Third Year

First Term

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<th>Course</th>
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<tbody>
<tr>
<td>CS 317</td>
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<tr>
<td>CS 320 [M]</td>
<td>3</td>
</tr>
<tr>
<td>CS Option Course</td>
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</table>
### Bachelor of Science, Mechanical Engineering Requirements (Vancouver Only) (128 Hours)

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-division mechanical engineering courses is restricted to certified majors or minors in mechanical engineering.

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.

#### First Year

| Language & Humanities [H, G] (GER) | 3 |
| Science | 3 |
| Computer Science | 3 |
| Math | 3 |

#### Second Year

| Arts & Humanities | 3 |
| Science | 3 |
| Computer Science | 2 |
| Math | 4 |
| Economics | 3 |

#### Third Year

| Arts & Humanities or Social Science | 3 |
| Science | 3 |
| Computer Science | 3 |

#### Fourth Year

| Arts & Humanities or Social Science | 3 |
| Science | 3 |
| Computer Science | 3 |

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### Computer Science

The minor in computer science consists of 20 credit hours that must include CS 121, 122, 223 and three 300-400 level CS courses, excluding CS 402. All prerequisites for minor courses must be met. All courses must be completed with a grade of C or better. The minor course of study must be pre-approved by the computer science academic coordinator.

### Description of Courses

#### Computer Science - Vancouver Courses

Enrollment in 400-level computer science courses is restricted to certified minors or majors in computer science and to juniors and seniors officially certified in other degree programs requiring these computer science courses.

#### 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.

216 **Discrete Structures** 3 Prereq Math 107; Phil 201; a programming course. Same as Math 216.

223 **Advanced Data Structures** 3 Prereq CS 122; CS 216 or equivalent. Advanced data structures, object oriented programming concepts, concurrency, and program design principles.

224 **Programming Tools** 2 Prereq CS 122. Debugging tools, scripting languages, UNIX programming tools, introduction to graphical user interface programming.

234 **Microprocessor Systems** 3 (2-3) Prereq CS 122; CS 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, or 251. Comprehensive programming practice using Java.

317 **Automata and Formal Languages** 3 Prereq CS 122; CS 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; CS 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; Math 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; CS 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; CS 224; CS 234. 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 320. 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 216; CS 360. Computer security concepts, models and mechanism; 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 320; Stat 360 or Math 212. Search as a problem-solving strategy; basic issues of knowledge representation; introduction to machine learning techniques.

442 Computer Graphics 3 Prereq CS 223; CS 224; Math 220. Raster operations; transformations and viewing; geometric modeling; visibility and shading; color. Credit not granted for both CS 442 and 542.

443 Human-Computer 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.

447 Computer Game Design 3 Prereq CS 223; CS 420 or c//. Design and implementation of computer games. Credit not granted for both CS 447 and 547.

450 Design and Analysis of Algorithms 3 Prereq CS 223; CS 517, 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; CS 224. Introduction to database concepts, data models, database languages, database design, implementation issues.

452 Compiler Design 3 Prereq CS 317; CS 355. Design of lexical analyzers, syntactic analyzers, intermediate code generators, code optimizers and object code generators.

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. Credit not granted for both CS 466 and 566.

471 Professional Programming Problems and Practice 3 Prereq CS 320; CS 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 May be repeated for credit. Prereq CS 320. 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 CS 224; CS 340; 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 Computer Science Seminar 1 Faculty research interests, departmental computer systems, computer science research, report preparation. S, F grading.

516 Algorithms 3 Prereq CS 450. Discrete structures, automata, formal languages, recursive functions, algorithms, computability, and complexity.

521 Software Engineering Analysis 3 Prereq CS 320. 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.

522 Software Reuse 3 Prereq CS 420. Basic principles of software reuse, compositional and generative reuse, with specific topics selected from current literature, reverse engineering.

527 Computer Security 3 CS 216; CS 360. Graduate-level counterpart of CS 427; additional requirements. Credit not granted for both CS 427 and 527.

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 542.

547 Computer Game Design 3 Prereq CS 223; CS 420 or c//. Graduate-level counterpart of CS 447; additional requirements. Credit not granted for both CS 447 and 547.

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.

Mech

101 (120) Introduction to Mechanical Engineering 2 Introduction to mechanical engineering profession, engineering problem solving, computers in engineering design methods.

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.

211 Statics 3 Prereq Math 172 or c/c; Phys 201 or c/c. Static equilibrium analysis of particles and rigid bodies, free-body diagrams, moment diagrams, friction, center of gravity, moments of inertia.

212 Dynamics 3 Prereq Mech 211. Kinematics and kinetics of particles and rigid bodies; Newton's second law of motion; work-energy concept; impulse and momentum.

215 Mechanics of Materials 3 Prereq Mech 211. Concepts of stress, strain, and their relationships; axial, torsion, bending, and combined stresses; properties of materials; columns and strain energy method.

301 Thermodynamics 3 Prereq 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 (2-3) Prereq certified Mech major; Mech 212; Mech 301 or c/c. Physical properties, fluid statics, laminar and turbulent flow, impulse and momentum, similitude, pipe flow, boundary layers, lift, drag and measurement techniques, fluid experiments.

304 Instrumentation and Measurement 3 (2-3) Prereq CS 251; Math 220 or c/c; Math 315 or c/c; Phys 202. Introduction to 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/c. Structure of materials, phase equilibrium, phase transformations, mechanical failure, and mechanical properties; materials testing laboratory.

310 Introduction to Design and Manufacturing 4 (3-3) Prereq certified Mech major; Mech 103; Mech 309. Basic mechanical engineering drawing; shaping and non-shaping manufacturing processes; exposure to 3D-CAD; manufacturing processes laboratory.

315 Engineering Analysis 3 Prereq CS 251, Math 220; Math 315; major in engineering. Analysis and modeling of engineering problems utilizing numerical and mathematical techniques and computers.

314 [M] Design Process 3 Prereq Mech 215. Design process, design projects, engineering economics, and ergonomics; extensive use of CAD.

348 Dynamics Systems and Control 3 Prereq certified Mech major; Mech 212; Mech 313. Modeling and analysis of dynamic systems, including mechanical, electrical, fluid, and thermal systems. Fundamentals of vibration analysis, control systems.

402 Thermal Systems Design 3 (2-3) Prereq Mech 404. Design and analysis of thermal-fluid systems using principles of thermodynamics, fluid mechanics, and heat transfer, thermal experiments.

404 Heat Transfer 3 Prereq Math 220; Math 315; Mech 301; Mech 303 or c/c. Fundamentals of conduction, convection, and radiation heat transfer; analytical, numerical, and empirical modeling for solids, liquids, and gases.

405 Introduction to Microcontrollers 3 Prereq Mech 304. Microcontroller architecture, microcontroller programming, mechanical system design with embedded microcontrollers.

414 Machine Design 3 Prereq certified Mech major; Mech 215; Mech 309; Mech 314. Combined stresses, static and fatigue failure theory and analysis, design and selection of machine elements such as shafts, fasteners, springs, gears and bearings.

416 [M] Mechanical Systems Design I 2 Prereq Mech 414 or c/c; senior standing; consent of academic coordinator. First term of the year-long capstone design; integrative design in mechanical engineering; multidisciplinary design project considering technical and nontechnical contexts.

417 Mechanical Systems Design II 3 Prereq Mech 416, senior standing; consent of academic coordinator. Second term of the year-long capstone design; integrative design in mechanical engineering; multidisciplinary design project considering technical and nontechnical contexts.

425 Introduction to Manufacturing Systems 3 Prereq Mech 310 or c/c. Traditional and contemporary tools used to support direct manufacturing processes in a manufacturing enterprise.

431 Semiconductor Devices 3 Prereq Chem 106; Phys 202. Fundamentals of semiconductor device physics, including IC and MEMS devices; use of TCAD for device simulation.

438 Microfabrication Technology 3 (2-3) Prereq Chem 106; Phys 202. Semiconductor micro lithography, thin film deposition, CMOS process integration, process simulation tools, microstructure/micro device fabrication and testing. Credit not granted for both Mech 438 and 538.

450 Advanced Topics in Nanoscience and Technology 3 (2-3) Prereq Mech 431 or c/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 530.

467 Automation 3 (2-3) Prereq Mech 304; Mech 348. Automation systems, discrete event control using programmable logic controllers (PLC), robot programming, process control. Credit not granted for both Mech 467 and 567.

468 Robotics 3 Prereq Mech 304; Mech 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 Engineering 3 Prereq Mech 310; Mech 313. Introduction to the use of finite element techniques in engineering product design and analysis; basic concepts and applications in CAE. Credit not granted for both Mech 485 and 585.

495 Internship in Industry 3 or 6 May be repeated for credit; cumulative maximum 12 hours. Prereq major mechanical engineering. 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 Prereq graduate standing; Mech 404 or c/c. Energy conservation equations; forced convection with internal and external flow, free convection, boiling and condensation, mass transfer, numerical methods.

521 Fundamentals of Fluids 1 3 Prereq graduate standing; Math 315; Mech 303 or c/c. Mass and momentum conservation equations, Navier-Stokes equations, compressible flows, inviscid-potential flows, advanced viscous flows including boundary layer numerical methods.

532 Finite Elements 3 Prereq graduate standing. Theory of finite elements; applications to general engineering systems considered as assemblies of discrete elements.

538 Microfabrication Technology 3 (2-3) Prereq graduate standing; Chem 106, Phys 202. Graduate-level counterpart of Mech 438; additional requirements. Credit not granted for both Mech 438 and 538.
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. Formerly one program with two options, the program now provides an integrated education in technical decision-making and leadership for industry employees and allows business and engineering employees to learn together in common courses.

This interdisciplinary master’s degree is offered to industries in the Puget Sound area via remote classrooms or webstreaming and to other high-tech firms around the country and around the world via webstreaming; and live at WSU Spokane, WSU Tri-Cities, and WSU Vancouver. Classes are offered at times convenient for the working professional. Each ETM class is broadcast over the web at the same time the live session is presented in our studio classroom. The videostream for each class is also archived, and is available for review during the entire semester. Courses are presented and managed using WebCT, a web-enabled course hosting platform. Students bring a significant amount of experience and diversity into the academic arena from a variety of engineering and management backgrounds.

The college also offers the following certificates: General Engineering Management; Six Sigma Quality Management; Project Management; Manufacturing Leadership; Constraints Management; Supply Chain Management; Systems Engineering Management; and Construction Project Management.

Program Requirements

The master’s program with a nonthesis option consists of 32 credit hours including a minimum of 30 credit hours of approved graded 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 and Technology Management degree. Core Courses: E M 501, 505, 540, 564, 591, 702, and Stat 430. Pre-Approved Elective Courses: Students need to have four 3-semester credit hour electives to total 12 hours of electives: E M 508, 517, 520, 522, 526, 530, 534, 545, 560, 565, 566, 570, 575, 580, 585, 590, 595, and 596. Each certificate also requires 12 credits.

Admission Requirements

Students who apply to the Master of Engineering and Technology Management degree program will have earned a Bachelor of Science degree from an accredited school with a minimum GPA of 3.0. Applicants with undergraduate degrees in other fields, particularly mathematics, physics, or business, who are working in technical fields may be accepted for this program. Prospective students must provide three letters of recommendation, a resume showing relevant work 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, 509-335-0125.

Description of Courses

Engineering Management Courses

EM 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 EM 426 and 526.

EM 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 EM 430 and 530.

EM 460 Integrated Supply Chain Management 3 Prereq junior standing. Concepts and techniques for design and managing manufacturing and service, operations intended to develop a world class organization.

EM 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.

EM 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.

EM 501 Management of Organizations 3 Exploration of issues related to individual behavior in work organizations, including motivation, leadership, team-building, and team management skills.


EM 508 Legal Concepts for the Technical and Engineering Manager 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Basic legal obligations of engineering/technical managers; identify, minimize and recognize risks and liability; contemporary legal environment and business law.

EM 517 Simulation Modeling of Engineering Systems 3 Rec 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.

EM 520 Construction Project Management for Technical Managers 3 Prereq graduate standing. Construction project bids, proposals, contracts, project delivery/organization; estimating, scheduling, resource loading, project monitoring and controls, safety and quality.

Engineering and Technology Management Program

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. Sudikatus.

Engineering management is a graduate program designed to help technical professionals become effective managers. The program is administered
522 Supervision and Leadership for Engineering and Technology Managers
Prereq: Graduate standing. Strategies of supervision with practical application techniques presented to create individual and organizational motivation.

526 Constraints Management
Graduate-level counterpart of E M 426; additional requirements. Credit not granted for both E M 426 and 526.

530 Applications of Constraints Management
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
May be repeated for credit; cumulative maximum 6 hours. Prereq: E M 526 or 530. Contemporary teaching tools, software packages, current techniques and thought in managing complex systems using the theory of constraints.

540 Operations Research for Managers
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
Structured discipline for describing, analyzing, and finalizing decisions involving uncertainty.

555 Enterprise Resource Planning
Prereq: Graduate standing. Focus on the flow of quality, timely products and cooperative supply chain operations and planning.

560 Integrated Supply Chain Management
How technical managers analyze and manage the flow of materials, services, and information for products from inception to final customer.

564 Project Management
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
Prereq: Graduate standing. Design manufacture, operation of complex system development for engineering managers; project planning, organizing, and controlling tools for engineering system constraints.

566 System Engineering Analysis and Practice
Prereq: Graduate standing. Problem-solving methodologies based on system concepts and design applications for complex, large-scale technical systems pertinent to program managers.

570 Six Sigma Quality Management
Graduate-level counterpart of E M 470; additional requirements. Credit not granted for both E M 470 and 570.

575 Performance Management in Technical Organizations
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
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
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 Product and Service Realization/Manufacturability
Tools and techniques which can be used for the improvement of the design of products, processes, and services.

591 Strategic Management of Technology and Innovations in Engineering
Rec senior standing. Management of innovation and technological innovation, integrating technological strategy, new product development, corporate entrepreneurship and innovation.

595 Advanced Topics in Engineering Management I
May be repeated for credit; cumulative maximum in E M 595 and 596, 9 hours. A wide range of current high-interest engineering management topics.

596 Advanced Topics in Engineering Management II
May be repeated for credit; cumulative maximum in E M 595 and 596 is 9 hours. A wide range of current high-interest engineering management topics.

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, Pullman campus
509-335-2581


 Majors in English provide students with a broad critical and cultural understanding of literature and literary studies, and emphasize 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 broad education emphasizing language and literature, (2) students who wish to teach or to prepare for graduate studies in literature or rhetoric and composition, (3) students who intend to use the background and skills learned in the major as a foundation for careers in writing, editing, law, business, or public service. The curriculum provides majors the opportunity to complete their studies with a small discussion seminar or senior project in their area of emphasis.

 Majors in English are expected to learn to read and write critically; to produce a variety of high-quality creative and critical texts using appropriate technologies that contribute to literary and cultural discourses; to develop abilities in critical reading, writing, and thinking necessary to communicate successfully with audiences both within and outside the university; and to explore the record of the human experience in language.

 Students who are preparing to teach English in the public schools of Washington should examine the summary of requirements for majors and minors listed in the Department of Teaching and Learning in this catalog, and they should confer with the College of Education concerning the requirements for certification.

 The Department of English offers courses of study leading to the degrees of Bachelor of Arts, Master of Arts, and Doctor of Philosophy (English). The department participates in the interdepartmental program in American Studies leading to the degrees of Bachelor of Arts, Master of Arts, and Doctor of Philosophy (American Studies). Students interested in the Bachelor of Arts in this interdisciplinary field should consult the requirements listed under Program in American Studies. English also participates in the Digital Technology and Culture program, which offers an interdisciplinary course of study leading to the Bachelor of Arts degree. Students interested in this field should consult the requirements listed under Digital Technology and Culture.

 English Major Options
Four programs are offered for the English major, all leading to the degree of Bachelor of Arts in English.

Option I: Literary Studies is for students who desire a general liberal arts education emphasizing literature, critical thinking, and writing; and for those preparing for graduate education in English or literary studies. English is often selected as a major
by students with double majors or minors in other departments.

Option II: Rhetoric and Professional Writing is for students preparing for careers in business, public service, law, or other professions requiring writing and reading skills. It is also suitable for those seeking careers in higher education specializing in rhetoric and composition.

Option III: Teaching 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: Creative Writing 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.

**Digital Technology and Culture**

Digital Technology and Culture is an interdisciplinary program administered by the Department of English. DTC students integrate a liberal arts approach with the technical knowledge and understanding necessary to work creatively and effectively with electronic information systems. DTC graduates go on to take positions in the high-tech workforce, continue on to graduate school, work in media organizations or in non-profits. Such flexibility is possible because DTC graduates gain a thorough understanding of historical contexts and current trends, as well as practical expertise in new technologies. For further information, consult the separate entry for "Digital Technology and Culture."

**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 first three 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. Students preparing for degrees which require a foreign language reading competency should begin studying a qualifying language before entering graduate school. See the "Language Requirements" page on the Department of English Graduate Studies Web site for further details.

**Schedules of Studies**

Students must complete 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.

**I. ENGLISH - LITERARY STUDIES (120 HOURS)**

Requirements in this degree include fifteen hours of core classes (302, 370, 371, 372, and 373), fifteen hours 300-400 level English literature or Humanities classes, at least six of them at the 400 level, and six hours of electives in English or Humanities at any level, excluding Engl 201. One of these must be an advisor-approved writers-of-color class. Total: 36 hours.

**First Year**

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1 At least one from Hum 101, 103, 302, 303, 304, 335, 350, 410, or 450 is required. Upper-division Hum courses are not recommended for first-year students.

**II. ENGLISH - RHETORIC AND PROFESSIONAL WRITING OPTION (120 HOURS)**

Requirements in this degree are a core of eighteen hours of 300-400 level classes, twelve to eighteen hours of electives from the list of approved courses, and the option of one or two electives – with the approval of advisor – of any English or Humanities course at any level. Required courses/core (18 hours): 302, 301, 360, 362, and 460 or 461. One transnational lit course (chosen in consultation with advisor) from 370, 371, 372, 373, 460, or 461. Electives (18 hours): 308, 336, 354, 355, 358, 363, 375, 401, 402, 405, 410, 461, 458, 475, 476, 495, any creative writing course deemed appropriate by CW faculty, the student, and her or his advisor.

**First Year**

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<td>Engl 101 [W] (GER)</td>
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<td>Engl 362</td>
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1 At least one from Hum 101, 103, 302, 303, 304, 335, 350, 410, or 450 is required. Upper-division Hum courses are not recommended for first-year students.

2 Prerequisite of 402 or 403 required for Engl 461.

**III. ENGLISH - TEACHING OPTION (120 HOURS)**

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**Second Term**

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1 At least one from Hum 101, 103, 302, 303, 304, 335, 350, 410, or 450 is required. Upper-division courses are not recommended for first-year students.

2 Required for admission to the certification program.

3 Must include one Engl [M] course.

**IV. ENGLISH - CREATIVE WRITING OPTION (120 HOURS)**

Requirements in this option involve 39-credit hours, approximately half in creative writing and related professional courses, the remainder in supporting literature courses approved by the advisor. In addition to these requirements, students are urged to elect GER courses in American and world cultures, history, and society to round out the liberal arts education that they will bring to careers in creative writing, editing, publishing, and related fields.

**First Year**

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**Fourth Year**

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<td>Engl 451 or 452</td>
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1 At least one from Hum 101, 103, 302, 303, 304, 335, 350, 410, or 450 is required. Upper-division courses are not recommended for first-year students.

2 See advisor for approved list of courses.
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 Honors College Writing Diagnostic. Critical thinking, research, and advanced writing for Honors College students.
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] Introduction to English Studies 3 Prereq Engl 101. Interpretation of texts in several fields of English studies including rhetoric, literary study, creative writing and professional writing.
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 [M] 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 May be repeated for credit; cumulative maximum 6 hours. Same as CES 314.
316 [G] South Asian Film 3 (2-3) Exploration of films by directors in South Asia and in the South Asian diaspora.
317 Gay and Lesbian Literature 3 Gay and lesbian literature with focus on the history of homosexual literature and exploration of current authors.
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 Forms, history, development of poetry; the epic, the lyric, verse satire, dramatic monologue, modernist verse. May be repeated for credit; cumulative maximum 6 hours.
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.
336 [H] Composition and Design 3 Prereq junior standing. Same as DTC 336.
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.
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.

370 The Making of “English”: Literature, Language and Culture Before 1600 3 Literature before 1600, highlighting the making of “English” through its interaction with other cultures/languages including Anglo-Saxon, French and Spanish.

371 17th and 18th Century Transnational Literature in English 3 Literary and cultural texts in English from 1600 to 1800 including British and colonial American literatures within their transnational contexts.

372 19th Century Literature of the British Empire and the Americas 3 Literary and cultural texts in English from 1800 to 1900 focusing on global British literature and literatures of the Americas.

373 20th and 21st Century Global Literatures in English 3 Literary and cultural texts in English from 1900 to the present focusing on literatures representing the complex processes of globalization.

375 [H,M] Language, Texts and Technology 3 Prereq English 251. Specialized topics in professional and creative writing.

401 History of Rhetoric 3 Survey of influential theories of rhetoric, ancient to modern.

402 [W,M] Technical and Professional Writing 3 Prereq English 101, junior standing. Research writing: defining, proposing, reporting, producing final product; other professional writing needs. Credit not granted for both English 402 and 403.

403 [W,M] Technical and Professional Writing ESL 3 Prereq English 101; pass University Writing Portfolio or concurrent enrollment in additional assigned coursework. For non-native speakers of English. Same as English 402. Special grammatical and rhetorical problems. Credit not granted for both English 402 and 403.

405 Advanced Professional Writing and Editing 3 Prereq English 402 or by interview. Professional writing and editing: textural 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 Prereq completion of one Tier I and three Tier II courses. 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.

443 Problems in English Linguistics: Syntax and Phonology 3 May be repeated for credit; cumulative maximum 6 hours. Credit not granted for both English 443 and 543. Technical introductions to generative analysis of sentences and to sound systems of human languages.

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 [M] 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 [M] 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.

454 History of the English Language 3 Prereq one-year foreign language. Language related to the origin, history, and literature of its speakers.

458 Topics in Sociolinguistics and Psycholinguistics 3 May be repeated for credit; cumulative maximum 6 hours. Relationship of language to social and psychological structures.

460 [M] The Scope of Rhetoric 3 Major themes in contemporary rhetoric.


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 American Studies 471.

472 [T] Ecological Issues and American Nature Writing 3 Prereq completion of one Tier I and three Tier II courses. Same as American Studies 472.

475 [T,D] Digital Diversity 3 Prereq junior standing; completion of one Tier I and three Tier II courses. Same as American Studies 475.

476 Digital Literacies 3 Prereq English/Am St 375. Same as Am St 476.

477 Advanced Multimedia Authoring 3 (0-6) Prereq English 355. Same as Am St 477.

478 Usability and Interface Design 3 (0-6) Prereq English 355. Same as Am St 478.
480 American Literature to 1855 3 Prereq Engl 302. American writing from Settlement and Revolution through the times of Irving, Poe, Emerson, Hawthorne, Fuller, Thoreau, and Melville.


482 Modern American Literature 3 Prereq Engl 302. Major literary movements and alternate voices in American poetry, fiction, and drama from World War I to the present.

483 Chaucer and Medieval Literature 3 Prereq Engl 302. Chaucer's Canterbury Tales in the context of Medieval culture and literary tradition.


485 Milton and English Literature of the 17th Century 3 Prereq Engl 302. Nondramatic literature from the Metaphysicals and Johnson through Milton, against background of scientific revolution, religious controversy, and civil war.

486 English Literature of the Restoration and 18th Century 3 Prereq Engl 302. Neoclassical literature from 1660 to the Romantic era: Dryden, Swift, Pope, Johnson, Gray, Goldsmith, Burns, and others.


488 Victorian Literature 3 Prereq Engl 302. Major works by Tennyson, Dickens, Browning, Swinburne, Wilde, and others in a dynamic age of change in Britain, 1832-1901.

489 Modern British Literature 3 Prereq Engl 302. Fiction, drama, poetry in age of conflict, artistic experimentation: Joyce, Woolf, Lawrence, Murdoch, Shaw, Pinter, Yeats, Eliot, Auden, and others.

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 May be repeated for credit; cumulative maximum 9 hours. American Studies Summer Institute. Credit not granted for both Engl 496 and 596.

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.

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.


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 discursive 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 Program 3 Prereq graduate standing. Combining theory and practice in writing program 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 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 May be repeated for credit; cumulative maximum 3 hours. Prereq graduate standing. Directed reading and interpretive problems in English studies.

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.
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 in integrated 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 Wapato, WA 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, 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 http://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 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.

**Schedules of Studies**

Students must complete 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.

**INTEGRATED PEST MANAGEMENT - ENTOMOLOGY OPTION**

(129 HOURS)

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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 practical experience. 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>GenEd 110 [A]</td>
<td>(GER)</td>
<td></td>
</tr>
<tr>
<td>Second Term</td>
<td>Hours</td>
<td></td>
</tr>
<tr>
<td>Biol 372 [M]</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Bot 332</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ES/RF 174</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GenEd 111 [A]</td>
<td>(GER)</td>
<td></td>
</tr>
<tr>
<td>IPM 452</td>
<td>2</td>
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</table>

Fourth Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
</tr>
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<tbody>
<tr>
<td>First Term</td>
<td>Hours</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Bot 325</td>
<td>3</td>
<td></td>
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<tr>
<td>Crop S 360 [J]</td>
<td>(GER)</td>
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<tr>
<td>Electives</td>
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</tr>
<tr>
<td>SecondTerm</td>
<td>Hours</td>
<td></td>
</tr>
<tr>
<td>Entom 441</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Hort 416</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Hort 421 [M]</td>
<td>3</td>
<td></td>
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<tr>
<td>IPM 462 [M]</td>
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<tr>
<td>SoilS 441</td>
<td>3</td>
<td></td>
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<tr>
<td>Tier III Course (GER)</td>
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INTEGRATED PEST MANAGEMENT - WEED SCIENCE OPTION (132 HOURS)

First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
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<tbody>
<tr>
<td>First Term</td>
<td>Hours</td>
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<tr>
<td>Biol 106 [B]</td>
<td>4</td>
<td>(GER)</td>
</tr>
<tr>
<td>Chem 101 [P]</td>
<td>3</td>
<td>or 105 [P] (GER)</td>
</tr>
<tr>
<td>Engl 101 [W]</td>
<td>3</td>
<td>(GER)</td>
</tr>
<tr>
<td>GenEd 110 [A]</td>
<td>(GER)</td>
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<tr>
<td>IPM 201</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
<td></td>
</tr>
<tr>
<td>Biol 107 [B]</td>
<td>4</td>
<td>or 120 [B] (GER)</td>
</tr>
<tr>
<td>Chem 102 [P]</td>
<td>4</td>
<td>or 106 [P] (GER)</td>
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<tr>
<td>GenEd 111 [A]</td>
<td>(GER)</td>
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</tr>
<tr>
<td>Math 140 [N]</td>
<td>4</td>
<td>or Stat 212 [N] (GER)</td>
</tr>
<tr>
<td>Psych 105 [S]</td>
<td>3</td>
<td>(GER)</td>
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Second Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
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<tr>
<td>First Term</td>
<td>Hours</td>
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</tr>
<tr>
<td>Ag Ec 201 [S]</td>
<td>3</td>
<td>(GER)</td>
</tr>
<tr>
<td>Crop S 201 or Hort 201</td>
<td>4</td>
<td></td>
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<tr>
<td>ES/RF 101 [B]</td>
<td>4</td>
<td>(GER)</td>
</tr>
<tr>
<td>ES/RF 174</td>
<td>3</td>
<td>(GER)</td>
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<td>H D 205 [C]</td>
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<td>(GER)</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Chem 345</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ES/RF 150 [Q]</td>
<td>3</td>
<td>or Zool 150 [Q] (GER)</td>
</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SoilS 201 [B]</td>
<td>3</td>
<td>(GER)</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td>Hours</td>
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<tr>
<td>Third Term</td>
<td>Hours</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Bot 320</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Crop S 302</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Crop S 305</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PI 429</td>
<td>3</td>
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Second Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
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<tbody>
<tr>
<td>Biol 372 [M]</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Bot 332</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Entom 340; or 343, 344</td>
<td>3 or 4</td>
<td></td>
</tr>
<tr>
<td>IPM 452</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Elective/Option Course</td>
<td>Hours</td>
<td></td>
</tr>
<tr>
<td>Year 3, Summer Session: IPM 399</td>
<td>3</td>
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Fourth Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td>First Term</td>
<td>Hours</td>
<td></td>
</tr>
<tr>
<td>Crop S 303</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Crop S 445</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
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</tr>
<tr>
<td>Elective/Option Courses</td>
<td>Hours</td>
<td></td>
</tr>
<tr>
<td>9-12</td>
<td>6</td>
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</tbody>
</table>

Minors

Entomology Minor

A minimum of 16 hours is required for the minor and must include Entom 343, 344, 349, or 440 and 9 hours from: Entom 348, 441, 448, 449, 450, 462; IPM 201, 452, 462.

Description of Courses

Entomology Courses

Entom

101 [B] Insects and People: A Perspective 3
The world's most abundant animals and their extensive effects on people yesterday and today.

102 [B] Entomology in Human Health 3
Arthropods and their role in the transmission of human diseases; major arthropod vectored diseases.

150 [Q] 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).


344 [M] General Entomology Laboratory 2.0-6 Rec Biol 106, 107 or permission of instructor. Identification and taxonomy of insects and related arthropods; insect collection and field work required.

348 Forest Insects 1 Same as NATRS 348.

349 Forest Pest Management 1 Same as NATRS 349.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>361</td>
<td>Honey Bee Biology</td>
</tr>
<tr>
<td>362</td>
<td>Fundamentals of Beekeeping</td>
</tr>
<tr>
<td>369</td>
<td>Fundamentals of Orchard Ecology</td>
</tr>
<tr>
<td>376</td>
<td>Measuring Populations in Orchards</td>
</tr>
<tr>
<td>401</td>
<td>[T] Biology and Society, Past and Present</td>
</tr>
<tr>
<td>439</td>
<td>[M] Taxonomic Entomology</td>
</tr>
<tr>
<td>440</td>
<td>Taxonomy of Immature Insects</td>
</tr>
<tr>
<td>441</td>
<td>Insect Ecology</td>
</tr>
<tr>
<td>442</td>
<td>Insect-Plant Interactions: Mechanisms of Resistance to Arthropods</td>
</tr>
<tr>
<td>445</td>
<td>Insect-Plant Interactions: Mechanisms of Resistance to Arthropods</td>
</tr>
<tr>
<td>446</td>
<td>Host Plant Resistance</td>
</tr>
<tr>
<td>447</td>
<td>Introduction to Biological Control</td>
</tr>
<tr>
<td>452</td>
<td>Aquatic Entomology</td>
</tr>
<tr>
<td>453</td>
<td>Predator-Prey Dynamics</td>
</tr>
<tr>
<td>454</td>
<td>Insect Plant Interactions: Mechanisms of Resistance to Arthropods</td>
</tr>
<tr>
<td>455</td>
<td>Insect Physiology</td>
</tr>
<tr>
<td>456</td>
<td>Introduction to Biological Control</td>
</tr>
<tr>
<td>457</td>
<td>Introduction to Pest Management in a Quality Environment</td>
</tr>
</tbody>
</table>

**Notes:**
- Prerequisites and course descriptions are provided for each course.
- Courses are offered at both undergraduate and graduate levels.
- Some courses have additional requirements or restrictions.
- Special topics and special problems courses are also available.

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**Entomology**

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**Integrated Pest Management Courses**

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**IPM**

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**201 Introduction to Pest Management in a Quality Environment**

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**201 Pest management to maximize plant protection and safeguard the quality of the environment.**
Program in Environmental Science and Regional Planning

esrp.wsu.edu
Troy 305
509-335-8538

Please see the School of Earth and Environmental Sciences in this catalog for information about Environmental Science and Regional Planning.

Department of Fine Arts

www.finearts.wsu.edu
FA Center 5072
509-335-8686

Professor and Department Chair, C. Ivory; Professors, A. Christenson, R. Helm, C. Watts; Associate Professor, K. Haas; Assistant Professors, S. Chalmers, M. DePrano, S. DiRosa, M. Forsyth, D. Gast (Tri-Cities), H. Higgs (Vancouver), M. Kinkel, N. Meisel.

The Fine Arts Department offers an interdisciplinary field, art history is an intellectual arena in which students develop their perceptual skills and analytical tools to engage diverse art forms from multiple perspectives. Students begin with foundation survey courses, the History of World Art (FA 201 and FA 202), and then take upper-division courses to consider art from specific cultures and historical time periods. In these specialized courses, students gain familiarity with contextual issues concerning the production and consumption of art. They develop research and writing skills necessary to think critically about art and visual culture. Students are also introduced to basic aspects of studio production to enhance their visual skills and knowledge of material practices. Students complete their studies by writing a thesis paper and developing knowledge of one foreign language.

Students with a BFA should have a working knowledge of the processes and media that produce works of visual art, including a clear understanding of the terms: subject matter, form, and content, as well as specialized technical, conceptual and imaginative expertise in a given field. They should be able to articulate in visual form a range of approaches, from a representational point of view through a more conceptual focus, make critical judgments about contemporary art and culture, and have an acceptable command of verbal and written expression in addition to visual expression.

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.

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 Programs.

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 on, 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 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 - ART HISTORY OPTION (120 HOURS)

Bachelor of Arts in Fine Arts - Art History Option certification requirements:
1) F A 102 or 103;
2) 9 hours from 200 or 300-level art history courses;
3) 2.0 cumulative gpa in F A courses.

First Year

First Term Hours
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Eng 101 [W] (GER) 3
FA 102 3
GenEd 110 [A] (GER) 3

Second Term Hours
Communication Proficiency [C,W] (GER) 3
FA 103 3
GenEd 111 [A] (GER) 3
Math Proficiency [N] (GER) 3
Social Sciences [S,K] (GER) 3

Second Year

First Term Hours
FA 201 3
Intercultural Studies [I,G,K] (GER) 3
Physical Science [P] (GER) 4
Foreign language or Elective 4

Second Term Hours
Arts & Humanities [H,L,G] or Social Sciences [S,K] (GER) 3
FA 202 3
Science elective [B,P] (GER) 4
Foreign language or Elective 4
Complete Writing Portfolio
**Third Year**

**First Term**

- Arts & Humanities [H,G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER) 3
- F A 303 3
- FA Studio Elective 1 3
- Non-Western Art History--FA 301, FA 302 [M], or FA 404 [M] 3
- 300-400-level General Electives 6

**Second Term**

- Arts & Humanities [H,G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER) 3
- FA 300 [M], 308 [M], 310 [M], 403 [M], 404 [M], 405 [M] 6
- FA 304 3
- General Elective 3
- 300-400-level Art History Elective 2 3

**Fourth Year**

**First Term**

- FA 302 [M], 308 [M], 310 [M], 403 [M], 404 [M], 405 [M] 6
- Tier III course [T] (GER) 3
- 300-400-level Art History Electives 2 6
- 300-400-level General Elective 3

**Second Term**

- F A 499 3
- 300-400-level Art History Electives 2 6
- 300-400-level General Electives 6

**BACHELOR OF ARTS IN FINE ARTS - GENERAL OPTION (120 HOURS)**

For the degree Bachelor of Arts in Fine Arts a total of at least 48 hours of fine arts is required; 30 of these hours must be in 300-400-level courses.

Bachelor of Arts in Fine Arts - General Option 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.

**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**

- F A 201 3
- F A 320 3
- Intercultural Studies [L,G,K] (GER) 3
- Physical Sciences [P] (GER) 4
- Elective 3

**Second Term**

- Arts & Humanities [H,G], Intercultural Studies [L,G,K] (GER) 3
- F A 202 3
- F A 350 3
- Math Proficiency [N] (GER) 3
- Elective 3

**Complete Writing Portfolio**

**Third Year**

**First Term**

- F A 303 3
- F A 340 or 351 3
- Science Elective (GER) 4
- Social Sciences [S,K] (GER) 3
- Elective 3

**Second Term**

- 300-400-level F A Elective 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Arts & Humanities [H,G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER) 3
- F A 304 3
- Elective 3

**Fourth Year**

**First Term**

- 300-400-level F A Electives 6
- 300-400-level F A Elective 3
- F A [M] 3
- Tier III Course [T] (GER) 3

**Second Term**

- 300-400-level Electives 6
- 300-400-level F A Elective 3
- F A [M] 3

**BACHELOR OF FINE ARTS (BFA) (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.

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. 2.0 cumulative GPA in F A courses;
4. 2.0 cumulative GPA in F A courses;
5. Slide portfolio and exhibit presentation of original art work.

**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**

- F A 201 3
- F A 320 3
- Intercultural Studies [L,G,K] (GER) 3
- Physical Sciences [P] (GER) 4
- Elective 3

**Second Term**

- Arts & Humanities [H,G], Intercultural Studies [L,G,K] (GER) 3
- F A 202 3
- F A 350 3
- Math Proficiency [N] (GER) 3
- Complete Writing Portfolio

**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

**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 Studies [L,G,K], or Social Sciences [S,K] (GER) 3
- F A 304 3

**Fourth Year**

**First Term**

- 300-400-level F A Electives 9
- F A 498 [M] 3
- Tier III Course [T] (GER) 3

**Second Term**

- 300-400-level F A Electives 3
- F A [M] 3
- F A 493 4
- 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 1 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.
337 Experimental Animation 3 (2-2) Same as Engl 337.
340 Ceramics 3 (0-6) Prereq F A 103 or 110. Handbuilding processes; glazing; firing.
341 Intermediate Ceramics 3 (0-6) Prereq F A 340. May be repeated for credit; cumulative maximum 9 hours.
350 Sculpture 3 (0-6) Prereq F A 103, 110. Composition of form in the three-dimensional space.
351 Intermediate Sculpture 3 (0-6) Prereq F A 350. May be repeated for credit; cumulative maximum 9 hours.
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—Digital Media 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 368.
370 Introduction to Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 6 hours. Prereq F A 102. Introduction to the fundamentals of printmaking, incorporating drawing, painting and collage; processes may include lithography, etching, relief and monotype.
371 Screenprinting 3 (0-6) May be repeated for credit; cumulative maximum 6 hours. Prereq F A 102. Introduction to the basic techniques, processes and history of screenprinting; collage, repetition, multiples, hand-drawn, photo and digital processes.
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. 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 Digital Imaging 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 332; 381. Principles and processes of digital imaging including color theory, software, cameras, scanning, color management and output options.
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.
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. 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) May be repeated for credit. Prereq F A 321, major in fine arts. Continuation of F A 321. Advanced problems in painting. Six credits only with permission of instructor.
433 Print Based Media 3 (0-6) May be repeated for credit. Prereq F A 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) May be repeated for credit; cumulative maximum 6 hours. Prereq F A 333. Principles and processes of video, installation, and sound based art; emphasis on conceptual development of experimental forms.
435 Interactive Media 3 (0-6) Prereq F A 332. Interactive possibilities in digital media including web-based projects, installation and physical computing.
442 Advanced Ceramics 3 (0-6) or 6 (0-12) May be repeated for credit. Prereq F A 351. Six credits only with permission of instructor.
471 Digital and Photo Processes for Printmaking 3 (0-6) May be repeated for credit. Prereq F A 332. Survey of digital and photo processes for printmaking.
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.
Department of Food Science and Human Nutrition

www.fshn.wsu.edu  
FHSN 106  
509-335-4763

Professor and Interim Department Chairs, B. Swanson (Food Science), and B. Chew (Human Nutrition); Professors, K. Beerman, S. Butkus, R. Dougherty, C. Edwards, L. Massey, A. McCurdy, B. Rosco, J. Shultz, T. Shultz, R. Wright; Associate Professors, S. Clark, M. Edlefsen, D. Kang, S. McGuire, J. Powers; Assistant Professors, J. Harbertson, K. Killinger-Mann, C. Ross; Instructors, L. Beha, D. Swanson, S. Scheuneman, D. Wood.

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 professions 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 (Dietetics)

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 dietetics 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 US. 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 certify into the General Dietetics Program (GDP) students must meet the following criteria:

1. Must have a minimum cumulative gpa of 3.0.
2. Must have passed the following prerequisite courses: Chem 101 or 105 and 102 or 106; Chem 345; Biol 251; MBioS 101; FSHN 120/121, 201, 233; Acctg 230; Stat 205 or 212; Engl 101 [W]; Psych 105.
3. Must have a minimum grade of C or better in science courses (Chemistry, Biology and Molecular Biosciences).
4. Must have completed at least 60 semester credits.
5. Must complete and submit all application materials by the deadline date.

To graduate from the GDP, certified students must maintain a minimum cum gpa of 2.7, satisfy the minimum graduation requirements for WSU, and all 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 Dietetic 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.

To certify into the CPD, students will be evaluated on all the following criteria:

1. A minimum cumulative GPA of 3.0
2. Completion of all pre-requisite courses (courses in the GDP curriculum) with a passing grade (C or better) by the time they start the CPD. Students who have completed a Bachelor’s degree may apply to the CPD by submitting a Verification Statement verifying completion of CADE-accredited or approved program.
3. Submission of all application materials by the deadline date. Application materials will be evaluated on the basis of the breadth and depth of the students’ experiences, as well as for clarity of expression. Application materials include:
   - A written statement describing reasons for entering the field of dietetics
   - Relevant work and volunteer experience, involvement in extracurricular and professional activities.
4. Adequate performance in personal/group interview.

The graduation requirement for certified CPD students is the same for admission - maintaining a cum GPA of 3.0 with a C or better in all courses. The General Dietetics Program and the Coordinated Program in Dietetics are 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. Telephone: 312-899-0040 ext.5400.

Students graduating from the General Dietetics Program 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. Students graduating from the Coordinated Program in Dietetics will have the requisite knowledge, skills, and experience to successfully 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.

**Nutritional Sciences**

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 addressing 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. The department of 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 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)**

The food science option is for the student interested in the science of food processing, quality, safety and product development. Students gain practical training in the application of chemistry and microbiology to the processing of foods.

**First Year**

<table>
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<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] or 105 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
<td>4</td>
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<tr>
<th>Second Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biol 107 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>ComSt 102 [C] or H D 205 [C] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</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>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Chem 345</td>
<td>4</td>
</tr>
<tr>
<td>FSHN 220</td>
<td>3</td>
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<tr>
<td>Phys 101 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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</tbody>
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**FOOD SCIENCE AND HUMAN NUTRITION - GENERAL & COORDINATED DIETETICS OPTION** (148 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.

To certify into the General Dietetics Program (GDP) students must have completed 60 semester hours; have a minimum 3.0 gpa; have passing grades in Acctg 230; Biol 251; Chem 101 or 105; Chem 102 or 106; Chem 345; Engl 101; FSHN 120/121; FSHN 201; FSHN 233; MBioS 101; Psych 105; and Stat 205 or 212, including a C or better in all Biol, Chem, and MBioS courses.

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**Second Term** | **Hours**
--- | ---
A S 314 or FSHN 233 | 3
Arts and Humanities [H,G] (GER) | 3
MBioS 303 | 4
MBioS 305 | 3
MBioS 306 | 2
FSHN Elective | 3
Complete Writing Portfolio

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**Third Year**

**First Term** | **Hours**
--- | ---
EconS 351 or Mktg 360 | 3
FSHN 303 | 3
FSHN 416 | 2
FSHN 417 | 2
Stat 212 [N] (GER) | 4

**Second Term** | **Hours**
--- | ---
FSHN 433 | 3
FSHN 434 | 1
FSHN 470 | 3
FSHN Elective | 6
Intercultural Studies [I,G,K] (GER) | 3

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**Fourth Year**

**First Term** | **Hours**
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FSHN 408 | 1
FSHN 422 | 4
FSHN 460 | 3
FSHN 461 [M] | 1
FSHN Elective | 3
Tier III Course [T] (GER) | 3

**Second Term** | **Hours**
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FSHN 462 | 4
FSHN 489 | 3
Electives | 5

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1. Math 171 and 172 are required of those students who will be competing for scholarships offered by the Institute of Food Technologists.
2. Although Biol 106 is listed as a prerequisite to Biol 107, Biol 107 can be taken without Biol 106 if Chem 105 is taken prior to Biol 107 and if Biol 107 is taken concurrently with Chem 106.
3. FSHN electives may be selected using the emphasis area list available in the FSHN department. All courses must be selected in consultation with an academic advisor.

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**FOOD SCIENCE AND HUMAN NUTRITION - NUTRITIONAL SCIENCE OPTION** (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** | **Hours**
--- | ---
Biol 106 [B] (GER) | 4
Chem 101 [P] (GER) | 4
Engl 101 [W] (GER) | 3
GenEd 110 [A] (GER) | 3

**Second Term** | **Hours**
--- | ---
Biol 107 [B] (GER) | 4
Chem 102 [P] (GER) | 4
FSHN 233 | 4
FSHN 330 [M] | 3
MBioS 303 | 4
Tier III Course [T] (GER) | 3

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**Second Year**

**First Term** | **Hours**
--- | ---
FSHN 330 | 3
FSHN 380 | 3
FSHN 410 | 2
FSHN 420 | 2
FSHN 436 | 4

**Second Term** | **Hours**
--- | ---
FSHN 426 [M] | 3
FSHN 430 | 3
FSHN 435 | 3
FSHN 437 | 1
FSHN 438 | 2
FSHN 480 | 3

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**Fifth Year**

**First Term** | **Hours**
--- | ---
FSHN 475 | 2
FSHN 476 | 3
FSHN 477 (supervised practice) | 10

**Second Term** | **Hours**
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FSHN 439 | 2
FSHN 440 | 3
FSHN 478 (supervised practice) | 10

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1. To prepare for Stat 212 in junior year.
2. H D 205 is recommended.
3. FSHN electives may be selected using the emphasis area list available in the FSHN department. All courses must be selected in consultation with an academic advisor.
4. Hist 492 is suggested.

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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 hr must be taken to fulfill university requirements to graduate. A minimum of 40 hr 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" grade 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 430 3
Upper Level Physiologic Science Course 3-4
Electives 6

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 305; MBioS 306; Chem 345. Specialized techniques and concepts of food processing and marketing. Field trip required. Cooperative course taught by WSU, open to UI students (FST 303).

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; Chem 345; FSHN 130 or 233. Functional chemistry of nutrients in physiological systems and nutrient interactions.

331 Nutrition in the Human Life Cycle 3 Prereq 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.

380 Management in Food Service Systems I 4 (3-3) Prereq FSHN 120; FSHN 121; 331; Acctg 230; HBM 358 or Mgmt 301. 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. Credit not granted for both FSHN 401 and 501. Selected topics in food science and human nutrition.

405 Eating Disorders 2 Prereq senior standing; certified nutrition major. Junior-level nutrition majors and others by permission. 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 or 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 MBioS 305; MBioS 306. Purpose for enumeration, detection and identification of microorganisms in food products; physical, chemical and environmental factors influencing growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms in food and their control. Cooperative course taught by UI (FST and MMBB 416), open to WSU students.

417 Food Microbiology Laboratory 2 (0-6) Prereq c// in FSHN 416. Lab for FSN 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 student (FST 422/522).

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; Chem 345; MBioS 303. 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 3 Prereq FSHN 130 or 233; senior standing. 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 Prereq junior standing. 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 Rec biology, chemistry, sociology/psychology courses. Application of current nutrition topics to community and clinical settings, integrating social science principles for individuals and groups.

460 Food Chemistry 3 Prereq Chem 345. 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 MBioS 305; MBioS 306. Rec Chem 345. 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 303; MBioS 305; MBioS 306. 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 303, 416, 433, 460 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 Food Systems Management 2 Prereq by interview only. Analysis of scientific popular and legislative 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 2 3 Prereq Acctg 230; FSHN 120; FSHN 380; HBM 358. Management theories, human resources, financial planning, marketing, and quality control

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.

496 Internship in Winery 2 Prereq sophomore standing. Industrial assignments at a regional, national or international winery.

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

500 Topics in Food Science V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq permission of instructor. Cooperative course taught jointly by WSU and UI (FST 504).

501 Topics in Food Science and Human Nutrition V 1-3 Graduate-level counterpart of FSHN 401; additional requirements. Credit not granted for both FSHN 401 and 501.

502 Topics in Food Science V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq permission of instructor. Cooperative course taught jointly by WSU and UI (FST 504).

503 Topics in Food Science V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq permission of instructor. Cooperative course taught jointly by WSU and UI (FST 504).

504 Advanced Human Nutrition 4 Prereq graduate standing. Scientific basis of human nutrition requirements, dietary allowances and assessment techniques.

505 Eating Disorders 2 Prereq graduate nutrition student or by permission. Graduate-level counterpart of FSHN 405; additional requirements. Credit not granted for both FSHN 405 and 505. Cooperative course taught by UI (FSC 504), open to WSU students.

506 Evaluation of Dairy Products I 1 Graduate-level counterpart of FSHN 406; additional requirements. Credit not granted for both FSHN 406 and 506. Cooperative course taught by WSU, open to UI students (FST 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 bioc hemistry, food chemistry. Chemical, physical, and toxicological properties of water, vitamins, pigments, synthetic colors, minerals, miscellaneous food additives, and natural toxins. 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 Prereq graduate standing. Rec FSHN 426 or 436; statistics course. The application of human theories and qualitative/quantitative methods of data collection to human nutrition research. Cooperative course taught by WSU, open to UI students (FCS 521).

522 Sensory Evaluation of Food and Wine 4(3-3) Prereq Stat 212. Grad uate-level counter part 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.

529 Dairy Products 4 (3-3) Prereq MBioS 101 or 301; Chem 345; MBioS 303. 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 Advanced Lifecycle Nutrition 2 Prereq lifecycle nutrition course or c// FSHN 331. Critically evaluate published literature concerning nutritional considerations during periods of growth, development, pregnancy, lactation, and aging.

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 inter ventions 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 Prereq permission of instructor. 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 Prereq MBioS 302, 303. 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 Prereq FSHN 416, 433 or c/. 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. 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 Prereq BSysE 481 or Ch E 530. 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.

526 Advanced Community Nutrition 3 Prereq 300-400-level nutrition course. Same as FSHN 526.

531 Advanced Lifecycle Nutrition 2 Rec 300- 400-level lifecycle nutrition course; c// FSHN 436. Same as FSHN 531.

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, Z. Dong; Associate Professors, J. Grenier-Winther, R. Halverson, B. Ingemanson, C. Lupke, F. Manzi-Robledo, A. M. Rodriguez-Vivaldi; Professor Emeritus: A. Chang; Assistant Professors, B. Hyner, S. Davis (Clinical), M. Luo, V. Navarro-Daniels; Instructors, W. Cao, N. Cifuentes, S. Polle, M. Previto, I. Suzuki; Lecturer, B. Henrioulle-Mackay; Director, Language and Learning Resource Center, D. Winther; Academic Program Manager, L. Heintis

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 stimulation of the student's intellectual curiosity and critical thinking skills; 5) to have an appreciation of humanistic 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 Francaise, 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. 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 (Chinese Language and Culture, French, German, and Spanish) and Master of Arts in Foreign Languages and Cultures (Spanish). Language minors are available in Chinese, French, German, Russian, Spanish. Language/ cultural minors are also possible in Film Studies, French Area Studies, German Area Studies, Latin American Studies, Russian Area Studies.

The department also advises in degree areas of General Humanities-International Studies in the major concentration areas of Latin American Area Studies, Germanic Area Studies, French and Francophone Area Studies, and European Area Studies. (See Liberal Arts, General Studies-International 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 website.

**Schedules of Studies**

Students must complete 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.

**CHINESE LANGUAGE AND CULTURE**

(120 HOURS)

**First Year**

**First Term**

- Chin 101 or higher (102, 203, 204) 4
- Engl 101 [W] (GER) 3
- For L 101 [G], 110 [H], 120 [G] or 130 [H] (GER) 3
- GenEd 110 [A] (GER) 3
- Social Sciences [S,K] (GER) 3

**Second Term**

- Biological Sciences [B] (GER) 4
- Chin 102 or higher (203, 204) 4
- Chin 111, 121, or 131 3
- GenEd 111 [A] (GER) 3

**Second Year**

**First Term**

- Chin 203 or higher (204) 4
- Math Proficiency [N] (GER) (210 rec) 3 or 4
- Physical Sciences [P] (GER) 4
- Elective 3

**Second Term**

- Arts & Humanities [H,G] (GER) 3
- Chin 204 or 307 3 or 4
- Chin 311 [M] 3
- Communication Proficiency [C,W] (GER) 3
- Elective 3

**Third Year**

**First Term**

- Chin 306, 307, or 308 3
- Chin 361, 363, or 364 3
- Chinese Area Studies Elective 3
- Intercultural Studies [I,G,K] (GER) 3
- Elective or For L 440 if teaching major 3

**Second Term**

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Chin 306, 307, or 308 3
- Chin 330 [M] 3
- Science Elective [B,P] (GER) 3
- 300-400-level Elective 3

**Fourth Year**

**First Term**

- Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
- Chin 306, 307, or 308 3
- Chinese Area Studies Elective 3
- 300-400-level Elective or For L 440 if teaching major 6

**Second Term**

- Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
- Chin 361, 363, or 364 3
- Chinese Area Studies Elective 3
- Tier III Course [T] (GER) 3
- 300-400-level Elective 3

1 Study abroad in an immersion program in China or Taiwan is strongly recommended.
2 One [S] or [K] must also be an American Diversity [D] course.
3 Electives must be represented by 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.
4 Students must take nine credits in China-related courses from other departments. For a list of approved courses, see the Department of Foreign Languages and Cultures.

**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 unless thus designated in the catalog. 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 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 105 (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 4
- Fren, Ger, Span 205 3
- Math Proficiency (210 rec) [N] (GER) 3

**Complete Writing Portfolio**

**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
**Minor in French Area and Culture Studies**

A minimum of 16 credits is required. A foundation of the target language, French 203 (4 credits), is required; in addition, 4 courses (12 credits) of further knowledge must be taken other than 203 as: EITHER one lower level and two upper-level courses in FLC plus one approved course in another department; OR one lower-level and one upper-level course in FLC plus two approved courses in another department. See the department of FL&C for a list of acceptable courses. A minimum of 9 credits with a letter grade must be taken in residency at WSU, of which 3 must be at the 300-400 level. All courses must be passed with a grade of C or better. Only courses thus designated in the Catalog may be repeated for credit toward the minor. Courses counting towards a minor in the language may not be counted towards a major in International Area Studies (i.e., Latin America Area Studies, German Area Studies, French and Francophone Area Studies, or Russian Area Studies). 105, 205, and 305 may not count towards the minor. For courses taken in Study Abroad Programs or as other transfer credits, please check with your advisor.

**Minor in Russian Area and Culture Studies**

A minimum of 16 credits is required. A foundation of the target language, Russian 203 (4 credits), is required; in addition, 4 courses (12 credits) of further knowledge must be taken other than 203 as: EITHER one lower level and two upper-level courses in FLC plus one approved course in another department; OR one lower-level and one upper-level course in FLC plus two approved courses in another department. See the department of FL&C for a list of acceptable courses. A minimum of 9 credits with a letter grade must be taken in residency at WSU, of which 3 must be at the 300-400 level. All courses must be passed with a grade of C or better. Only courses thus designated in the Catalog may be repeated for credit toward the minor. Courses counting towards a minor in the language may not be counted towards a major in International Area Studies (i.e., Latin America Area Studies, German Area Studies, French and Francophone Area Studies, or Russian Area Studies). 105, 205, and 305 may not count towards the minor. For courses taken in Study Abroad Programs or as other transfer credits, please check with your advisor.

**Description of Courses**

**Arabic Courses**

**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 UI (ARBC 101), open to WSU students.

**102 Second Semester** 4 (3-2) Prereq Arabc 101 with a grade of C or better, or equivalent. Continued development of basic skills in speaking, listening and writing. Not open to native speakers except with permission. Cooperative course taught by UI (ARBC 102), open to WSU students.
### Chinese Courses

**Chin**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Grading</th>
<th>Notes</th>
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<tbody>
<tr>
<td>101</td>
<td>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).</td>
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<tr>
<td>102</td>
<td>Second Semester 4 (3-2) Prereq Chin 101 with a grade of C or better, or equivalent. Continuation of Chin 101. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 102).</td>
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<td>105</td>
<td>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.</td>
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<td>111 [G]</td>
<td>Asian Film 3 Asian film from a cultural perspective. Taught in English. Cooperative course jointly taught by WSU and UI (Chin 111).</td>
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<tr>
<td>120</td>
<td>Traditional Chinese Culture 3 Cultural development of China from early times through the golden age of Chinese civilization. Taught in English. Cooperative course taught by WSU, open to UI students (Chin 120).</td>
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<tr>
<td>121 [G]</td>
<td>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 (Chin 121).</td>
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<tr>
<td>160</td>
<td>Chinese Calligraphy 1 (0-2) May be repeated for credit; cumulative maximum 4 hours. An introduction to the brush writing of Chinese characters. No prior knowledge of Chinese needed.</td>
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<td>180</td>
<td>Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
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<tr>
<td>205</td>
<td>Intermediate Conversation I 1 May be repeated for credit; cumulative maximum 2 hours. Prereq Chin 203 or 204 or equivalent or c// in Chin 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission. S, F grading.</td>
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<tr>
<td>280</td>
<td>Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
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<td>305</td>
<td>Intermediate Conversation V 1-2 May be repeated for credit; cumulative maximum 2 hours. Prereq one Chin 300-level course or c// in a Chin 300-level course. Conversation practice in small groups. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 305). S, F grading.</td>
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<tr>
<td>306</td>
<td>Intermediate Reading and Translation 3 Prereq Chin 204 with a grade of C or better, or equivalent. English-Chinese expressions, development of skills to increase reading speed and fluency. Cooperative course taught by WSU; open to UI students (Chin 306).</td>
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<tr>
<td>307</td>
<td>Intermediate Speaking and Listening 3 Prereq Chin 204 with a grade of C or better, or equivalent. Early advanced training in speaking, reading and writing on abstract topics in Chinese; continued development of listening comprehension skills. Taught in Chinese.</td>
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<tr>
<td>308</td>
<td>Intermediate Grammar and Writing 3 Prereq Chin 204 with a grade of C or better, or equivalent. 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).</td>
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<tr>
<td>311 [M]</td>
<td>Great Asian Directors 3 (2-3) Prereq China 111, 121 or 131. Focused study of two prominent Asian film directors. Taught in English. Cooperative course taught by WSU; open to UI students (Chin 311).</td>
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<tr>
<td>330 [M]</td>
<td>The Art of War 3 (2-2) Prereq Chin 111, 121 or 131. The philosophy behind war, military strategy and its consequences and representation in literature and film from East Asia. Taught in English. Cooperative course taught by WSU; open to UI students (Chin 330).</td>
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<tr>
<td>361</td>
<td>Chinese for the Professions 3 Prereq Chin 204 with a grade of C or better. Communication in Chinese in the professional setting; telephone and meeting role play, letter writing, television and discussion of current events. Not open to native speakers except with permission. Cooperative course taught by WSU; open to UI students (Chin 361).</td>
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<tr>
<td>363</td>
<td>Introduction to Literary Chinese 3 Prereq Chin 102 or equivalent. Fundamentals of literary Chinese. Open to native speakers. Cooperative course taught by WSU, open to UI students (Chin 363).</td>
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<tr>
<td>364</td>
<td>Media Chinese Prereq Chin 204 with a grade of C or better. Study of Chinese using newspapers, television news, radio broadcasts, webcasts and other journalistic media. Taught in Chinese. Not open to native speakers except with permission. Cooperative course taught by WSU; open to UI students (Chin 364).</td>
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<tr>
<td>380</td>
<td>Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
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<tr>
<td>405</td>
<td>Advanced Conversation 1 May be repeated for credit; cumulative maximum 2 hours. Prereq Chin 305; oral proficiency interview. Advanced-level conversation practice in small groups with a native speaker. Cooperative course taught by WSU, open to UI students (Chin 405). S, F grading.</td>
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<td>480</td>
<td>Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
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<td>499</td>
<td>Special Problems V 1-4 May be repeated for credit. S, F grading.</td>
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</table>

### Classics Courses

**Clas**

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Grading</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>First Semester Latin 4 Latin fundamentals of speaking, listening and writing skills.</td>
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<td>102</td>
<td>Second Semester Latin 4 Prereq Clas 101 with a grade of C or better, or equivalent. Continued development of Latin speaking, listening, reading and writing skills.</td>
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<tr>
<td>103</td>
<td>Latin and Greek for Sciences 2 Latin and Greek roots for students of science, medicine, horticulture, etc.</td>
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<tr>
<td>104</td>
<td>Practical Approaches to Latin 3 Basic understanding and word heritage of Latin used in a variety of applications including reading, grammar, speaking and writing.</td>
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<tr>
<td>180</td>
<td>Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
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<tr>
<td>280</td>
<td>Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
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<td>341</td>
<td>Elementary Greek 4 Pronunciation, vocabulary, reading, and functional grammar. Cooperative course taught by UI (Grek 341), open to WSU students.</td>
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<tr>
<td>342</td>
<td>Elementary Greek 4 Pronunciation, vocabulary, reading, and functional grammar. Cooperative course taught by UI (Grek 342), open to WSU students.</td>
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<tr>
<td>349</td>
<td>Greek Language Lab 1 May be repeated for credit; cumulative maximum 2 hours. Basic skills. Cooperative course taught by UI (Grek 349), open to WSU students. S, F grading.</td>
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</tbody>
</table>
369 Latin Language Lab 1 May be repeated for credit; cumulative maximum 2 hours. Prereq permission. Advanced-level expressive skills. Cooperative course taught by UI (Latn 369), open to WSU students. 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 May be repeated for credit; cumulative maximum 3 hours. Cooperative course taught by UI (Latn 404), open to WSU students.

441 Intermediate Greek I 4 Readings in classical Greek prose and poetry. Cooperative course taught by UI (Latn 441), 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.

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 May be repeated for credit; cumulative maximum 8 credits. Languages, topics, or foreign language skills not covered by other 100-level courses.

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.

180 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 May be repeated for credit; cumulative maximum 8 credits. Languages, topics, or foreign language skills not covered by other 200-level courses. Cooperative course taught jointly by WSU and UI (FL 204).

210 Foreign Film and Lecture Series I 1 (0-2) An introduction to foreign films through universal themes and their varied cinematic portrayal.


221 Pre-Study/Internship Abroad Orientation I 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 one Tier I; 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 204 level of foreign language, or equivalent. 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 204 level of foreign language, or equivalent. 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 544.

450 Descriptive Linguistics I 3 Same as Anth 450.

473 Teaching Foreign Language in the Elementary School 3 Prereq 204 level of foreign language, or equivalent. Same as T & L 473.

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.

540 Research and Methods of Teaching Foreign Languages 3 Prereq graduate standing. Graduate level counterpart of For L 440; additional requirements. Credit not granted for both For L 440 and 540.

541 Research and Methods of Technology Enhanced Foreign Language Learning 3 Prereq graduate standing. Graduate level counterpart of For L 441; additional requirements. Credit not granted for both For L 441 and 541.

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 Prereq graduate standing. Bibliography and formal aspects of scholarly writing; general introduction to literary criticism.

600 Special Projects or Independent Study 3 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, or equivalent. 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.


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 (2-2) Taught in English. Introduction to French and Francophone films.

111 [G] Francophone Film in English 3 (2-2) Taught in English. Introduction to films from the French-speaking world.

120 [H] French Culture 3 May be repeated for credit; cumulative maximum 6 hours. Taught in English. Cultural history of France from beginnings to present; comparison of French and American cultures.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>121</td>
<td>Intermediate Grammar and Writing</td>
<td>Fren 120</td>
<td>Taught in English. Study of relationship between France and its former colonies from a global perspective; complements Fren 120.</td>
</tr>
<tr>
<td>180</td>
<td>Special Topics: Study Abroad</td>
<td>V 1-6</td>
<td>May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
</tr>
<tr>
<td>203</td>
<td>Intermediate Conversation I</td>
<td>Fren 102 with a grade of C or better, or equivalent</td>
<td>Grammar review and further development of speaking, listening, reading, and writing skills. Not open to native speakers except with permission.</td>
</tr>
<tr>
<td>204</td>
<td>Fourth Semester</td>
<td>Fren 203 with a grade of C or better, or equivalent</td>
<td>Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission.</td>
</tr>
<tr>
<td>205</td>
<td>Intermediate Conversation I</td>
<td>V 1-2</td>
<td>Prereq Fren 203 or 204 or equivalent, or c// in Fren 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission.</td>
</tr>
<tr>
<td>280</td>
<td>Special Topics: Study Abroad</td>
<td>V 1-6</td>
<td>May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
</tr>
<tr>
<td>305</td>
<td>Intermediate Conversation II</td>
<td>V 1-2</td>
<td>Prereq Fren 203 or 204. Intermediate-level conversation practice in small groups with native/near-native speakers. Not open to native speakers except with permission. May be repeated for credit; cumulative maximum 2 hours. S, F grading.</td>
</tr>
<tr>
<td>306</td>
<td>Intermediate Reading and Translation</td>
<td>V 1-2</td>
<td>Prereq Fren 204 with a grade of C or better, or equivalent. Vocabulary building, contrastive English-French expressions, development of skills to increase reading speed and fluency.</td>
</tr>
<tr>
<td>307</td>
<td>Intermediate Speaking and Listening</td>
<td>V 1-2</td>
<td>Prereq Fren 204 with a grade of C or better, or equivalent. Systematic development of speaking and listening proficiency; emphasis on pronunciation and phonetics. Not open to native speakers except with permission.</td>
</tr>
<tr>
<td>308</td>
<td>Intermediate Grammar and Writing</td>
<td>Fren 203 or 204</td>
<td>Prereq Fren 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission.</td>
</tr>
<tr>
<td>350</td>
<td>Introduction to French Literature</td>
<td>3 May be repeated for credit; cumulative maximum 6 credits. Prereq either Fren 306, 307, or 308. Taught in French.</td>
<td></td>
</tr>
<tr>
<td>361</td>
<td>French for the Professions</td>
<td>Fren 204 with a grade of C or better, or equivalent</td>
<td>Communication in French for professional purposes; telephone and meeting role-plays, letter- and resume-writing, discussions of current events in the Francophone world.</td>
</tr>
<tr>
<td>380</td>
<td>Special Topics: Study Abroad</td>
<td>V 1-6</td>
<td>May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
</tr>
<tr>
<td>405</td>
<td>Advanced Conversation</td>
<td>1 May be repeated for credit; cumulative maximum 2 hours. Prereq Fren 305; oral proficiency interview. Advanced-level conversation practice in small groups with a native speaker. S, F grading.</td>
<td></td>
</tr>
<tr>
<td>407</td>
<td>Advanced Speaking and Listening</td>
<td>V 1-6</td>
<td>Prereq Fren 307, or equivalent. Systematic development of speaking and listening proficiency at the advanced level.</td>
</tr>
<tr>
<td>451</td>
<td>Seminar in French Studies - Authors</td>
<td>Taught in French. Important authors in French studies. Taught in French.</td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>Seminar in French Studies - Themes</td>
<td>3 May be repeated for credit; cumulative maximum 6 hours. Prereq two Fren 300-level courses excluding Fren 305. Seminar on important themes in French studies. Taught in French.</td>
<td></td>
</tr>
<tr>
<td>451</td>
<td>Seminar in French Studies - Authors</td>
<td>3 May be repeated for credit; cumulative maximum 6 hours. Prereq two Fren 300-level courses excluding Fren 305. Seminar on important authors in French studies. Taught in French.</td>
<td></td>
</tr>
<tr>
<td>452</td>
<td>Seminar in French Studies - Genres</td>
<td>3 May be repeated for credit; cumulative maximum 6 hours. Prereq two Fren 300-level courses excluding Fren 305. Seminar on important genres in French studies. Taught in French.</td>
<td></td>
</tr>
<tr>
<td>480</td>
<td>Special Topics: Study Abroad</td>
<td>V 1-6</td>
<td>May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
</tr>
<tr>
<td>499</td>
<td>Special Problems</td>
<td>V 1-4</td>
<td>May be repeated for credit. S, F grading.</td>
</tr>
<tr>
<td>101</td>
<td>First Semester</td>
<td>(3-2)</td>
<td>Fundamentals of speaking, listening, reading, and writing. Not open to native speakers except with permission.</td>
</tr>
<tr>
<td>102</td>
<td>Second Semester</td>
<td>(3-2)</td>
<td>Prereq Ger 101 with a grade of Cor better, or equivalent. Continued development of basic skills in speaking, listening, reading, and writing. Not open to native speakers except with permission.</td>
</tr>
<tr>
<td>105</td>
<td>Elementary Conversation</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>German Film</td>
<td>Taught in English. Introduction to German film.</td>
<td></td>
</tr>
<tr>
<td>121</td>
<td>Contemporary German Culture</td>
<td>Taught in English. Current social, political, economic, and cultural trends in Germany.</td>
<td></td>
</tr>
<tr>
<td>130</td>
<td>Masterpieces in German Literature</td>
<td>Taught in English. Introduction to German literature.</td>
<td></td>
</tr>
<tr>
<td>180</td>
<td>Special Topics: Study Abroad</td>
<td>V 1-6</td>
<td>May be repeated for credit; cumulative maximum 6 credits. S, F grading.</td>
</tr>
<tr>
<td>203</td>
<td>Third Semester</td>
<td>Ger 102 with a grade of C or better, or equivalent</td>
<td>Further development of speaking, listening, reading, and writing skills. Not open to native speakers except with permission.</td>
</tr>
<tr>
<td>204</td>
<td>Fourth Semester</td>
<td>Ger 203 with a grade of C or better, or equivalent</td>
<td>Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission.</td>
</tr>
<tr>
<td>305</td>
<td>Intermediate Conversation I</td>
<td>1 May be repeated for credit; cumulative maximum 2 hours. Prereq Ger 203 or 204 or equivalent, or c// in Ger 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission.</td>
<td></td>
</tr>
<tr>
<td>307</td>
<td>Intermediate Speaking and Listening</td>
<td>1 May be repeated for credit; cumulative maximum 6 hours. Prereq Ger 203 or 204 or equivalent, or c// in Ger 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission.</td>
<td></td>
</tr>
<tr>
<td>308</td>
<td>Intermediate Grammar and Writing</td>
<td>Ger 203 or 204</td>
<td>Prereq Ger 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission.</td>
</tr>
<tr>
<td>309</td>
<td>Intermediate Conversation II</td>
<td>1 May be repeated for credit; cumulative maximum 2 hours. Prereq Ger 203 or 204 or equivalent, or c// in Ger 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission.</td>
<td></td>
</tr>
<tr>
<td>307</td>
<td>Intermediate Speaking and Listening</td>
<td>1 May be repeated for credit; cumulative maximum 6 hours. Prereq Ger 203 or 204 or equivalent, or c// in Ger 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission.</td>
<td></td>
</tr>
<tr>
<td>308</td>
<td>Intermediate Grammar and Writing</td>
<td>Ger 203 or 204</td>
<td>Prereq Ger 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission.</td>
</tr>
</tbody>
</table>
310 German Film 3 Prereq either Ger 306, 307, or 308. Study of important German films. Taught in German.

320 German Culture 3 Prereq either Ger 306, 307, or 308. Introduction to German culture. Taught in German. Cooperative course taught jointly by WSU and UI (Germ 305).

350 Introduction to German Literature 3 Prereq either Ger 306, 307, or 308. Survey of masterpieces of German literature. Taught in German.

361 German for the Professions 3 Prereq Ger 204 with a grade of C or better, or equivalent. Communication in German for professional purposes; telephone and meeting role-plays, letter-writing, television, discussions of current events in the German-speaking world. Cooperative course taught jointly by WSU and UI (Germ 303).

407 Advanced Speaking and Listening 3 Prereq Ger 307, or equivalent. Systematic development of speaking and listening proficiency at the advanced level.

408 [M] Advanced Grammar and Writing 3 Prereq Ger 308, or equivalent. Development of advanced proficiency in writing.

410 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).

420 Second Semester 4 (3-2) Prereq Ital 101 with a grade of C or better, or equivalent. 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).

450 [M] Seminar in German Studies - Themes 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Ger 305. Seminar on important themes in German studies. Taught in German. Cooperative course taught jointly by WSU and UI (Germ 420).

451 [M] Seminar in German Studies - Authors 3 Prereq two Ger 300-level courses excluding Ger 305. Seminar on important authors in German studies. Taught in German. Cooperative course taught jointly by WSU and UI (Germ 421).

452 [M] Seminar in German Studies - Genres 3 May be repeated for credit; cumulative maximum 6 hours. Prereq two Ger 300-level courses excluding Ger 305. Seminar on important genres in German studies. Taught in German.

480 Special Topics: Study Abroad 3 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.

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 of C or better, or equivalent. 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 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. Cooperative course taught by WSU, open to UI students (Ital 105).

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 Ital 102 with a grade of C or better, or equivalent. 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 with a grade of C or better, or equivalent. 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 May be repeated for credit; cumulative maximum 2 hours. Prereq Ital 203 or 204 or equivalent or c// in Ital 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Ital 205).

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 May be repeated for credit; cumulative maximum 8 hours. Prereq Japn 203, or equivalent. Conversation practice in small groups with native/near-native speakers. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Japn 305).

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, or equivalent. 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).

111 [G] Asian Film 3 Same as Chin 111.

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, or equivalent. 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, or equivalent. 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 1 May be repeated for credit; cumulative maximum 2 hours. Prereq Japn 203 or 204 or equivalent or c// in Japn 203 or 204. 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 V 1-2 May be repeated for credit; cumulative maximum 8 hours. Prereq Japn 203, or equivalent. Conversation practice in small groups with native/near-native speakers. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Japn 305).

380 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.
Nez Perce Courses

101 First Semester 4 (3-2) Fundamentals of speaking, listening, reading, and writing. Cooperative course taught by UI (NezP 101); open to WSU students.

102 Second Semester 4 (3-2) Prereq Nez P 101 with a grade of C or better. Continued development of basic skills in speaking, listening, reading and writing skills. Cooperative course taught by UI (NezP 102); open to WSU students.

203 Third Semester 4 (3-2) Prereq Nez P 102 with a grade of C or better. Further development of basic skills in speaking, listening, reading and writing skills. Cooperative course taught by UI (NezP 203); open to WSU students.

204 Fourth Semester 4 (3-2) Prereq Nez P 203 with a grade of C or better. Cooperative course taught by UI (NezP 204); open to WSU students.

Russian Courses

Rus

101 First Semester 4 (3-2) Fundamentals of speaking, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Russ 101).

102 Second Semester 4 (3-2) Prereq Rus 101 with a grade of C or better, or equivalent. Continued development of basic skills in speaking, listening, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Russ 102).

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. Cooperative course taught by WSU, open to UI students (Russ 105). S, F grading.

120 Russian Culture 3 Taught in English. Russian culture to 1917. Cooperative course taught by WSU, open to UI students (Russ 120).

121 [G] Contemporary Russian Culture 3 Taught in English. Current cultural and social trends in the former USSR. Cooperative course taught by WSU, open to UI students (Russ 121).

130 [H] Masterpieces of Russian Literature in Translation 3 Taught in English. The masterpieces of the great Russian and Soviet writers of the 19th and 20th centuries. Cooperative course taught by WSU, open to UI students (Russ 130).

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 Rus 102 with a grade of C or better, or equivalent. 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 (Russ 203).

204 Fourth Semester 4 (3-2) Prereq Rus 203 with a grade of C or better, or equivalent. 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 (Russ 204).

205 Intermediate Conversation I 1 May be repeated for credit; cumulative maximum 2 hours. Prereq Rus 203 or 204 or equivalent or c/c in Russ 203 or 204. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Russ 205). 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 V 1-2 May be repeated for credit; cumulative maximum 2 hours. Prereq one Rus 200-level course or c/c in a Rus 200-level course. Conversation practice in small groups. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Russ 305). S, F grading.

306 Intermediate Reading and Translation 3 Prereq Rus 204 with a grade of C or better, or equivalent. Vocabulary building contrastive English-Russian expressions, development of skills to increase reading speed and fluency.

307 Intermediate Speaking and Listening 3 Prereq Rus 204 with a grade of C or better, or equivalent. Systematic development of speaking and listening proficiency. Cooperative course taught by WSU, open to UI students (Russ 307). S, F grading.

308 [M] Intermediate Grammar and Writing 3 Prereq Rus 204 with a grade of C or better, or equivalent. 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 with a grade of C or better, or equivalent. Applied language skills useful in a professional or business environment.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

405 Advanced Conversation 1 May be repeated for credit; cumulative maximum 2 hours. Prereq Rus 305; oral proficiency interview. Advanced-level conversation practice in small groups with a native speaker. Cooperative course taught by WSU, open to UI students (Russ 405). S, F grading.

410 [T] Russian Film 3 Prereq one Tier I; 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 (Russ 410).

412 Government and Politics of the Former Soviet Union 3 Same as Pol S 412.

430 [T] St. Petersburg 3 Prereq one Tier I; 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 (Russ 430).

450 [M] Seminar in Russian Studies - Themes 3 Prereq two Rus 300-level courses excluding Rus 305. Seminar focusing on a particular theme. Taught in Russian.

462 History of Imperial Russia 3 Same as Hist 462.

463 [M] History of the Soviet Union 3 Same as Hist 463.

466 [T] History of the Cold War, 1944-present 3 Prereq one Tier I; three Tier II courses. 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.

102 Second Semester 4 (3-2) Prereq Span 101 with a grade of C or better, or equivalent. Cooperative course taught by WSU, open to UI students (Span 102). 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) Span 102 with a grade of C or better, or equivalent. 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, or equivalent. 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 May be repeated for credit; cumulative maximum 2 hours. Prereq Span 203 or 204 or equivalent or c// in Span 205 or 204. 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 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

207 Intermediate Speaking and Listening 1 Prereq Span 204 with a grade of C or better, or equivalent. Systematic development of speaking and listening proficiency; emphasis on pronunciation and phonetics. Not open to native speakers except with permission. S, F grading.

208 Intermediate Grammar and Writing 1 Prereq Span 204 with a grade of C or better, or equivalent. Writing practice in the language and active review of grammar. Not open to native speakers except with permission.

209 Spanish for Native Speakers 3 (3-2) Prereq Span 203 with a grade of C or better, or equivalent. 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 either Span 306, 307, or 308. Study of important Spanish films. Taught in Spanish. Cooperative course taught by Ul (Span 391), open to WSU students.

311 Latin American Film 3 Prereq either Span 306, 307, or 308. Variable content seminar that focuses on the study of culture through films; taught in Spanish.

320 Peninsular Spanish Culture 3 Prereq either Span 306, 307, or 308. Study of the culture of Spain. Taught in Spanish.


346 Topics in Latina/o Literature 3 Prereq CES 101. Same as CES 354.

350 Introduction to Peninsular Spanish Literature 3 Prereq either Span 306, 307, or 308. Introduction of literary analysis and the history of literature in Spain.

351 Introduction to Latin American Literature 3 Prereq either Span 306, 307, or 308. Introduction to literary analysis and the history of literature in Latin America. Taught in Spanish.

361 Spanish for the Professions 3 Prereq either Span 204, 309, or equivalent. 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.

405 Advanced Conversation 1 May be repeated for credit; cumulative maximum 2 hours. Prereq Span 305; oral proficiency interview. Advanced-level conversation practice in small groups with a native speaker. S, F grading.

406 Advanced Speaking and Listening 3 Prereq Span 307, or equivalent. Systematic development of speaking and listening proficiency at the advanced level.

408 [M] Advanced Grammar and Writing 3 Prereq Span 308, or equivalent. Development of advanced proficiency in writing.

420 [T] Cultural Topics 3 Prereq one Tier I; three Tier II courses. Variable content on Peninsular and/or Latin American cultural topics.

430 [T] Masterpieces in Spanish Literature 3 Prereq one Tier I; three Tier II courses. Taught in English. Variable topic seminar on Spanish literature.

450 [M] Seminar in Spanish Studies - Themes 3 May be repeated for credit; cumulative maximum 6 hours. Prereq two Span 300-level courses excluding Span 305. Seminar on important themes in Spanish studies. Taught in Spanish.

451 [M] Seminar in Spanish Studies - Authors 3 May be repeated for credit; cumulative maximum 6 hours. Prereq two Span 300-level courses excluding Span 305. Seminar on important authors in Spanish studies. Taught in Spanish.

452 [M] Seminar in Spanish Studies - Genres 3 May be repeated for credit; cumulative maximum 6 hours. Prereq two Span 300-level courses excluding Span 305. Seminar on important genres 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.

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. Prereq graduate standing or permission of instructor.

555 Seminar in Colonial Spanish American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing or permission of instructor. Seminar on conquest and colonial literature in Hispanic America.

556 Seminar in Nineteenth-Century Spanish American Literature 3 Prereq graduate standing or permission of instructor. Study of nineteenth-century Spanish American Literature. May be repeated for credit; cumulative maximum 6 hours.

557 Seminar in Twentieth-Century Spanish American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing or permission of instructor. 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. Prereq graduate standing or permission of instructor.

559 Special Topics in Hispanic Studies and/or Linguistics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing or permission of instructor. Special interdisciplinary topics in Hispanic studies and/or linguistics.

560 Beginning Instructional Practicum 2 Prereq graduate standing or permission of instructor. An introduction to foreign language instruction for beginning teaching assistants.
561 Advanced Instructional Practicum 1 May be repeated for credit; cumulative maximum 4 hours. Prereq graduate standing or permission of instructor. 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. 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.

General Education Courses

Description of Courses

General Education Courses

See the General Education Program section of this catalog for a complete description of the General Education Program. Vancouver students should refer to the Vancouver Campus information.

GenEd

104 Freshman Seminar 2 Introduction to college level research & writing, including analysis of source material, disciplinary/interdisciplinary discourse, and development of critical thinking. 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 level research & writing, including analysis of source material, disciplinary/interdisciplinary discourse, and development of critical thinking. 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) May be repeated for credit; cumulative maximum 5 hours. Prereq concurrent enrollment in a Writing in the Major course or a course that assigns writing. Assigned tutorials in the WSU Writing Lab. 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 role in deciding on a suitable curriculum of study.

The General Studies programs are offered by the College of Liberal Arts and the College of Sciences. The degrees offered through Liberal Arts are the Bachelor of Arts in Humanities, Bachelor of Arts in Social Sciences, and Bachelor of Liberal Arts. The degree offered through Sciences is the Bachelor of Science. These degrees are not identified with a specific subject-matter field on the diploma.

Students who wish to enroll in General Studies should contact the appropriate coordinator in Liberal Arts or Sciences.

For complete program information, see the Liberal Arts, General Studies Program, and the Sciences, General Studies Program, in this catalog.

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.sees.wsu.edu
Webster 1228
509-335-3009

Please see the School of Earth and Environmental Sciences in this catalog for information about Geology.

Global Studies

www.ip.wsu.edu/global
International Programs, Bryan 206
509-335-2541

Director and Associate Professor, A. Appleton.

Global studies looks at economic, political, social, cultural, and scientific practices in a trans-national and cross-cultural perspective. An undergraduate minor in global studies encourages a student in any major discipline to think in terms of the globalization that marks the contemporary world. The program of study designed to provide an exciting interdisciplinary global perspective on the arts, humanities, social sciences, and sciences. The minor is flexible and complements 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 global studies minor gives students from all major disciplines a competitive edge in the global job market. Graduates in any field find that the unique combination of flexible coursework gives them the skills and background to work in their chosen fields
in an international environment. It helps build the attributes of the successful global citizen, someone who is capable of understanding and mastering the complexity of diverse intercultural contexts.

**Minors**

**Minor in Global Studies**
The minor requires 18 credit hours. Students should select one track from the three listed in the course requirements, and one module from those listed within each track. Some courses may be substituted with the approval of the Director of Global Studies. In particular, many course equivalents may be taken through a study abroad program, and students are encouraged to discuss these with the Director of Global Studies. Additional courses may be included within the minor as developed in the university curriculum.

**TRACK I - Language and Civilization:** Choose one from Com 321, Engl 222, F A 202, For L 101, 110, 120, 130, or 220.

Choose 3 courses from one of the following modules:


Language: 2 semesters of second year foreign language required.

**TRACK II - Global Communities:** Choose one from Anth 203, CES 212, For L 120, 220, Phil 101, Pol S 102, 103, or W St 332.

Choose 5 courses from one of the following modules:


Language: 2 years of high school or 2 semesters of university foreign language courses required. Additional foreign language study is strongly recommended.

**TRACK III - Technology and Global Society:** Choose one from Arch 202, CropS 360, ES/RP 101, F A 331, For L 120, 220, FSHN 170, Geol 210, NATRS 202.

Choose 5 courses from one of the following modules:


Language: None required but foreign language study is strongly recommended.

**Health Policy and Administration**

[www.hpa.spokane.wsu.edu](http://www.hpa.spokane.wsu.edu)

Academic Center Bldg., Suite 411

509-358-7980

Professor and Chair, W. C. Schmidt; Professors, J. S. Coyne, D. A. Sclar, T. L. Sklar; Associate Professors, M. M. Alhern, F. Akinci, J. Kennedy

The Department of Health Policy and Administration (HPA) 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; Marketing for Health Care Organizations); 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). 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 Graduate 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 [http://www.hpa.spokane.wsu.edu](http://www.hpa.spokane.wsu.edu).

**Description of Courses**

**Health Policy and Administration Courses**

**HPA**

- **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 1 Prereq graduate standing. Basic marketing concepts, principles, and issues related to marketing public and private health care.

572 Health Care Ethics 3 Ethical issues affecting health care institutions, professionals and consumers.

573 Comparative International Health Care 3 Analysis of key attributes of health care in selected countries and comparisons with the US health care system.

574 Rural Health Care in America 3 The unique characteristics, professional opportunities, problems and reform alternatives in rural health care.

579 Mental Health Policy and Law 3 Professions regulation, negligence, consent, privacy; civil commitment, treatment rights, guardianship, trial competency, insanity defense, sex offenders, execution capacity, entitlements, discrimination.

580 Disability and Aging Policy 3 Prereq graduate standing. Policy aspects of disability, aging and chronic illness; including work disability, health and long term care, rationing, gender and class.

590 Strategic Management and Marketing 3 Prereq HPA S11, S15. Key components and processes in strategic planning.

597 Internship V 1-5 May be repeated for credit; cumulative maximum 5 hours. Prereq HPA 500. Student experience in professional work settings. S, F grading.

599 Special Topics in Health Policy and Administration V 1-3 May be repeated for credit; cumulative maximum 9 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.

Program in Health Sciences, WSU Spokane

Associate Professor and Director of the Program in Health Sciences, S. E. Blank; Associate Professors, E.C. Johnson, M. Houghton (University of Idaho); Clinical Assistant Professors, J. Beary, S. Kynast-Gales, R.B. Latz (adjunct); M. Mulkin (adjunct); Clinical Instructors, J. Knaul, J. Troppmann (adjunct).

The Bachelor of Science in Exercise Physiology and Metabolism is a unique, interdisciplinary undergraduate degree in the health sciences that focuses on the biological and social/psychological inter-relationships 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 nutrition.

The degree 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, practicums, and a semester-long internship focusing on exercise physiology and nutrition. The curriculum for the B.S. in Exercise Physiology and Metabolism is endorsed by the American College of Sports Medicine for meeting the Knowledge, Skills, and Abilities standards required for Exercise Specialist® certification.

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 exercise and nutrition programming 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 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, and pulmonary rehabilitation; community health centers; sports nutrition; university and worksite wellness programs; exercise and health promotion, commercial fitness centers; and personal and sports-specific training. Graduates who complete an approved clinical internship will be qualified to test for American College of Sports Medicine Exercise Specialist® certification. In addition, all graduates with a B.S. in Exercise Physiology and Metabolism may 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 a 10-week internship.

Schedules of Studies

Students must complete 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 (132 HOURS)

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>Biol 102 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>English 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Stat 205 [N] (GER)</td>
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<tr>
<td>Second Term</td>
<td></td>
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<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
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<tr>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>MvtSt 262 or Biol 315</td>
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<tr>
<td>Psych 105 [S] (GER)</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>
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<tr>
<td>Biol 251</td>
<td>4</td>
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<tr>
<td>Chem 345</td>
<td>4</td>
</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Phil 260 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>
FSHN 233  
MBioS 101  
MBioS 303  
Complete Professional Preparation  
ExMet  
 nor, students will be eligible to take the registration in Physiology and Metabolism degree and the CPD minimum. Upon successful completion of the BS Exercise or better in all courses within the BS ExMet curriculum, and ExMet 401, 437, 451 and 440. Students applying to Exercise Physiology and Metabolism program, and  
ExMet 402  
ExMet 435  
ExMet 465 [M]  
Second Term Hours  
ExMet 362  
ExMet 402  
ExMet 435  
ExMet 465 [M]  
ExSci 476  
Third Term Hours  
Fourth Year  
Engl 402 [W] (GER)  
ExMet 458  
ExMet 473  
ExMet 478  
ExMet 479  
Second Term Hours  
ExMet 450  
ExMet 470  
ExMet 480  
Tier III Course [T] (GER)  
Third Term Hours  
ExMet 490  
Minors  
Coordinated Program in Dietetics  
The minor in the Coordinated Program in Dietetics requires 29 hours and includes the following: ExMet 401, 437, 451 and 440. Students applying for the minor must be certified majors in the BS Exercise Physiology and Metabolism program, and must have a minimum 3.00 cumulative GPA and a C or better in all courses within the BS ExMet curriculum. Upon successful completion of the BS Exercise Physiology and Metabolism degree and the CPD minor, students will be eligible to take the registration examination to become Registered Dietitians.  
Description of Courses  
Exercise Physiology and Metabolism Courses  
ExMet  
300 Professional Preparation 2 PreReq junior standing certified exercise physiology and metabolism major. ADA and ACSM standards of practice, code of ethics; societal and cultural issues that impact the health care industry.  
320 Strength Training and Conditioning: Theory and Application 4 PreReq Biol 251; Biol 315 or MvtSt 262. Application of scientific principles of strength and conditioning as it relates to exercise training and sports.  
340 Foods with Application to 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.  
362 Biomechanical Analysis 3 PreReq [N] GER math course; MvtSt 262 or Biol 315. Applied sport, clinical and occupational biomechanics.  
400 Macronutrient Metabolism 3 PreReq FSHN 233, MBioS 303. Digestion, absorption, and metabolism of carbohydrates, protein and fats, and their utilization for energy.  
401 Community Supervised Practice 9 PreReq completion of all exercise physiology and metabolism requirements through the 4th year. Advanced principles of community dietetic nutrition education along with hands-on community supervised practice experience.  
402 Vitamin and Mineral Metabolism 2 PreReq ExMet 400. Absorption and metabolism of vitamins and minerals and their role in macronutrient metabolism and nutritional requirements for maintenance of health.  
427 Nutritional Assessment and Lifestyle Counseling 3 (2-3) PreReq FSHN 233, Psych 105. Basic skills and concepts of nutrition assessment and lifestyle counseling of ambulatory adults using dietary intake, menu planning and communication skills.  
435 Exercise, Diet and Disease 4 PreReq ExMet 400; ExMet 402; ExSci 463. Pathophysiology of disease and implications for dietary and exercise interventions.  
437 Diet Therapy 4 PreReq completion of all exercise physiology and metabolism requirements through the 4th year. Theoretical and practical base for diet modification and nutritional therapy in health and a variety of disease states. Cooperative course taught by UI (FCS 363), open to WSU students.  
440 Clinical Supervised Practice 11 PreReq completion of all exercise physiology and metabolism requirements through the 4th year. Professional supervised experience offsite in clinical dietetics. Meets American Dietetic Association requirements for registration eligibility. S, F grading.  
450 Management and Facilities 3 PreReq senior standing; certified exercise physiology and metabolism major. Essential skills and guidelines for those in the health facility industry in establishing and maintaining a safe and proper facility.  
451 Management Practices in Food Science 5 (1-11) PreReq completion of all exercise physiology and metabolism requirements through the 4th year. Advanced principles of food systems; institutional food service management along with offsite, hands-on food service supervised practice experience.  
458 Nutrition and Exercise Throughout the Life Cycle 4 PreReq senior standing in exercise physiology and metabolism. Physical activity relating to nutritional needs and dietary patterns from infancy through old age and including maternal nutrition. Cooperative course taught by UI (FCS 486), open to WSU students.  
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.  
473 Nutrition in the Community 2 PreReq completion of all exercise physiology and metabolism requirements through the 4th year. Public health nutrition including assessment of communities, problem list development, program planning and an overview of existing programs and services. Cooperative course taught by UI (FCS 473), open to WSU students.  
478 Electrocardiography, Medications and Procedures 3 (2-3) PreReq ExMet 435; ExSci 463; ExSci 476. Development of ECG interpretation skills, including 12-leads, with emphasis on procedures and impact of medication in resting and exercising persons.  
479 Nutrition and Exercise Practicum 3 (1-6) May be repeated for credit; cumulative maximum 6 hours. PreReq ExMet 300; ExMet 400; ExMet 427; ExMet 435; ExMet 465; ExSci 463; ExSci 476. Supervised experience in applying exercise and nutrition assessment techniques and developing exercise and nutrition prescription for normal and diseased subjects.  
480 Cardiopulmonary Rehabilitation 4 (3-3) PreReq ExMet 435; ExMet 465; ExMet 478; ExSci 463; ExSci 476. Principles and applications of exercise and nutrition assessment/ prescription and program management to cardiopulmonary and rehabilitation situations and populations.  
490 Nutrition and Exercise Internship 10 PreReq completion of all coursework for BS in Exercise Physiology and Metabolism. Supervised on-site exercise and nutrition field experience to assess normal and diseased clients and develop/apply nutrition and exercise prescriptions. S, F grading.  
Exercise Science Courses  
ExSci  
463 Advanced Exercise Physiology 4 (3-3) PreReq Biol 251; Biol 315 or MvtSt 262. Advanced undergraduate exercise physiology with emphasis on mechanisms regulating physiological responses to exercise across the life span.
476 Exercise Testing and Prescription 3
(2-3) Prereq ExSci 463. Principles of exercise testing and prescription based on current practices in physical education, physiology, and rehabilitation.

501 Special Topics 3 Prereq admission to Clinical and Experimental Exercise Science graduate program. Special topics in exercise physiology and metabolism.

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 Biogenetics 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 intergration 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 Variable credit. S, F grading.

Department of History
libarts.wsu.edu/history
Wilson 301
509-335-5139


Offerings in the field of history may be classified as American, Asian, European, and Latin American.

The Department of History's Undergraduate Degree Program is designed to produce several outcomes. We expect students who complete the requirements for an undergraduate major in History to: 1) express sophisticated and abstract concepts clearly in writing; 2) be familiar with the nature of historical argument and methodologies; 3) frame research topics and do research at an appropriate undergraduate level; 4) have a mastery of the broad outlines of historical developments, themes, issues, and patterns; 5) develop critical thinking skills that will allow and encourage them to become life-long learners.

A major in history can be used in government service, the new specialty of public history teaching, 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 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 (131 HOURS)

Students who wish to earn a teaching credential must apply to the Teacher Preparation Program in the College of Education. They should consult with an advisor in history about choosing additional electives that may apply toward a minor or second major and that complement a history endorsement.

To certify in the History Education option, a student must have earned at least a 2.50 cumulative GPA.

The History Education major consists of 42 hours: 36 hours of History, including Hist 101, 102, 110, 111; one course from two of the following four sets: Hist 230, 231, 270-271, 272, 273, 275; and one more non-western/global course (for a total of three in this category); 21 hours of 300-400-level History, which must include 300, 422, 469; and 480. EconS 102, Pol S 101, and Psych 105 are also required to meet state certification guidelines (these can also fulfill GERs). 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist 101 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
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Second Term

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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<tr>
<td>EconS 102 [S], Pol S 101 [S], or Psych 105 [S] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<td>Hist 102</td>
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Second Year

First Term

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<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<td>EconS 102 [S], Pol S 101 [S], or Psych 105 [S] (GER)</td>
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<tr>
<td>Hist 200-level course</td>
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Second Term

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<tbody>
<tr>
<td>EconS 102 [S], Pol S 101 [S], or Psych 105 [S] (GER)</td>
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<tr>
<td>Hist 111 [S] (GER)</td>
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<tr>
<td>Hist 200-level course</td>
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<td>Intercultural Studies [L,G,K] (GER)</td>
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<td>T &amp; L 300</td>
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Third Year

First Term

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<th>Course</th>
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<tbody>
<tr>
<td>300-400-level Hist Electives</td>
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<tr>
<td>Hist 300 [M]</td>
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Second Term

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<tbody>
<tr>
<td>300-400-level Hist Elective</td>
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<tr>
<td>Hist 422</td>
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<td>Science GER [B,P] if needed for a total of 12 credits</td>
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Fourth Year

First Term

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<th>Course</th>
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<tr>
<td>300-400-level Hist Elective</td>
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<tr>
<td>Hist 469 [M]</td>
<td>3</td>
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<tr>
<td>T &amp; L 464</td>
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</tr>
<tr>
<td>T &amp; L 465</td>
<td>3</td>
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<tr>
<td>T &amp; L 466</td>
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Second Term

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>EdPsy 468</td>
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<tr>
<td>Hist 480</td>
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<tr>
<td>T &amp; L 467</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 469</td>
<td>2</td>
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<td>T &amp; L 470</td>
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### Fifth Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>T &amp; L 415</td>
<td>16</td>
</tr>
</tbody>
</table>

1. Pol S 101 and EconS 102 are state requirements for teacher certification in history and are recommended to fulfill GER requirements; Psych 105 is required for admission to the Teacher Preparation Program.
2. One from Engl 201, 301, 302 is required for admission to the Teacher Preparation Program.
3. History education majors must choose their 12 hours of 300-400 electives from the following: one from Hist 411, 413, 414, 415, 416, one from Hist 412, 417, 418, 419, one from European history course list (see advisor) and one from world history course list (see advisor).

### 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

<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>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>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
</tr>
<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
<td>3</td>
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<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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### Second Year

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<th>First Term</th>
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<tbody>
<tr>
<td>100-200-level Hist Electives</td>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Second Term</td>
<td>Hours</td>
</tr>
<tr>
<td>100-200-level Degree Program Course</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Hist Electives</td>
<td>6</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>Foreign Language, if necessary, or Elective</td>
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<tr>
<td>Complete Writing Portfolio</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>
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<tr>
<td>300-400-level Hist Electives</td>
<td>6</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
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<tr>
<td>Hist 300 or Hist Elective (any level)</td>
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### Fourth Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Degree Program Course</td>
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<tr>
<td>300-400-level Hist Electives</td>
<td>6</td>
</tr>
<tr>
<td>Hist 300</td>
<td>3</td>
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### Pre-Law 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 Hist; 3 hours of additional Hist; 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, 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.

To certify in the history pre-law option, a student must have earned at least a 2.50 cumulative GPA.

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

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
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<td>Science Elective (GER)</td>
<td>4</td>
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<tr>
<td>Second Term</td>
<td>Hours</td>
</tr>
<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
<td>3</td>
</tr>
<tr>
<td>ComSt 102 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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</table>

### Pre-Law Option

1. History Electives must include 6 hours US history, 6 hours European history, and 9 hours Non-Western/Global history.
2. Courses in the same or in related disciplines with the advisor's approval; students are encouraged to explore, in consultation with their advisor, a double-major or minor in a complementary subject field.

### Pre-Law Option (120 Hours)

3. Pre-Law requirements (may also fulfill GER requirements) – Political Science: Pol S 300 and two courses from 101, 102, 198 or 206; Business/accounting: two courses from EconS 101, 102, 198, Accct 230, B Law 210 or Fin 323; Social Sciences/Humanities: one course each from [Anth 101 or 198], [Phil 201, 260, 360, 370 and 470], [Psych 105 or 198] and [Soc 101 or 198]; English: one course from Engl 201, 301 or 402.

4. 100-200 level History electives. Choose from 101, 102, 110, 111, 230, 231, 270, 272, 273, 275

5. 300-400 level history electives. The following courses are recommended to fulfill upper-division requirements: European History: 341, 342, 343, 440, 441, 444, 445, 446, 452, 453, 455, 459, 488, 489; American/U.S. History: 414, 415, 416, 417, 418, 419, 420, 423

### Social Studies Education Option (137 Hours)

Social Studies is a major for students who plan to earn both a BA and a teaching endorsement in the multidisciplinary fields of history and the social sciences: anthropology, economics, geography, political science, psychology, sociology. Social Studies majors who wish to earn a teaching credential must apply to the Teacher Preparation Program in the College of Education. They should consult with an advisor in history about choosing additional electives that may apply toward a minor or second major and that complement a Social Studies endorsement.

To certify in Social Studies, a student must have earned at least a 2.50 cumulative GPA.

The social studies education major consists of 63 hours: lower-division (30 hours) to include Hist 101, 102, 110, 111; one course from two of the following four sets: Hist 230 231, 270, 271, 272 273, 275; one
from Anth 101, 198, 203, 260; EconS 102; Pol S 101; Soc 101. Upper-division (30 hours): 15 hours of history, to include 422, one European, one non-western/global, and one American/U.S. course; 15 hours of social sciences, to include one from EconS 320, 327, 416, 427, 430 [T]; one from geography (Anth 309, Hist 319, 495); one from Pol S 300, 316, 427, 450, 455 or Cmrj 320; and 6 additional hours from Anth 307, 316, 320, 330, 350; Psych 310, 324, 361, 470; 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

First Term

- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Hist 101 [H] (GER) 3
- Math Proficiency [N] (GER) 3 or 4
- Science Elective (GER) 4

Second Term

- Anth 101 [K] (GER) 3
- Biological [B] or Physical [P] Sciences (GER) 4
- Hist 102 [H] (GER) 3
- Soc 101 [S,D] (GER) 3

Second Year

First Term

- Biological [B] or Physical [P] Sciences (GER) 4
- EconS 102 [S] (GER) 3
- Hist 110 [S] (GER) 3
- Hist 200-level course $^1$ 3
- Pol S 101 [S] or Psych 105 [S] (GER)$^2$ 3

Second Term

- Engl 201 [W], 301 [W], or 302 [W] (GER) 3
- Hist 111 [S] (GER) 3
- Hist 200-level course $^1$ 3
- Pol S 101 [S] or Psych 105 [S] (GER)$^2$ 3
- T & L 300 1

Complete Writing Portfolio

Third Year

First Term

- 300-400-level Hist Electives$^4$ 6
- Anth/Psych/Soc electives from list$^3$ 3
- T & L 301 2

Second Term

- Anth/Psych/Soc electives from list 3
- Geography Elective from list 3
- Hist 422 3
- Pol S Elective from list 3
- Science GER [B,P] if needed for a total of 12 credits 1
- T & L 317 2

Fourth Year

First Term

- 300-400-level Hist Elective$^4$ 3
- T & L 464 3
- T & L 465 3

T & L 466 2
Tier III Course [T] (GER)$^3$ 3

Second Term

- 300-400-level Hist Elective$^4$ 3
- EdPsy 468 3
- Hist 480 3
- T & L 467 3
- T & L 469 2
- T & L 470 3

Fifth Year

First Term

- T & L 415 16

$^1$ Choose 2 from 2 categories: 230, 231; 270, 271; 272, 273, 275.
$^2$ Psych 105 is required for admission to the Teacher Preparation Program; one from Engl 201, 301, 302 is also required for admission.
$^3$ An approved seminar, Hist 469 or Soc 320, may double-count as a major course.
$^4$ Social studies majors must choose their 12 hours of 300-400 electives from the following: one from European history list, one from world history list, one from American/U.S. history list and one additional elective.

Tier III course may double-count as a major course.

Minors

Minor in 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 and at least 9 hours must be taken at WSU.

Description of Courses

History Courses

Hist

101 [H] Classical and Christian Europe
Greece and Rome, birth of Christianity and Islam, Middle Ages, Renaissance, Reformation, religious wars, Louis XIV.

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.

110 [S] American History to 1877
Social, economic, cultural history of British mainland colonies/United States to 1877.

111 [S] American History Since 1877
Social, economic, cultural history of United States, 1877 to present.

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.

198 [S] History Honors
Open only to students in the Honors College.

201 [K] Asian/Pacific American History
Same as CES 211.

205 [H,D] African American History
Same as CES 235.

216 [S,D] American Cultures
Same as Am St 216.

230 [K] Latin America, The Colonial Period
Overview of the most significant events, social and ethnic groups, practices, and institutions of colonial Latin America.

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.

255 [S,D] Chicana/o History
Same as CES 255.

270 [K] India: History and Culture
Development of civilization; and contemporary societies of India and South Asia.

271 [K] Southeast Asian History: Vietnam to Indonesia
Historical introduction to Southeast Asian social, religious, political, economic and cultural institutions including Vietnam, Thailand, Burma, the Philippines and Indonesia.

272 [I] Introduction to Middle Eastern History
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
Main ideas and institutions that have characterized Islamic civilization since its founding, presented thematically.

275 [K] Introduction to East Asian Culture
Civilizations of China and Japan.

280 [S,D] Race and Law in American History
Same as CES 280.

290 [S] Honors History II
Introductory to social science research through a historical lens.

298 [S,D] History of Women in American Society
The roles of women—social, economic, political—in American history from colonial times to the present.

300 [M] Writing about History
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
Same as Anth 306.

308 [K] North American Indian History, Precontact to Present
History of North American Indian peoples from circa 1350 to the present.

313 [S] Black Freedom Struggle
Same as CES 335.

314 [H,D] American Roots: Immigration, Migration, and Ethnic Identity
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
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 States 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.

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.

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] History of Ancient and Medieval India 3 Historical development to 1500 CE of states, religions, caste society, gender customs and social ecology in India.

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 May be repeated for credit; cumulative maximum 6 hours. Prereq junior status; 6 hours of Hist. 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 Prereq Anth 320, CES 171, 375, 377, or Hist 308; completion of one Tier I and three Tier II courses. 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.

413 [M] Early American History to 1750 3 The cultures and interactions of Native Americans, Europeans, and Africans; development of colonial American societies and institutions.

414 The Era of the American Revolution 3 The origins of the American Revolution, the War of Independence, and the emergence of republican government and society.

415 Jefferson-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.

416 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.

417 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.

418 United States, 1914-1945 3 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.

419 United States, 1945-Present 3 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.

420 American Constitutional History 3 Prereq Hist 110 or Pol S 101. Credit not granted for both Hist 420 and 520.

421 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.

422 History of the Pacific Northwest 3 Political, social economic and environmental history of the Pacific Northwest. Fulfills the teaching certification requirement for Washington state history. Credit not granted for both Hist 422 and 522.

423 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.

425 [T] 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.

426 [T] Workers Across North America 3 Prereq completion of one Tier I and three Tier II courses. Same as CES 426.

427 [M] 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.

430 [M] 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.
432 20th Century Latin America 3
Contemporary developments, policies and trends in the Latin American states. Credit not granted for both Hist 432 and 532.

433 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 433 and 533.

434 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 434 and 534.

435 [T] 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.

436 [T] 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.

437 Topics in History—Study Abroad 3
3 May be repeated for credit. S, F grading.

439 Slavery, Abolition and Emancipation in World History 3
Prereq junior standing. History of slavery and abolition as a worldwide phenomena; trends and debates in historiographical literature.

440 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.

441 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.

444 [T] The Renaissance 3
Prereq completion of one Tier I and three Tier II courses. Political, cultural, and religious history of Europe, 1300-1500.

445 The Reformation 3
Political, cultural, and religious history of Europe, 1500-1650.

447 Europe in the French Revolutionary and Napoleonic Era, 1789 to 1815 3
Credit not granted for both Hist 447 and 547.

448 Modern Europe as Reflected in Art 3
Early Modern Europe as reflected in architecture and the visual arts.

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.

450 [M] 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.

453 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.

454 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.

461 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).

462 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.

463 [M] History of the Soviet Union 3
The Russian revolutions and the Soviet regime: 1905 to the present. Credit not granted for both Hist 463 and 563.

464 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.

466 [T] 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.

467 Modern France 3
The history of France from the revolution of 1789 to the present.

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.

Prereq completion of one Tier I and three Tier II courses. British India, Gandhi and development of satyagraha in the Indian independence movement and its use in the US civil rights struggle.

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.

474 Modern South Asia: Community and Conflict 3
Historical transformation of communities and communal conflicts in modern South Asia from 1500 to present; themes: caste, religion, geography, environment and economy.

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.

Examination of political, socioeconomic and cultural changes and the international crises in modern Japan since the 19th century. Credit not granted for both Hist 477 and 577.

479 [T] History of East Asian Economic Development Since 1945 3
The historical relationships between politics and economics in East Asia since 1945.

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 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.

494 [T] Global Environmental History 3
Historical dynamics of human communities and their ecological settings.

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.

514 Jeffersonian-Jacksonian America 3 Graduate-level counterpart of Hist 415; additional requirements. Credit not granted for both Hist 415 and 514.

515 Civil War and Reconstruction 3 Graduate-level counterpart of Hist 416; additional requirements. Credit not granted for both Hist 416 and 515.

516 Rise of Modern America 3 Graduate-level counterpart of Hist 417; additional requirements. Credit not granted for both Hist 417 and 516.

517 United States, 1914-1945 3 Graduate-level counterpart of Hist 418; additional requirements. Credit not granted for both Hist 418 and 517.

518 United States, 1945-Present 3 Graduate-level counterpart of Hist 419; additional requirements. Credit not granted for both Hist 419 and 518.

519 American Constitutional History 3 Prereq Hist 110 or Pol S 101. Graduate-level counterpart of Hist 420; additional requirements. Credit not granted for both Hist 420 and 519.

520 The American West 3 Graduate-level counterpart of Hist 421; additional requirements. Credit not granted for both Hist 421 and 520.

521 History of the Pacific Northwest 3 Graduate-level counterpart of Hist 422; additional requirements. Credit not granted for both Hist 422 and 521.

522 Radicals, Reformers, and Romantics: The Impact 3 Graduate-level counterpart of Hist 423; additional requirements. Credit not granted for both Hist 423 and 522.

523 Public History: Theory and Methodology 3 Graduate-level counterpart of Hist 427; additional requirements. Credit not granted for both Hist 427 and 523.

524 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.

525 Interpreting History through Material Culture 3 May be repeated for credit; cumulative maximum 6 hours. Historical interpretation to work on major historic preservation and museum projects.

530 History of Mexico 3 Graduate-level counterpart of Hist 430; additional requirements. Credit not granted for both Hist 430 and 530.

531 20th Century Latin America 3 Prereq graduate standing. Graduate-level counterpart of Hist 432; additional requirements. Credit not granted for both Hist 432 and 531.

532 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 532.

533 Revolution in Latin America 3 Prereq graduate standing. Graduate-level counterpart of Hist 434; additional requirements. Credit not granted for both Hist 434 and 533.

534 Field Course in Latin American History 3 May be repeated for credit.

535 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 535.

536 Europe and Two World Wars, 1914-1945 3 Graduate-level counterpart of Hist 449; additional requirements. Credit not granted for both Hist 449 and 536.

537 Europe Since 1945 3 Graduate-level counterpart of Hist 450; additional requirements. Credit not granted for both Hist 450 and 537.

538 Conservatism, Liberalism, and Socialism: Europe, 1815-1870 3 Graduate-level counterpart of Hist 453; additional requirements. Credit not granted for both Hist 453 and 538.

539 Nationalism and National Conflict: Europe, 1870-1914 3 Graduate-level counterpart of Hist 454; additional requirements. Credit not granted for both Hist 454 and 539.

540 Field Course in Early European History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in European history.

541 History of Imperial Russia 3 Graduate-level counterpart of Hist 462; additional requirements. Credit not granted for both Hist 462 and 541.

542 History of the Soviet Union 3 Graduate-level counterpart of Hist 463; additional requirements. Credit not granted for both Hist 463 and 542.

543 Comparative Genocide 3 Graduate-level counterpart of Hist 464; additional requirements. Credit not granted for both Hist 464 and 543.

544 Modern France 3 Graduate-level counterpart of Hist 467; additional requirements. Credit not granted for both Hist 467 and 544.

545 Hitler and Nazi Germany 3 Graduate-level counterpart of Hist 468; additional requirements. Credit not granted for both Hist 468 and 545.

546 Field Course in Modern European History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in modern European history.

547 World History Theory and Methods 3 May be repeated for credit; cumulative maximum 9 hours. Historiographic overview of the field of world history.

548 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.

549 Middle East Since World War I 3 Graduate-level counterpart of Hist 472; additional requirements. Credit not granted for both Hist 472 and 549.

550 Modern South Asia: Community and Conflict 3 Graduate-level counterpart of Hist 474; additional requirements. Credit not granted for both Hist 474 and 550.

551 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.

552 Revolutionary China, 1800 to Present 3 Graduate-level counterpart of Hist 476; additional requirements. Credit not granted for both Hist 476 and 552.

553 Modern Japanese History 3 Graduate-level counterpart of Hist 477; additional requirements. Credit not granted for both Hist 477 and 553.

554 Field Course in Asian History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in Asian history.

555 Historiography 3

556 American Historiography 3

557 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.

558 Topics in American Studies 3 Graduate-level counterpart of Hist 496; additional requirements. Credit not granted for both Hist 496 and 558.

559 Seminar in History 2 or 3 May be repeated for credit.

560 History Internship V 1-12 Graduate-level counterpart of Hist 498; additional requirements. Credit not granted for both Hist 498 and 560.
599 History Colloquium  May be repeated for credit; cumulative maximum 4 hours. 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

honors.wsu.edu
Honors Hall 130
509-335-4505

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) construct a reasoned and evidence-based position on an issue that takes into account their own and others’ views; (2) use the library catalog, databases, and the Internet to find relevant information while critically evaluating the quality of those information resources; (3) demonstrate respect for different cultural systems and traditions and their contributions to society; (4) choose the appropriate methodology and theoretical framework to solve a problem or answer a question in their discipline; (5) write and speak effectively in different contexts for a variety of audience; and (6) learn to apply quantitative tools and draw conclusions.

Courses offered through the University Honors College are only open to students enrolled in the program. For admissions, 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 footnote 1). 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. The Honors Certificate of Global Competencies requires a thesis with an international topic that is part of a study abroad experience. 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 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
- Science 198 (fall only) and Science 199 (spring only).
  Both required for non-science majors:
  Note: Science majors taking biological science and physical science laboratory courses for their majors fulfill this requirement with those courses.

Sophomore or Junior Year
- U H 300 or 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 430 (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, academicwork, and study abroad. Students receive a notation on their transcript IN ADDITION to 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 at 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).

Description of Courses

University Honors Courses

A S 198 - Animal Science Honors
Anth 198 - Anthropology Honors
EconS 198 - Economics Honors
Engl 199 - English Composition and Literature Honors
Engl 298 - Writing and Research Honors
Hist 290 - History Honors
Hum 198 - Humanities Honors
Phil 198 - Philosophy Honors
Phys 205 - Physics Honors I
Phys 206 - Physics Honors II
Honors College

Pol S 198 - Political Science Honors
Psych 198 - Psychology Honors
Sci 198 - Sciences for Honors Students I
Sci 199 - Sciences for Honors Students II
Soc 198 - Sociology Honors

Schedules of Studies

Students must complete 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)

First Year

First Term

Biol 120 or 106 [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

Chem 102 [P] or 106 [P] (GER) 4
GenEd 110 [A] or 111 [A] (GER) 3

DEPARTMENT OF HORTICULTURE AND LANDSCAPE ARCHITECTURE

www.hortla.wsu.edu
Johnson Hall 149
509-335-9503

Professor and Department Chair, W. G. Hendrix;

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, environmental 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 horticulture.

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 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.

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 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 and Landscape Architecture

Hort 202
Math Proficiency [N] (GER) 4

Second Year

First Term

Hours

Arts & Humanities [H,G] (GER) 3
Chem 101 [P] or 105 [P] (GER) 4
Biol 120 [B] (GER) 4

Second Term

Elective 3
Hort 310 4
Env. Hort Elective 3

Third Term

Hours

Summer Session—Hort 399 3

Fourth Year

First Term

Hours

Adv. Plant Sci. Elective 2 3-4
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Environ. Hort Core 3
Environ. Hort Elective 3

Second Term

Elective 3
Env. Hort Elective 3

Third Term

Hours

Supporting Hort Elective 2 3

Fourth Year

First Term

Hours

Adv. Plant Sci. Elective 2 3-4
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Environ. Hort Core 3
Environ. Hort Elective 3

Second Term

Elective 3

Horticulture - Fruit and Vegetable Option (121 Hours)

First Year

Hours

First Term

Biol 120 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3

Second Term

Chem 101 [P] or 105 [P] (GER) 4
ComSt 102 [C] or H D 205 [C] (GER) 3
Cpt S Elective 3
GenEd 111 [A] (GER) 3

Second Year

First Term

Hours

Arts & Humanities [H,G] (GER) 3
Chem 345 4
Hort 310 & 311; 313; or 320 & 321 3 or 4
Hort 334 3

Second Term

Entom 340 or Entom 348/9 2-3
Hort 425 [M] 3
Math Proficiency [N] (GER) 3

Third Year

Hours

Summer Session—Hort 399 3

Fourth Year

First Term

Hours

Hort 310 & 311; 313; or 320 & 321 3 or 4
Hort 356 1
Hort Elective 3

Second Term

Biol 350 3
Entom 340 3
Environ. Hort Elective 3

Third Term

Hours

Supporting Hort Elective 2 3

Fourth Year

First Term

Hours

Hort 310 & 311; 313; or 320 & 321 3 or 4
Hort 418 [M] 3
Tier III Course [T] (GER) 3
Elective 3

Second Term

Hours

FSHN 495 2
Hort 418 [M] 3
Hort Elective 3
Tier III Course [T] (GER) 3
Elective 2

Horticulture - Viticulture and Enology Option (124 Hours)

First Year

Hours

First Term

Biol 120 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3

Second Term

Chem 101 [P] or 105 [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 202 4

Second Year

First Term

Hours

Arts & Humanities [H,G] (GER) 3
Chem 345 4
Hort 313 3
Soils 201 3

Second Term

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biol 320 4
EconS 102 [S] (GER) 3
Hort 251 4
Math Proficiency [N] (GER) 3

Third Year

Hours

Entom 340 3
FSHN 465 or Hort 435 3
Hort 413 3
MBioS 303 3
Pl P 429 3

Second Term

Hours

FSHN 465 or Hort 435 3
Hort 413 3
MBioS 305 3
MBioS 306 2
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 2

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 Degree) (150 Hours)

The professional five-year course of study is divided into two segments. These are 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.

1 Environmental Horticulture Emphasis (12 hours): select a focus area in consultation with a faculty advisor from:
Design: LA 101, 202, 260, and 264.
Business: Acctg 230, Mktg 360, Ag Ec 330, and 350.
2 Advanced Plant Science Electives (9 hours) and must include 3 hours of [M]: Hort 416, 418 [M], Biol 320, 332, 409, or 462.
3 Environmental Horticulture Core (12 hours): Hort 331, 332, 333, 340, 439, or LA 264.
4 Supporting Horticulture Elective (3 hours): Hort 310, 313, or 320.

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Pre-landscape 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.

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, L A 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**

**First Term**
- Biol 120 [B] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math Proficiency [N] (GER) 3

**Second Term**
- Chem 101 [P] (GER) 4
- Communication [C,W] (GER) 3
- F A 101 [H], 201 [H], or 202 [H] (GER) 3
- GenEd 111 [A] (GER) 3
- L A 202 3

**Second Year**

**First Term**
- Hort 231 3
- Intercultural Studies [L,G,K] (GER) 3
- L A 101 3
- L A 260 3
- L A 262 3

**Second Term**
- Graphics Elective 3
- Hort 232 3
- L A 102 3
- L A 263 3
- L A 365 4

**Third Year**

**First Term**
- Biol 372, 462, NATRS 300, or L A 380 3
- Hort 331 3
- L A 362 4
- L A 366 4
- SoilS 201 3

**Second Term**
- AgrTM 346 3
- L A 363 4
- L A 367 3
- Social Sciences [S,K] (GER) 3
- SoilS 374 3

**Fourth Year**

**First Term**
- L A 425 3
- L A 460 5
- L A 467 4
- L A 480 2

**Second Term**
- L A 450 [M] 3
- L A 470 4
- L A 475 2
- Social Sciences [S,K] (GER) 3
- Elective 1 3

**Fifth Year**

**First Term**
- L A 485 4
- Electives 1 9

**Second Term**
- L A 486 [M] 4
- Tier III Course (GER) 3
- Electives 1 9

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.

**Minors**

**Minor in Horticulture**

A minimum of 16 hours in Hort is required, of which at least 8 hours must be in 300-400-level courses excluding Hort 399 and 499. Hort/CropS 202 and 251 are highly recommended. All pass, fail enrollments, and up to 2 credits of Hort 499, must be approved by the department chair.

**Description of Courses**

**Horticulture Courses**

**Hort**

<table>
<thead>
<tr>
<th>Cultivated Plants</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>3 Production strategies, innovative research, utilization and processing techniques of Washington’s major agronomic and horticultural crops.</td>
<td></td>
</tr>
<tr>
<td>113 Vines and Wines</td>
<td>Same as FSHN 113.</td>
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</tbody>
</table>

**Third Year**

150 [Q] Plants and Society 3 (2-3) Plant production systems are used to explore and understand the interrelationships between living systems, the environment, and modern civilization.

202 Crop Growth and Development 4 (3-3) Rec Hort 102; Biol 106, 107, or 120. Morphology, anatomy, growth and development of agronomic and horticultural crops.

231 Landscape Plant Materials I 3 (2-3) Prereq Biol 120 or Hort 202. Rec either Biol 120 or Hort 202. Characteristics, ecology, nomenclature, identification, selection, and use of important woody and herbaceous landscape plant species.

232 Landscape Plant Materials II 3 (2-3) Rec Biol 120 or Hort 202. Continuation of Hort 231.

251 Plant Propagation 4 (3-3) Prereq Biol 107, Biol 120, or Hort 202. Principles and methods of multiplying herbaceous and woody plants and their handling up to useable size. Field trip required.

310 Pomology 3 Prereq biological or plant science course. History, botany, cultivation and uses of temperate-zone tree fruits. Cooperative course taught by WSU, open to UI students (PISC 310).

311 Pomology Laboratory I 1 (1-1) Prereq c// in Hort 310. Practicum in the botany, cultivation and uses of temperate-zone tree fruits. Field trip required. Cooperative course taught by WSU; open to UI students (PISC 311).

313 Viticulture and Small Fruits 3 Prereq biological science, botany, plant science course, or Hort/CropS 202. Botanical relationships, plant characteristics, fruiting habits, location, culture, marketing, and utilization of grapes, berries, and other small or bush fruits. Field trip required.

317 Golf Course Management 1 Prereq CropS 301. Same as CropS 317.

319 Introductory Plant Physiology Laboratory 1 (0-3) Prereq Biol 106 or 120; organic chemistry or c//; Biol 318 or c//. Same as Biol 319.

320 Olericulture 3 Prereq Hort 202. Rec plant science course or SoilS 201. Science, business, and art of vegetable crop production: culture, fertility, growth, physiology, handling, marketing: garden, commercial, greenhouse, tropical, specialty vegetables. Cooperative course taught by WSU, open to UI students (PISC 320).

321 Olericulture Laboratory I 1 (0-3) Prereq c// in Hort 320. Production principles and practices of vegetable crops; plant characteristics, cultivars, 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.

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, L A 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.
326 Vineyard and Winery Equipment Systems 3 (2-3) Prereq Hort 313. Same as AgTM 326.

331 Landscape Plant Installation and Management 3 (2-3) Prereq Biol 120, Hort 202, 231, or 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.

334 Controlled Environments for Horticultural Production 3 Prereq Hort 202. 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 (PSc 234).

340 Nursery Management 3 Management of commercial nurseries from plant propagation through sale of plants. Field trip required. Cooperative course taught by UI (PSc 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 WSU, open to UI students (PSc 341).

346 Landscape Irrigation Systems 3 (2-3) Same as AgTM 346.

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.

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; Biol 320; Hort 313; Chem 345; SoilS 201; senior standing. Rec Stat 212 or 412. 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 202. 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 (PSc 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.

439 Ornamental Plant Production 4 (3-2) Rec Hort 334. Production requirements for spring greenhouse crops; garden center management considerations. Credit not granted for both Hort 439 and 539. Cooperative course taught by WSU, open to UI students (PSc 431).


490 Potato Science 3 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 (PSc 490), open to WSU students.

495 Research Experience V 1-4 May be repeated for credit; cumulative maximum 12 hours. Same as Crops 495.

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.

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.

513 Advanced Viticulture 3 Prereq Biol 120; Hort 313; Chem 345; SoilS 201; Biol 320. Rec Stats 212 or 412. Graduate-level counterpart of Hort 413; additional requirements. Credit not granted for both Hort 413 and 513.

515 Seminar in Molecular Plant Sciences 1 Same as MPS 515.

516 Advanced Horticultural Crop Physiology 3 Prereq Biol 320. 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 Biol 320; Hort 202; 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 (PSc 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 (PSc 533).

535 Chemistry and Biochemistry of Fruit and Wine 3 Prereq Biol 320; MBioS 302, 303; rec analytical chemistry. Graduate-level counterpart of Hort 435; additional requirements. Credit not granted for both Hort 435 and 535.

539 Ornamental Plant Production 4 (3-2) Rec Hort 334. 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 (PSc 531).

590 Potato Science 3 Graduate-level counterpart of Hort 490; additional requirements. Credit not granted for both Hort 490 and 500. Cooperative course taught by UI (PSc 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

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.

222 Landscape Architecture Field Experience I 1 (0-2) May be repeated for credit; cumulative maximum 2 hours. Field trip required. Prereq sophomore standing. Field study of landscapes, designers and design firms through travel experiences.

260 History of Landscape Architecture 4 (3-3) 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.

327 Theory in Landscape Architecture 3 Prereq L A 263; certified major in landscape architecture. Theories and frameworks that inform and emerge from the practices and outcomes of landscape architecture.

333 Landscape Architecture Field Experience II 1 (0-2) May be repeated for credit; cumulative maximum 2 hours. Field trip required. Prereq junior standing. Field study of landscapes, designers and design firms through travel experiences.

362 Landscape Architectural Design III 4 (2-6) Prereq L A 263. 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. 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 L A 263. 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 L A 263. 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 L A 363. Investigation of historical relationships between humans and environment; exploration of major theoretical approaches to design, planning, and management of landscapes.


460 Interdisciplinary Design Studio 5 (2-6) Prereq L A 363. 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 1-4 (2-6) May be repeated for credit; cumulative maximum 6 hours. Prereq Biol 120; Geol 101 or SoilS 201. Application of ecological planning process for landscape inventory and analysis.

470 Landscape Architectural Design V 4 (1-9) Prereq L A 363. Advanced group and individual landscape architectural design and planning projects; professional applications of site design theory and design processes.


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 L A 363. 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 (L A 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 L A 263.

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

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 landscape 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.

560 Interdisciplinary Seminar 3 Prereq graduate standing. Same as Arch 560.

561 Interdisciplinary Seminar II 3 Prereq Arch/I D/L A 560. Same as Arch 561.

600 Special Projects or Independent Study 1-9 Prereq credit S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable Credit. Variable Credit S, F grading.

School of Hospitality Business Management

www.business.wsu.edu/Hospitality Todd Hall Addition 470 509-335-5766

Taco Bell Distinguished Professor and Director W. T. Umbret; Ivar Haglund Distinguished Professor, D. Reynolds; Associate Professors, D. Gursoy, K. Kendall, M.C. Paxson, N. Swanger; Assistant Professors, Geng-qing Chi, H. J. Kim, Culinary Educator; Jim Harbour, Catering Services Manager; Jamie Callison, Academic Coordinator and Instructor; K. Bennett; Professors Emeriti, P. Diaz, L. Kreck, D. Rutherford, D. Smith; Instructor, W. Maynard.
The school provides specialized instruction dealing with the major organizational, managerial, financial, and technical issues relative to hospitality and tourism operations of hospitality businesses. The school prepares graduates for managerial responsibilities in hospitality and tourism 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.

**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 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 (120 HOURS)**

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; EconS 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 on-line. Students will also be ranked based on space availability and academic performance. Students are eligible to petition for consideration of alternative criteria.

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.

An honors senior project is required for Honors students.

### First Year

<table>
<thead>
<tr>
<th>Description of Courses</th>
<th>Hours</th>
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</table>
| First Term
- First Term
  - EngL 101 [W] (GER)                                      | 3     |
  - EconS 101 [S] or EconS 102 [GER]                        | 3     |
- Second Term
  - HBM 131                                                  | 3     |
  - Science [B,P,Q] (GER)                                   | 3     |
  - Second Term
    - EconS 101 [S] or EconS 102 [S] (GER)                   | 3     |
    - HBM 158                                                | 3     |
    - HBM 182                                                | 1     |
    - Math 201                                                | 3     |
    - MgtOp 215                                              | 3     |

### Second Year

<table>
<thead>
<tr>
<th>Description of Courses</th>
<th>Hours</th>
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| First Term
  - Acctg 230                                | 3     |
  - Biological Sciences [B] (GER)              | 3 or 4|
  - Elective                                  | 2 or 3|
  - GenEd 111 [A] (GER)                       | 3     |
  - Math 202 [N] or 205 [N] (GER)             | 3     |
- Second Term
  - Acctg 231                                 | 3     |
  - Arts & Humanities [H,G] (GER)              | 3     |
  - B Law 210                                 | 3     |
  - HBM 258 or 280                            | 2 or 3|
  - MgtOp 215                                 | 4     |

### Third Year

<table>
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<tr>
<th>Description of Courses</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td>3</td>
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</tbody>
</table>
  - EngL 402 [W] or 403 [W] (GER)             | 3     |
  - Fin 325                                    | 3     |
  - HBM 358                                    | 3     |
  - HBM Elective                               | 3     |
  - MgtOp 301                                  | 3     |
| Second Term
  - HBM 381 [M]                               | 3     |
  - HBM 491                                    | 3     |
  - Mktg 360                                   | 3     |
  - Physical Sciences [P] (GER)                | 3 or 4|
  - Soc or Psych [S,K] (GER) (Soc 101, 102 150 preferred) | 3     |

### Fourth Year

<table>
<thead>
<tr>
<th>Description of Courses</th>
<th>Hours</th>
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</table>
| First Term
  - EconS 305, 323, or 423                    | 3     |
  - HBM 320                                   | 1     |
  - HBM 494 [M]                               | 3     |
  - Intercultural Studies [I,G,K] (GER)        | 3     |
  - MgtOp 450                                 | 3     |
| Second Term
  - HBM 495                                   | 3     |
  - HBM Elective                              | 3     |
  - Pol S Elective                            | 3     |
  - Tier II Course (GER)                      | 3     |
  - Elective                                  | 3     |

### Completing Writing Portfolio
- First Term Hours: 3
- Second Term Hours: 4
- Third Term Hours: 3
- Fourth Term Hours: 3

### 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 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, 381, 435, and one (3 credit) elective from HBM 300-400 level courses.

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 (181)** 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 (Rt 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

- **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** May be repeated for credit; cumulative maximum 12 hours. Prereq HBM 131. Cooperative educational internship with a hospitality business, government or non-profit organization. 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. International control through financial and accounting systems for hotels and restaurants.


320 Industry Experience 1 Prereq hospitality business management major; senior standing; HBM 182. 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 Foshervice 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 service 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.

385 Applied Industrial Relations 2 Prereq junior standing. Labor relations; history, organization, and elections of bargaining agents, negotiation and administration of contracts.

385 International Tourism 3 International and domestic tourism; effects of tourism on the society.

386 Association Management 3 Prereq HBM 301. Theory, organization, structure and management of voluntary associations; economics and role in convention industry.

390 Convention Facilities Management 3 Prereq HBM 301. Politics, setting, design, construction, organization and management of public assembly facilities, including private structures.

558 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.

489 Operational Analysis 3 Prereq Acctg 231; Dec S 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.

580 Hospitality Services Marketing 3 Prereq Mktg 305. Marketing concepts and principles applied to hospitality organizations; strategies to market services and control quality.

581 Services Management 3 Prereq enrollment in the MBA program. 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

www.hd.wsu.edu
Johnson Tower 501
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 emotional 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 high or senior high school.

In addition to the teaching certifications, the department offers four specialty areas: early childhood, adolescence, aging, and family studies. Students choosing these specializations are prepared to work in a wide range of careers working with children, adolescents, older adults, and/or families in a variety of professional settings. These may include positions in foster parent programs, adoption agencies, childcare or Head Start programs, teen centers, juvenile justice programs, nursing homes or other community-based programs for the elderly, and family services agencies.

We expect our graduating students will demonstrate: 1) an understanding of social, emotional, cognitive, and physical development across the lifespan in the family context; 2) an understanding of how contextual systems interact.
to influence family and individual development; 3) 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 minor or approved certificate of study in 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 year.

The human development degree provides preparation for graduate work leading to teaching, research, counseling, or administrative positions in academia, social services, 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, prevention 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 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

**(128 HOURS)**

The Bachelor of Arts degree in Human Development requires a cumulative GPA of 2.5 or better and a C minimum grade in all HD courses, including substitutions. Of the 42 hours required for the major, a minimum of 21 must be taken in residence at WSU.

At least 40 of the total hours required for this bachelor’s degree must be in 300-400-level courses.

#### First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Eng 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 130 [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>H D 201</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Second Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H D 202</td>
<td>3</td>
</tr>
<tr>
<td>H D 204</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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#### Second Year

<table>
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<tr>
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<tbody>
<tr>
<td>AMT Elective</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H D 202</td>
<td>3</td>
</tr>
<tr>
<td>H D 204</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency (GER)</td>
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### Second Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities (GER)</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>H D 203</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Minor Elective</td>
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<table>
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<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
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<td>3</td>
</tr>
<tr>
<td>H D Elective</td>
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<tr>
<td>Minor Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical [P] Sciences (GER)</td>
<td>3 or 4</td>
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<tr>
<td>Elective</td>
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### Fourth Year

<table>
<thead>
<tr>
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<th>Hours</th>
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<tbody>
<tr>
<td>EdPsy 468</td>
<td>3</td>
</tr>
<tr>
<td>H D 410 [M]</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 467</td>
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</tr>
<tr>
<td>T &amp; L 469</td>
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<tr>
<td>T &amp; L 470</td>
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<td>Tier III Course [T] (GER)</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>H D 407</td>
<td>8</td>
</tr>
<tr>
<td>T &amp; L 415</td>
<td>8</td>
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</table>

1 Courses are only offered during this semester each year.
2 Chem 101 strongly recommended.
3 Select two from: AMT 211, 216, 317.
4 A minor must be decided at the end of the third year.
5 H D 446 requires a half-day each day, 5 days a week after taking H D 342.
6 The internship course (H D 498) can be taken during the summer semester of the junior or senior year. H D 497 should be taken no more than one to two semesters before taking the internship.

### HUMAN DEVELOPMENT - GENERAL OPTION

**(120 HOURS)**

The Bachelor of Arts degree in Human Development requires a cumulative GPA of 2.5 or better and a C minimum grade in all HD courses, including substitutions. Of the 42 hours required for the major, a minimum of 21 must be taken in residence at WSU.

#### First Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Eng 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>H D 201</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science [B,P,Q] (GER)</td>
<td>3 or 4</td>
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<table>
<thead>
<tr>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>H D 202</td>
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<tr>
<td>H D 204</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency (GER)</td>
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### Fourth Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Arts &amp; Humanities (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>H D 203</td>
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</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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<td>Minor Elective</td>
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<table>
<thead>
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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>
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<td>H D Elective</td>
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<tr>
<td>Minor Elective</td>
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<tr>
<td>Physical [P] Sciences (GER)</td>
<td>3 or 4</td>
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<td>Elective</td>
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### Second Year

<table>
<thead>
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<th>First Term</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities (GER)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<td>H D 203</td>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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<thead>
<tr>
<th>Second Term</th>
<th>Hours</th>
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<td>Physical [P] Sciences (GER)</td>
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### Fourth Year

<table>
<thead>
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<td>Minor Elective</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
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<td>Elective</td>
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### Second Term

<table>
<thead>
<tr>
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<th>Hours</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>H D 446 or 498</td>
<td>4 or 6</td>
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<td>H D 497</td>
<td>2</td>
</tr>
<tr>
<td>H D Elective</td>
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<tr>
<td>Electives</td>
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</table>

1 Psych 105 [S] or Soc 101 [S] are strongly recommended.
2 FSHN 130 [B] is strongly recommended.
3 Courses are only offered during this semester each year.
4 A minor must be decided at the end of the third semester.
5 H D 446 requires a half-day each day, 5 days a week for a semester and can be put into the schedule any time after taking H D 342.
6 The internship course (H D 498) can be taken during the summer semester of the junior or senior year. H D 497 should be taken no more than one to two semesters before taking the internship.

### HUMAN DEVELOPMENT - PRESCHOOL THROUGH THIRD GRADE (P-3) CERTIFICATION OPTION

**(132 HOURS)**

Teaching Certificate Program - Students majoring in human development may choose to become certified in the state of Washington to teach in preschool through third grade (P-3), and kindergarten through eighth grade (K-8), or family and consumer sciences. They must fulfill course requirements specified by the state of Washington. Note that the certification...
programs available in human development are offered in conjunction with the WSU College of Education. Additionally, those teacher certification students who wish to have a supporting endorsement from the Department of Human Development must meet with the appropriate human development advisor to obtain the list of approved courses.

The Bachelor of Arts degree in Human Development requires a cumulative GPA of 2.5 or better and a C minimum grade in all HD courses, including substitutions. Of the 42 hours required for the major, a minimum of 21 must be taken in residence at WSU.

### First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td></td>
<td></td>
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<tr>
<td>Eng 101 [W] (GER)</td>
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<td></td>
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<td>Gen Ed 110 [A] (GER)</td>
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<tr>
<td>H D 201</td>
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<td></td>
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<tr>
<td>Psych 105 [S,K] (GER)</td>
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<tr>
<td>Science [B,P,Q] (GER)</td>
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<td>ComSt 102 [C] (GER)</td>
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<tr>
<td>H D 202</td>
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<td>H D 204</td>
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<tr>
<td>Hist 150 [S,D] (GER)</td>
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### Second Year

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</tr>
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<tbody>
<tr>
<td>First Term</td>
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<td></td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
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<td>Eng 201 [W] (GER)</td>
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<tr>
<td>H D 341</td>
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<td>Math 251</td>
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<td>Mus 153 [H] (GER)</td>
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<td>Second Term</td>
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<td>H D 302</td>
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<td>H D 342</td>
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<td>Math 252 [N] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>T &amp; L 300</td>
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<tr>
<td>Complete Writing Portfolio</td>
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### Third Year

<table>
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<tr>
<th>Term</th>
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<th>Courses</th>
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<tbody>
<tr>
<td>First Term</td>
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<tr>
<td>Mus 388</td>
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<tr>
<td>T &amp; L 307</td>
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<tr>
<td>T &amp; L 321</td>
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<tr>
<td>T &amp; L 482</td>
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<td>Second Term</td>
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<tr>
<td>T &amp; L 322</td>
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<td>T &amp; L 371</td>
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<td>T &amp; L 390</td>
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<tr>
<td>T &amp; L 405</td>
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<tr>
<td>T &amp; L 483</td>
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### Fourth Year

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<tbody>
<tr>
<td>First Term</td>
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<tr>
<td>H D 446</td>
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<td>T &amp; L 352</td>
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<tr>
<td>T &amp; L 385</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>T &amp; L 413</td>
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<td>Second Term</td>
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<tr>
<td>H D 410</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>H D 449</td>
<td>3</td>
<td></td>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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### Fifth Year

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<thead>
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</tr>
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<tbody>
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<td>Fourth Term</td>
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</tr>
<tr>
<td>T &amp; L 415 (Directed Teaching)</td>
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### 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 (see Program in Aging). Refer to criteria outlined in the Program in Aging and contact Margaret Young at 335-9203 or email 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. Students must achieve a cumulative GPA of 2.5 or better in courses used to fulfill requirements for the Early Childhood Education minor. 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, 9 of which must be in 300-400 level courses. The minor in Human Development requires H D 101; H D 341, 342, and Math 251 must be completed prior to application for admission to the teacher certification program.

Courses are only offered during this semester each year.

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.

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.

### Certificates

#### Adulthood Through the Older Years

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.

### Human Development Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>H D 101 [S] Human Development Across the Lifespan</td>
<td>3</td>
</tr>
<tr>
<td>H D 201 Human Development - Prenatal Through Age 8</td>
<td>3</td>
</tr>
<tr>
<td>H D 202 Human Development - Middle Childhood Through Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>H D 203 Human Development - Adulthood Through the Older Years</td>
<td>3</td>
</tr>
<tr>
<td>Mus 153 [H] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Mus 388 competency exam</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 300</td>
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### Description of Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>H D 101 [S] Human Development Across the Lifespan</td>
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<tr>
<td>H D 203 Human Development - Adulthood Through the Older Years</td>
<td>3</td>
</tr>
<tr>
<td>Mus 153 [H] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Mus 388 competency exam</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 300</td>
<td>1</td>
</tr>
</tbody>
</table>

### Family Systems: Understanding Family Interaction

3 Introduction to the study of family processes: family generational, emotional, boundary, rule, and ritualistic systems.

### Communication in Human Relations

4 (3-2) Developing an understanding of human behavior and learning skills in communication and leadership.

### Special Topics in Human Development: Study Abroad

V 1-6 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

### 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.

### Family Stress and Coping

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.

385 Perspectives in Human Services 3 Prereq 6 hours of Anth, H D, Psych or Soc. In-depth study of human service practice, theoretical perspectives and strategies for delivery of appropriate services to diverse clientele.

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.

420 [M] Application of Human Development Theories 3 Prereq 9 hours of social sciences; junior standing. In-depth examination of theories and their use in understanding individual development in context of family and community.

423 Fundamentals of Participatory Research 3 Prereq sophomore standing, two social science courses. Same as CRS 425. 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 U1 (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 HD 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.

449 Seminar in Early Childhood Education 3 Prereq H D 203 or 340 and 3 hours of H D; Rec H D 341 and 342. Identification and examination of current issues and trends in early childhood education with emphasis on child, family, and community concerns.

464 Administration of Early Childhood Programs 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.

479 Planning and Evaluation in Human Development 3 Prereq 9 hours of H D. Design, implementation and evaluation of community/school programs; needs assessment; appropriate curriculum resource identification; outcomes development; includes individual and program evaluation.

480 Instructional Strategies in Human Development 3 Prereq 9 hours of H D. Identification and use of instructional strategies; evaluation of strategies to determine appropriate use and effectiveness with a variety of learners.

482 [M] Child Assessment and Evaluation 3 Prereq H D 201; 6 additional hours in H D. Understanding aspects of assessment and evaluation of young children; selection, administration, summary development, ethics and professional responsibilities, evaluation and follow-up.

485 Participation in Human Development Research V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours of social sciences. Supervised participation in faculty research including data collection, analysis, literature review, preparation of findings. S, F grading.

486 Special Topics in Human Development: Study Abroad V 1-15 Prereq 6 hours of social sciences. May be repeated for credit; cumulative maximum 15 hours. S, F grading.
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.

564 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
3 V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Assessment and evaluation of families and children.

595 Instructional Practicum
3 Prereq graduate standing. Supervised individual experiences with related organizations, businesses, or government agencies; opportunities for interaction with professionals in related fields. S, F grading.

598 Professional Internship
3 Prereq H D 510. Supervised individual experiences with related organizations, businesses, or government agencies; opportunities for interaction with professionals in related fields. 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.
Interdisciplinary Design Institute, WSU Spokane

www.spokane.wsu.edu/design
WSU Spokane
509-358-7920
design@wsu.edu

WSU Spokane: Professors, N. Blossom, J. Thompson; Associate Professors, J. Abell, K. Brooks, R. Scarfo; J. Turpin, D. Wang; Assistant Professor, K. Diaz-Moore; WSU Pullman: Professors, W. Hendrix, V. Lohr; Associate Professors, D. Ascher-Barn-stone, S. Michael; Assistant Professors, A. Como, P. Graen.

The Interdisciplinary Design Institute is committed to leadership in developing the highest level of disciplinary and interdisciplinary instruction, scholarship, and public service. The Institute’s philosophy recognizes these areas of emphasis as interdependent and reinforcing and seeks to foster creative interplay among them.

Overview
The Doctor of Design (DDes) program is intended to advance both the art and science of design within the philosophical and pedagogical framework of interdisciplinary inquiry, critical synthesis, and problem solving that bridges education, research, and practice. As a terminal doctoral degree, the DDes is intended for persons who are well versed and professionally skilled in the design profession and who seek to make substantive, innovative, and original scholarly contributions to their fields. The DDes is the only one of its kind in the State of Washington, as well as the western United States and Canada.

Undergraduate Students
Undergraduate students from architecture, landscape architecture, interior design, and construction management spend time at the Interdisciplinary Design Institute in the fourth and/or fifth years of their programs learning together on design-construction issues using both disciplinary and interdisciplinary approaches.

Graduate Students
Graduate students explore advanced design theories, problem-solving techniques, methodologies, and individual research initiatives while pursuing a degree in architecture, landscape architecture, interior design, or a Doctor of Design. Through the interdisciplinary core curriculum, graduate students acquire the skills and knowledge needed to participate effectively as members of interdisciplinary design and research teams, and to advance the body of knowledge in their disciplines.

Description of Courses
Design Courses
Design

562 Area Readings 3 Prereq graduate standing. Forum to understand and discuss issues relating to the three areas of concentration in the doctor of design program: history, theory and criticism; physical design; and people and place.

570 Research Practicum 4 (2-4) Interdisciplinary research in design; focus on development of research topic proposed in Desgn 562.

598 Topics in Design V 1-3 May be repeated for credit; cumulative maximum 9 hours. Prereq doctoral student. Topical issues in design responding to the shifting demands and needs of the design professions.

600 Special Projects or Independent Study Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For Interdisciplinary PhD only. S, F grading.
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 baccalaureate program in Washington accredited by the Council for Interior Design Accreditation (formerly 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 CIDA. 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, I D 101, 102, 201, 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 third and fourth years 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, 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 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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<td>Fourth Year</td>
<td>I D 490 or Supportive Elective</td>
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### Minors

**Interior Design Studies**

A minor in interior design studies shall be certified by the department and is limited to 10 students per year. Students must submit their intent to seek the minor in writing to the Interior Design Department. The department may restrict enrollment in any year based on its obligation to deliver the Bachelor of Arts program. A minor in interior design is not an avenue for professional certification nor is it accredited by the Council for Interior Design Accreditation.

Architecture students who have completed their third year of coursework are also eligible to apply. To be eligible to receive the minor a student must:

1) complete one of the two lower-division core requirements, 2) complete the upper-division electives requirement, 3) have a minimum GPA of 3.0, 4) and have completed the sophomore portfolio review.

The lower-division core is either 23 credits including: I D 101, 102, 201, 203, 215, Arch 101, and Arch 103. Transfer students complete 17 hours including: I D 103, 201, 203 and 215.

The upper-division electives must be taken in Spokane and consist of 9 hours selected from I D 305, 312, 325, 350, 392, 396 and 397.

### Description of Courses

**Interior Design Courses**

1 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 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.

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 3 May be repeated for credit. S, F grading.

276 Special Topics: Study Abroad 3 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 V 1-15 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

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

296 Introduction to Computer Technology 3 (2-2) Introduction to software applications used in interior design such as Photoshop, InDesign, PowerPoint and SketchUp.

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.

305 Freehand Sketching 3 (2-2) Prereq Arch 101, 1 D 102. Development of knowledge and skills in freehand sketching to facilitate design exploration and further understanding of the built environment.

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,M] 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.

396 Beginning Computer Applications for Interior Design 3 (0-6) Prereq I D 201. Design problem solving using the computer as a tool.

397 Computer Applications for Interior Design II 2 (0-4) Prereq I D 396. Continuation of I D 396 with a focus on enhancing 2D skills and introducing 3D modeling techniques.

415 Advanced Interior Construction and Detailing 3 Analysis of building construction and detailing which impacts interior space design.

425 Advanced Planning and Design I 5 (0-10) Prereq I D 333. Interdisciplinary research and design that explores interior design as a vital part of the urban landscape.

426 Advanced Planning and Design II 5 (0-10) Prereq I D 425. Design problems and presentations emphasizing the bridges between theory and practice.

428 International Design and Industry Experience V 1 (0-3) - 6 (0-18) Prereq minimum 2.50 cumulative gpa. Study abroad working with design and industry representatives in Europe. Credit not granted for both I D 428 and 528.

460 Portfolio and Representation 3 Prereq I D 425. Develop communication skills and produce documents necessary to professionally present oneself to prospective employers within the fields of design.

477 Interior Design Field Trip 1 May be repeated for credit; cumulative maximum 2 hours. Prereq junior standing. Selected issues in the field of interior design in connection with an organized field trip.

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

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

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

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

490 Cooperative Education Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. Prereq by interview only. Off-campus cooperative education internship with business, industry, or government unit.

498 Special Topics in Interior Design V 1-3 May be repeated for credit; cumulative maximum 6 hours.

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

520 Historical Perspectives of Interior Space 3 Prereq graduate standing. Historical perspectives of interior environments, spatial distributions, furnishings, and related design elements from ancient Egypt to the 18th century.

525 Interior Design Graduate Studio I 5 (0-10) Prereq I D 426. Graduate studio: application of advanced design theories, philosophies and research methodologies to enhance undergraduate design foundations through interdisciplinary studio experiences.

526 Interior Design Graduate Studio II 5 (0-10) Prereq I D 525. Graduate studio: individual thesis topics and the application of advanced design theories, philosophies and research methodologies to student’s focus topic.

528 International Design and Industry Experience 3 Prereq I D 425, by interview only. Graduate-level counterpart of I D 428; additional requirements. Credits not granted for both I D 428 and 528.

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 Prereq graduate standing. Same as Arch 540.

550 Design Applications 2 Prereq Arch/I D/L A 530. Same as Arch 550.

560 Interdisciplinary Seminar 3 Prereq graduate standing. Same as Arch 560.

561 Interdisciplinary Seminar II 3 Prereq Arch/I D/L A 560. Same as Arch 561.

594 Readings in Interior Design 3 Prereq graduate standing. Exploration of current topics through readings in interior design.

598 Topics in Interior Design V V 1-3 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.

702 Master’s Special Problems, Directed Study and/or Examination Variable credit. S, F grading.
Program in Leadership and Professional Studies, WSU Spokane

www.spokane.wsu.edu/academics/leadership

Spokane Campus, Phase I Classroom Building
509-359-7722


As a degree framed from a liberal arts perspective and anchored in the social and behavioral sciences, the Bachelor of Arts in Leadership and Professional Studies (LPSt) at WSU Spokane prepares students to lead effectively in a variety of professional settings that are continuously evolving due to social, cultural, technological, and demographic change.

Students who complete degree requirements receive a solid foundation for graduate-level education in such areas as sociology, psychology, human development, education, business, gerontology, social work, law, health policy and administration. They also receive valuable preparation for careers in the public and private sectors requiring a baccalaureate degree. Examples include human resources and personnel management, counseling, gerontology, human services, government and business organizations, research agencies, law enforcement, probation work, public administration, and international relations.

Certification

Students may apply for certification in this major 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 in Leadership and Professional Studies, 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 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 LEADERSHIP AND PROFESSIONAL STUDIES (120 HOURS)

Before enrolling in the BA in Leadership and Professional Studies program, students must complete at least 60 semester credit hours of freshman/sophomore college course requirements (including all lower-division GERs) with a cumulative GPA of 2.5 or better. These requirements can be fulfilled at one or more of the Washington State University campuses, or at another institution of higher education (e.g. a Washington community college). After transferring to WSU Spokane, students take an additional 60 semester credits of courses to complete the 120 credits required for graduation.

The course of study is structured around four components: (1) a 30-credit Core Curriculum, (2) 24 credits of Career Focus courses (selected by the student with guidance from an academic advisor), (3) a 3-credit GER Tier III course, and (4) a 3-credit Professional Internship.

Core Requirements: The 30-credit Core consists of coursework in five areas: Leadership, Sociology, Psychology, Human Development, and Writing Proficiency.

GER Tier III Course: Complementing the core requirements is a 3-credit Tier III course that satisfies a WSU upper-division general education requirement (GER). Typically taken during the junior or senior year, a Tier III course is intended to permit focused and integrated study in an area outside a student’s major. As a general prerequisite, a Tier III course requires the completion of 60 semester credits, including one Tier I and three Tier II GER courses (See WSU Catalog for details). Several Tier III courses are offered on the Spokane campus.

Career Focus Courses: Working closely with an academic advisor, students select and complete 24 credits of Career Focus courses supportive of career interests and objectives. Students are encouraged to select Career Focus courses that fulfill requirements for a minor or a second major.

Professional Internship: The program’s capstone course is a 3-credit Professional Internship tailored to accommodate student career interests. Spokane’s urban environment provides an excellent setting to fulfill the internship requirement. Students also have the option of completing the internship at an agency or organization in another part of the state or country.

First Year

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<td>Hours</td>
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<td>GenEd 111 [A] (GER)</td>
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Second Year

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Complete Writing Portfolio

Third Year

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Fourth Year

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Description of Courses

Leaderhip and Professional Studies, WSU Spokane Courses

LPSt

400 (PrfDv) Professional Burnout and Occupational Stress 3 Prereq 6 hours of any social science. Exploration of developments in theory, research and intervention regarding professional burnout and occupational stress.

410 (PrfDv) [M] Leadership and the Humanities 3 Prereq junior standing. Leadership from the perspective of the humanities including historical analyses, film, literary masterpieces and contemporary treatises.

420 (PrfDv) Leadership: Diverse Cultural Perspectives 3 Prereq junior standing. Leadership from diverse cultural perspectives including East Asian philosophies; application to personal and professional leadership roles.

483 (PrfDv) Special Topics in Professional Development V 1-4 May be repeated for credit; cumulative maximum 9 hours. Contemporary topics in professional development.
485 (PrfDv) Professional Skills Development
3 Prereq completion of all lower-division GER requirements and junior standing. Preparation for professional internship; career exploration, values clarification, interview techniques, time and stress management, professional ethics and strategies for conflict resolution.

498 (PrfDv) Internship
V 1-10 May be repeated for credit; cumulative maximum 10 hours. Prereq LPST 485. Student-initiated supervised professional and leadership development experience at training sites related to career interests. S, F grading.

499 (PrfDv) Special Problems
V 1-4 Prereq permission of instructor. May be repeated for credit; cumulative maximum 6 hours. S, F grading.

Liberal Arts, General Studies Program

www.libarts.wsu.edu/genstudies
Murrow East 106
509-335-8731

Director, M. Bloodsworth-Lugo; Associate Director, T. Whitacre.

General Studies is for students who have varied interests that may cut across the usual departmental boundaries and who wish to play a role in deciding on a suitable curriculum of study.

The degrees offered are the Bachelor of Arts in Humanities, Bachelor of Arts in Social Sciences, and Bachelor of Liberal Arts. These degrees are not identified with a specific subject-matter field on the diploma.

The Learning Goals/Outcomes for the General Studies program 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.

Schedules of Studies
Students must complete 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.

GENERAL STUDIES - INTERNATIONAL STUDIES
(120 HOURS)

R. Halverson, Coordinator

The International Area Studies area of General Studies is for students who have interests that are both international and interdisciplinary. Students may choose between these major concentrations: Latin America Area Studies, German Area Studies, French and Francophone Area Studies, and European Area Studies. (Please note that Asian Area Studies, N. Kawamura Coordinator, is described in the Asian Program section of the catalog. Russian Area Studies, B. Ingemanson Coordinator, appears under the Foreign Languages and Cultures). Students who wish to earn a Bachelor of Arts in Humanities with a focus in International Area Studies will devise an approved, coherent program of study with the coordinator and a designated advisor who is a specialist in the student’s area of interest. The program of study must fulfill an academic or career goal, include prerequisites consistent with the 300-400-level major coursework, satisfy the GER requirements and any additional requirements for the College of Liberal Arts, and include language proficiency appropriate to the cultural area. The area studies major will consist of a minimum of 40 credits. No course in which C- or lower is earned will be counted toward the major. More details are available on the websites of WSU, the General Studies program, and the Foreign Languages Department, at www.forlang.wsu.edu.

GENERAL STUDIES - LIBERAL ARTS
(120 HOURS)

C. R. King, 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.

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<tr>
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Second Year

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<td>Complete Writing Portfolio</td>
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221 Liberal Arts, General Studies
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**

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**Second Term**

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**Third Term**

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<tr>
<td>Complete Writing Portfolio</td>
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**Junior & Senior Year—Choose One of the Options Listed Below**

- **Western Religions:** Hist 272, 445, Phil 407; seven courses from: Anth 330, Engl 305, 306, 383, 385; F A 201, 202; Hist 341, 423, 440, 441; Hum 101, 198, 302, 340; Phi 290, 310, 340, 400; Soc 341.
- **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.
- **Comparative Religions:** Hist 273, 445, Phil 314, 315; five courses from: Anth 303, Engl 305, 306, 383, 385; F A 201, 202, 302; Hist 208, 341, 370, 373, 374, 408, 440, 441, 470, 472, 473; Hum 350; Phil 340, Soc 341.

**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.

**General Studies - Social Sciences/Humanities Plan A (120 Hours)**

T. Whitacre, 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**

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<td>Electives</td>
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<td>Hours</td>
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<td></td>
<td></td>
<td>Tier III Course [T] (GER)</td>
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</table>

222
300-400-level Primary Concentration 3
Electives 12

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.

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.

### GENERAL STUDIES - SOCIAL SCIENCES/HUMANITIES PLAN B (120 HOURS)

**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.

### First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
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</thead>
<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>Eng 101 [W] (GER)</td>
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<tr>
<td></td>
<td></td>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td></td>
<td></td>
<td>Math Proficiency [N] (GER)</td>
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<tr>
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<td></td>
<td>Elective</td>
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<tr>
<td>Second Term</td>
<td></td>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td></td>
<td></td>
<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td></td>
<td></td>
<td>GenEd 111 [A] (GER)</td>
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<td></td>
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<td>Social Sciences [S,K] (GER)</td>
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### Second Year

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<thead>
<tr>
<th>Term</th>
<th>Hours</th>
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<tr>
<td>First Term</td>
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<td>Area 2</td>
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<td></td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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<td>Area 1</td>
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<td>Area 2</td>
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<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>Intercultural Studies [I,G,K] (GER)</td>
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<td>Science Elective</td>
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<td>Complete Writing Portfolio</td>
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### Third Year

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<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
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<td>300-400-level Area 1</td>
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<td>Area 2</td>
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<td></td>
<td></td>
<td>Area 3</td>
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<tr>
<td></td>
<td></td>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>Elective</td>
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<tr>
<td>Second Term</td>
<td></td>
<td>300-400-level Area 2</td>
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<tr>
<td></td>
<td></td>
<td>300-400-level Area 3</td>
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<td>Tier III Course [T] (GER)</td>
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### Fourth Year

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<th>Term</th>
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<th>Courses</th>
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<tbody>
<tr>
<td>First Term</td>
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<td>300-400 Any Area</td>
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<td></td>
<td>Electives</td>
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<tr>
<td>Second Term</td>
<td></td>
<td>300-400 Any Area</td>
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<td></td>
<td></td>
<td>Electives</td>
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### Certificates

<table>
<thead>
<tr>
<th>Certificate</th>
<th>Requirements</th>
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</thead>
<tbody>
<tr>
<td>Certificate in American Indian Studies</td>
<td>For a minor in American Indian 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.</td>
</tr>
<tr>
<td>Certificate in American Indian Studies, Teaching</td>
<td>Students who are preparing to teach at the secondary level may in some cases receive their degrees in general studies. Such students must fulfill the requirements for graduation of the College of Sciences or College of Liberal Arts. There are no further requirements if they complete their teaching major and minor and fulfill all the requirements for teaching certification. The degree awarded is Bachelor of Arts in Humanities, Bachelor of Arts in Social Sciences, or Bachelor of Science according to the endorsement granted in the student's major teaching field. The secondary teaching major in physical science will receive a Bachelor of Science degree. For further information on teaching certification, refer to the Department of Teaching and Learning.</td>
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</tbody>
</table>

### Minors

<table>
<thead>
<tr>
<th>Minor</th>
<th>Coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian Studies</td>
<td>O. Svingen</td>
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</tbody>
</table>

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, 343, CES 372, 373, 379, 470, 475, FA 301, Hist 410, or MUS 265). At least 9 of the credits must be taken at WSU and at least 9 hours must be at the 300-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.

### Program in Materials Science and Engineering

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 students who wish to minor in this field.
800 Doctoral Research, Dissertation, and/or Examination Variable credit S, F grading.

Department of Mathematics

www.math.wsu.edu
Neill 103
509-335-4918


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 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 (120 HOURS)

A major in mathematics requires Math 171, 172, 220, 273, 300, 301, 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; 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 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, 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 reapply after completing at least 12 more semester hours, whereupon decisions are based on grades 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 http://www.math.wsu.edu/placement for more information.

Materials Science and Engineering bachelor's and master's graduates in the sciences and engineering who now wish to pursue graduate research for a PhD 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 PhD 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 find out 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 S800). 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

Materials Science Courses

Mat S
502 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 4 Broad baseline in materials science including relationships between structure and properties.
506 Biomaterials 3 Prereq MSE 201 and permission of instructor. Same as MSE 506.
513 Crystal Plasticity 3 Rec Math 440. Same as MSE 513.
516 Phase Transformations 3 Rec MSE 314, 316. Same as MSE 516.
521 Statistics of Microstructures 3 Prereq Math 440, 540 or permission of instructor. Same as MSE 521.
538 Special Topics V 1-3 May be repeated for credit. Selected topics of current interest in advanced materials science.
570 Chemistry of Polymers and Biopolymers 3 Prereq C or better grade in Chem 345, 346, or MSE 402. Same as Chem 570.
571 Microscopic Analysis of Solid Surfaces 3 Modern spectroscopic methods for microscopic analysis of solid surfaces; emphasizes electron, ion, laser, and x-ray techniques.
593 Seminar in Physical Chemistry and Materials Science 1 Prereq graduate standing. Same as Chem 593.
600 Special Projects or Independent Study Variable credit S, F grading.

H. C. Wiser; Adjunct Professor, K. D. Cooper.
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.

### 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>Biological Science [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
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</tr>
<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
</tr>
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<td>Second Term</td>
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<tr>
<td>Cpt S 121</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 172</td>
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<tr>
<td>Math 220 or 230</td>
<td>2 or 3</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>Term</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] or Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Math 273</td>
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</tr>
<tr>
<td>Math 300 [M]</td>
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<tr>
<td>Phys 201 [P] (GER)</td>
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<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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<tr>
<td>Math 301</td>
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<td>Math 315</td>
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<td>Math 360</td>
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<td>Complete Writing Portfolio</td>
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### Third Year

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<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
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<tr>
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<td>Math 398</td>
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<td>Math 421 [M]</td>
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<td>Math Option Course</td>
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<td>Second Term</td>
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<td>Math 401 [M] or 421 [M]</td>
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<td>Math 398</td>
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### Fourth Year

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<tbody>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Math 401 [M] or 431</td>
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<tr>
<td>T &amp; L 464</td>
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<td>T &amp; L 465</td>
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<tr>
<td>T &amp; L 466</td>
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<tr>
<td>EdPsy 468</td>
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<tr>
<td>Math Option or 432</td>
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<td>T &amp; L 467</td>
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### Fifth Year

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</tr>
<tr>
<td>T &amp; L 415 (Student Teaching)</td>
<td>16</td>
</tr>
</tbody>
</table>

### Mathematics Minor

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 office for more information.

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1. Actuarial Science Option students should take EconS 101, 102.
2. Computational Mathematics Option students must take Cpt S 122.
3. See Mathematics Options list for suggested electives.
4. See Mathematics Options list for required option courses.
Mathematics

Department for a current list of approved courses. Courses required for the minor may not be taken pass, fail and 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 with a grade of C or better or satisfactory math placement score. Graphs, properties, and applications of polynomial, rational, exponential, exponential, and trigonometric functions.


111 Mathematics Tutorial for Math 201 1 Prereq c// Math 201. Student-centered group tutorial focusing on skill improvement for success in Math 201. S, F grading.

140 [N] Calculus for Life Scientists 4 Prereq Math 107 with a grade of C or better, 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 with a grade of C or better, 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 with a grade of C or better. Techniques and applications of one-variable calculus; estimations; series, derivative of a vector function.

182 Honors Calculus II 4 (3-3) Prereq Math 171 with a grade C or better 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 with a grade of C or better or satisfactory math placement score. Basic notions of logic, linear algebra, matrices and analytic geometry; applications to linear programming.

202 [N] Introduction to Mathematical Analysis for Business and Economics 3 Prereq Math 107 or 201 with a grade of C or better, 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, 103 or intermediate math placement score of 13. Same as Stat 205.

206 [N] Mathematical Analysis for Architects 3 Prereq Math 107, with a grade C or better 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 with a grade of C or better 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 intermediate math placement score of 13. 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 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 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: mensuration, geometrical constructions, similarity, congruence, symmetry, probability, counting principles, measures of central tendency, graphical representation.

273 Calculus III 2 Prereq Math 172 with a grade C or better; Math 220 or c//. Calculus 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 220. 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 with a grade C or better. 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.

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 Prereq one 3 hour statistics course. 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.


423 Statistical Methods for Engineers and Scientists 3 Prereq Stat 360 or one 3 hour statistics course. Same as Stat 423. Credit not normally granted for both Math 423 and 430.

424 Introduction to Topology 3 Prereq Math 273; Math 301. Topological ideas including topological spaces, metric spaces, connectedness and compactness, countability and separation axioms and the Tychonoff Theorem.

425 Conceptual Aspects of Mathematics 3 Prereq college-level math course. Same as T & L 425.

430 Statistical Methods in Engineering 3 Prereq Math 172; 220. Same as Stat 430.

431 Intersections of Culture and Mathematics 3 (2-2) Prereq Math 301. 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 Math 301. 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 Prereq Math 172; 220. 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. Cooperative course taught by WSU, open to UI students (Math 433).

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 Prereq Stat 430 or 443. 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.

486 Mathematical Modeling in the Natural Science 3 Prereq Math 315. Development of mathematical models for solutions of problems in the physical and life sciences. Credit not granted for both Math 486 and 586

494 Seminar in Mathematical Biology 1 May be repeated for credit; cumulative maximum 4 hours. Prereq one course in math and one course in biology. Oral presentation of research approaches, research results and literature review of mathematical biology including mathematical modeling of biological systems. S, F grading.

497 Instructional Practicum 1 or 2 By interview only. May be repeated for credit; cumulative maximum 2 hours. S, F grading.

498 Career Experience Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. Same as Math 598. 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.


504 Measure and Integration 3 Prereq Math 501. Lebesque measure, Lebesque 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).


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).


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 Prereq one 3 hour statistics course. Graduate-level counterpart of Math 410; additional requirements. Credit not granted for both Math 410 and 510.


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) Prereq statistical methods course. No previous computer experience required. Same as Stat 515.

516 Simulation Methods 3 Prereq Cpt S 121 or 203; statistics course. Graduate-level counterpart of Math 416; additional requirements. Credit not granted for both Math 416 and 516.

523 Statistical Methods for Engineers and Scientists 3 Prereq Stat 360 or one 3 hour statistics course. Graduate-level counterpart of Math 423; additional requirements.

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).

531 Intersections of Culture and Mathematics 3 (2-2) 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, teaching experience or intention. Graduate-level counterpart of Math 432; additional requirements. Credit not granted for both Math 432 and 532.

534 Approaches to Mathematics Teaching 2 Prereq Math 531, 532. Instruction and curricula of mathematics content for community college and high school, covering basic arithmetic through calculus.

536 Statistical Computing 3 (2-3) Prereq (Stat 443 and 530), Stat 523, or by instructor's permission. Same as Stat 536.

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 Math 315, 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 546).

548 Numerical Analysis 3 Prereq FORTRAN, C, or other programming language; Math 315; graduate standing. Graduate-level counterpart of Math 448; additional requirements. Credit not granted for both Math 448 and 548.

553 Graph Theory 3 Prereq Math 220; 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; cumulative maximum 6 hours. Combinatorics, generating functions, recurrence relations, inclusion-exclusion, coding theory; experimental design, graph theory.

556 Introduction to Statistical Theory 3 Prereq Stat 430 or 443. Graduate-level counterpart of Math 456; additional requirements. Credit not granted for both Math 456 and 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 Nonlinear Optimization I 3 Prereq advanced multivariable calculus and a programming language; Rec Math 464, 544. Theory and algorithms for unconstrained nonlinear optimization problems, including line search, trust region, conjugate gradient, Newton and quasi-Newton methods.

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; Math 325 or 364, or knowledge of linear programming. Graduate-level counterpart of Math 466; additional requirements. Credit not granted for both Math 466 and 566.

567 Integer and Combinatorial Optimization 3 Prereq Math 464. Theory and applications of integer and combinatorial optimization including enumerative, cutting plane, basis reduction, relaxation and matching methods.

568 Statistical Theory I 3 Prereq Math 273; Stat 430 or 443. Statistical Theory I 3 Same as Stat 548.

569 Statistical Theory II 3 Prereq Stat 548. 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 360 or 443. Same as Stat 572.

573 Reliability 3 Prereq Stat 360, 430 or 443. Same as Stat 573.

573 Reliability 3 Prereq Stat 443. Same as Stat 573.

574 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).

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
V 1-3 Prereq Math 315. Graduate-level counterpart of Math 486; additional requirements. Credit not granted for both Math 486 and 586

590 Seminar in Mathematics Education
V 1-3 Prereq graduate standing. Topics in mathematics education.

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
May be repeated for credit; cumulative maximum 5 hours. Prereq graduate standing. Introduction to the teaching of university mathematics. S, F grading.

598 Special Projects or Independent Study
Variable credit S, F grading.

602 Internship
V 2-12 May be repeated for credit. A structured internship from three to nine months; teaching at the postsecondary level or applied work in a non-academic environment. Prereq 40 hours graduate work. 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.

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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

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 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. 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 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 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 Mechanical Engineering or Materials Science and 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 study 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) 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, biomaterials, 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 life-long 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 in 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 strong 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 certification into the mechanical engineering or materials science and engineering programs is processed by the School. The certification requirements are described in the WSU catalog. Details for certification can also be obtained by contacting the School directly.

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, 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 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**

(128 HOURS)

**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**

**First Term**

Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 171 [N] (GER) 4
MSE 110 2

**Second Term**

Biological Sciences [B] (GER) 3
Chem 106 [P] (GER) 4
Cpt S 203 or 251 2
GenEd 111 [A] (GER) 3
Math 172 4

**Second Year**

**First Term**

Arts & Humanities [H,G] (GER) 3
C E 211 3
EconS 102 [S] (GER) 3
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4

**Second Term**

Engineering Science Elective1 3
Engl 402 [W] (GER) 3
MSE 426 [M] 2
Math/Stat 370 3
MSE 201 3

**Third Year**

**First Term**

Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 315 3
M E 212 3

**Second Term**

Intercultural Studies [I,G,K] (GER) 3
Math 315 3
MSE 201 3
Phys 202 [P] (GER) 4
Complete Writing Portfolio

**Fourth Year**

**First Term**

Math 172 4
MSE 302 3
MSE 320 3
Physical Science Elective1 3

**Second Term**

E E 304 2
MSE 316 3
MSE 321 3
MSE 323 2
Physical Science Elective1 3

**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.

**MECHANICAL ENGINEERING DEGREE PROGRAM**

(128 HOURS)

**First Year**

**First Term**

Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
M E 103 3
M E 316 [M] 3

**Second Term**

Intercultural Studies [I,G,K] (GER) 3
Math 315 3
MSE 201 3
Phys 202 [P] (GER) 4
Complete Writing Portfolio

**First Year**

**First Term**

Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 171 [N] (GER) 4

**Second Term**

Biological Sciences [B] (GER) 3
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3

**Second Year**

**First Term**

C E 211 3
Cpt S 121, 153, 253, or 251 2
Eng S 102 [S] (GER) 3
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4

**Second Term**

Arts & Humanities [H,G] (GER) 3
C E 215 3
M E 212 3
M E 220 1
Math 315 3
Phys 202 [P] (GER) 4

**Third Year**

**First Term**

Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 315 3
M E 316 [M] 3
M E 348 3
M E 404 3

**Fourth Year**

**First Term**

Intercultural Studies [I,G,K] (GER) 3
M E 402 3
M E 414 3
Technical Elective1 3

**Second Term**

Engl 402 [W] (GER) 3
M E 406 [M] 3
M E 416 3
Technical Elective1 3
Tier III Humanities or Social Sciences Course [T] (GER) 3

1 Technical Elective in M E or MSE. (MSE 440 excluded).

**Minors**

**Materials Science And Engineering Minor**

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, 406, 413, M E 310, or E E 496.
Mechanical and Materials Engineering

Mechanical Engineering Minor

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 and Computer-Aided Design 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).

104 Engineering Graphics 2 (1-3) Orthographic theory, conventions and visualization, isometric and oblique pictorials, geometric dimensioning and tolerancing.


125 M E Merit Experience 2 Prereq by interview only. A hands-on, project-oriented course emphasizing teamwork 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 I 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. 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 (Engr 320).

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 UI (Engr 335).

305 Thermal and Fluids Laboratory II 2 (1-3) Prereq M E 303 or c//, Math 370 or c//, major in engineering. E E 305 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 I 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. C E 211 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 (3-3) 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 Prereq 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.


416 Mechanical Systems Design 3 (1-6) Prereq M E 348 or 375; M E 404; 414 or c//, M E 316 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) Prereq 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.

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).


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 Prereq 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.
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 Fluids 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.

525 Biomechanics 3 Prereq B E 320, C E 215 or MSE 301; Math 315. Same as B E 525.

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. M E 414 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 elasto-plastic deformations.

532 Finite Elements 3 Same as C E 532. Cooperative course taught jointly by WSU and UI (CE 546).

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 3 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.

551 Turbulent Flow 3 Rec C E 521 or M E 521. Turbulent flow; dimensional analysis, statistical models and descriptions of organized structures.

556 Numerical Modeling in Fluid Mechanics 3 Prereq C E 515. Same as C E 556.

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.

201 Materials Science 3 Prereq Chem 106, Phys 201 or cl/. 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.

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.

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.

406 Biomaterials 3 Prereq MSE 201. Overview of the different types of materials used in biomedical applications such as implants and medical devices. Credit not granted for both MSE 406 and 506.

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.


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.

471 Materials Characterization Techniques 1 (0-3) Prereq permission of instructor; Chem 105, Phys 201. Introduction to advanced materials characterization methods including electron microscopy, scanning probe microscopy, nanomechanical testing, and spectroscopy techniques. S, F grading.

483 Topics in Materials Engineering V 1-4 (0-4) Prereq permission of instructor; Chem 105, Phys 201. Introduction to advanced materials characterization methods including electron microscopy, scanning probe microscopy, nanomechanical testing, and spectroscopy techniques. S, F grading.

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

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, mechanisms 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.

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 3 Fracture mechanics and mechanisms and the microstructural origins of toughness in metals, polymers and composites.

546 Engineered Wood Composites 3 Theory and practice of wood composite materials, manufacture and development. Cooperative course taught by WSU, open to UI students (ForPr 537).

547 Physical Chemistry of Interfaces 3 Rec MSE 402. Principles of interfacial bonding applied in the engineering of polymers, wood and heterogeneous systems.

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.

Department of Military Science

www.wsu.edu/~armyrotc

Avery 405

509-335-6605

Professor and Department Chair, Lieutenant Colonel J. Zuba; Assistant Professors, Captain D. Duncan, Captain J. Harskjen.

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 Prereq permission of instructor. Military adventure training, pioneering activities, military skills and small unit tactics. Field trip required.

120 Wilderness Survival 1 Wilderness survival techniques, basic field craft and introduction to rappelling. Field trip required.

201 Introduction to Leadership 2 Multidisciplinary approach to military leadership.

202 The Officer as a Professional 2 U.S. Army Officer Corps as a profession; the U.S. Army 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 Prereq instructor permission. Troop leadership procedures emphasizing instruction in military professionalism and ethics; practical aspects of tactics and leadership practice.

302 Small Unit Tactics and Military Leadership 3 Prereq instructor permission. 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, PolS 497, PACT 201, or Ed Ad 499 with permission. S, F grading.

401 Advanced Military Leadership 3 Prereq instructor permission. Historical and legal basis of military justice; small unit management; military professionalism and ethics.

402 Advanced Military Management and Practicum 3 Prereq instructor permission. Theory and practice of Army administration/management; staff planning and correspondence; pre-commission 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


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) demonstrate critical thinking by analyzing results generated in the lab, as well as from published papers, that address biological problems at the chemical, cellular, and organismal level; 2) demonstrate in-depth knowledge in Molecular Biosciences through the use of modern instrumentation and computers in support of their projects, including use of available databases for research; and 3) effectively communicate scientific information both in written form and oral presentations to colleagues and lay audiences.

At the graduate level, the school offers programs leading to the degrees of Master of Science in Biochemistry and Doctor of Philosophy (Biochemistry).
Molecular Biosciences through the use of modern instrumentation and computers in support of their projects, including use of available databases for research; and 3) effectively communicate scientific information both in written form and oral presentations to colleagues and lay audiences.

**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 PhD degrees in a variety of areas in agriculture and basic science. Students who receive Master’s and PhD 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) demonstrate critical thinking by analyzing results generated in the lab, as well as from published papers, that address biological problems at the chemical, cellular, and organismal level; 2) demonstrate in-depth knowledge in Molecular Biosciences through the use of modern instrumentation and computers in support of their projects, including use of available databases for research; and 3) effectively communicate scientific information both in written form and oral presentations to colleagues and lay audiences.

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 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.**

**Certification Requirements:**

Students must meet the following three requirements to be eligible to certify in a SMB major in biochemistry, biotechnology, genetics or cell biology and microbiology:

1. Complete Biol 106, Biol 107, Chem 105 and Chem 106, or transfer equivalents, with a minimum grade of C.
2. Earn a minimum cumulative gpa of at least 2.50.
3. Earn a minimum of 24 semester hours.

Students must maintain a minimum cumulative gpa of 2.50 for all WSU courses to remain certified in a SMB degree program. A certified major who falls below the minimum requirements will be decertified according to Academic Regulation 56.

**Graduation Requirements:**

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.

**BIOCHEMISTRY - BIOCHEMISTRY/BIOPHYSICS OPTION (120 HOURS)**

**First Year**

**First Term**

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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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**Second Term**

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<td>Chem 106 [P] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Math 172</td>
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**Second Year**

**First Term**

<table>
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<td>Biol 107 [B] (GER)</td>
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**Second Term**

<table>
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<td>Chem 345</td>
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<td>Phys 201 [P] (GER)</td>
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**Third Year**

**First Term**

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<th>Course</th>
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<td>Chem 222</td>
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<tr>
<td>MBioS 303</td>
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<td>MBioS 304 [M]</td>
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**Second Term**

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<td>Communication Proficiency [C,W] (GER)</td>
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<td>Intercultural Studies [I,G,K] (GER)</td>
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<tr>
<td>MBioS 454 [M]</td>
<td>3</td>
</tr>
<tr>
<td>MBioS 465</td>
<td>3</td>
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<tr>
<td>MBioS 305</td>
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**Fourth Year**

**First Term**

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<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>MBioS 413</td>
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<tr>
<td>MBioS 466</td>
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<td>MBioS 494 [M]</td>
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<td>Electives</td>
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**Second Term**

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<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>MBioS 414</td>
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<td>Science Elective 3</td>
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<td>Tier III Course [T] (GER)</td>
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**BIOCHEMISTRY - BIOCHEMISTRY/ MOLECULAR BIOLOGY OPTION (120 HOURS)**

**First Year**

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biol 106 [B] (GER)</td>
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<tr>
<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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**Second Term**

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<tr>
<th>Course</th>
<th>Hours</th>
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<td>Biol 107 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Chem 106 [P] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Math 172</td>
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**Second Year**

**First Term**

<table>
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<th>Course</th>
<th>Hours</th>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biol 107 [B] (GER)</td>
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**Second Term**

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<th>Course</th>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Chem 345</td>
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<tr>
<td>MBioS 301</td>
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<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>
BIOTECHNOLOGY DEGREE PROGRAM  
(120 HOURS)

**First Year**

**First Term**
- Biol 106 [B] (GER) 4
- Chem 103 [P] (GER) 4
- Engl 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
- Math 140 or 171 [N] (GER) 4

**Second Year**

**First Term**
- Arts & Humanities [H,G] (GER) 3
- Chem 3451 3
- MBioS 301 4
- Phys 101 [P] (GER) 4

**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

**Third Year**

**First Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Communication Proficiency [C,W] (GER) 3
- Math 172, Stat 212 [N] (GER), or Stat 412 3 or 4
- MBioS 304 [M] 3
- MBioS 306 3
- MBioS 465 3

**Second Term**
- Intercultural Studies [I,G,K] (GER) 3
- MBioS 305 3
- MBioS 306 2
- MBioS 454 [M] 3
- MBioS 303 4
- MBioS 402 [M] 3
- MBioS 404 3
- MBioS 492, 494, or 496 1
- Tier III Course [T] (GER) 3

**Fourth Year**

**First Term**
- MBioS 454 [M] 3
- Mktg 360 3
- Phil 365 [H] or 370 [H] (GER) 3
- Electives 6

**Second Term**
- Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
- Lab Elective1 3 or 4
- MBioS 401 3
- MBioS 492, 494, or 496 1
- Tier III Course [T] (GER) 3

1 Pre-med students and those interested in advanced degrees should take Chem 345, 346, and 348 (a one-year course in organic chemistry).

2 3 hours from MBioS 410, 423, 426, 440, 442, 450, 466, 478, 498, 499.

**GENETICS AND CELL BIOLOGY  
(120 HOURS)**

**First Year**

**First Term**
- Biol 106 [B] (GER) 4
- Chem 105 [P] (GER) 4
- Engl 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
- Math 140 [N] or 171 [N] (GER) 4

**Second Year**

**First Term**
- Arts & Humanities [H,G] (GER) 3
- MBioS 301 4
- Phys 101 [P] (GER) 4

**Second Term**
- Arts & Humanities [H,G] (GER) 3
- MBioS 301 4
- MBioS 304 [M] 3
- Phys 101 [P] or 201 [P] (GER) 4

**Third Year**

**First Term**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Communication Proficiency [C,W] (GER) 3
- Math 172, Stat 212 [N] (GER), or 412 3 or 4
- MBioS 305 3

**Second Term**
- Intercultural Studies [I,G,K] (GER) 3
- MBioS 401 3
- MBioS 454 [M] 3
- Elective 3 or 4

1 Pre-med students and those interested in advanced degrees should take Chem 345, 346, and 348 (a one-year course in organic chemistry).

2 Lab elective: minimum of 3 hrs. selected from MBioS 341, 402 [M], 430 [M], 478, 495, 498 (3 hrs), 499 (3 hrs). Students pursuing a BA minor may also select from Acctg 230, 231, Fin 325, or MgtOp 340.


5 Soc 430 is recommended, but not required.

6 Soc 331 is recommended, but not required.

**MICROBIOLOGY AND MEDICAL TECHNOLOGY  
(120 HOURS)**

**First Year**

**First Term**
- Biol 106 [B] (GER) 4
- Chem 105 [P] (GER) 4
- Engl 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
- Math 140 [N] or 171 [N] (GER) 4

1 Pre-med students and those interested in advanced degrees should take Chem 345, 346, and 348 (a one-year course in organic chemistry).


3 Lecture electives: select one from Biol 325, 519, MBioS 413, 423, 426, 427, 440, 442, 450.
### Second Year

<table>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>MBioS 301</td>
<td>4</td>
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<td>MBioS 302</td>
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<td>Phys 101 [P] (GER)</td>
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<table>
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<tbody>
<tr>
<td>MBioS 303</td>
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<tr>
<td>Phys 102 [P] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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Complete Writing Portfolio

### Third Year

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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Intercultural Studies [I,G,K] (GER)</td>
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<td>MBioS 410</td>
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### Fourth Year

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<td>MBioS 404</td>
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<td>MBioS 430 [M]</td>
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<td>MBioS 440</td>
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<td>MBioS 442</td>
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<tr>
<td>MBioS 496</td>
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<tr>
<td>Tier III Course ([T]) (GER)</td>
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<tr>
<td>Elective</td>
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</tbody>
</table>

\(^1\) Pre-med students and those interested in advanced degrees should take Chem 345, 346, and 348 (a one-year course in organic chemistry).

\(^2\) Lecture elective: select one from MBioS 426, 446, 448, 450.

\(^3\) Lab elective: select one from Entom 343 and 344 (taken concurrently), Biol 418, MBioS 444 and 445 (taken concurrently), MBioS 454; for Medical Technology option take Biol 418.

### Minors

#### Biochemistry

A minor in biochemistry requires 20 hours including Chem 345, 346; MBioS 303, 304, 413; 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, 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 305 and 306, and the remaining at the 300-400-level selected from: MBioS 342, 410, 411, 426, 440, 441, 442, 443, 444, 445, 446, 448, 450, 454, 498, 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; 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, 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

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<th>MBioS</th>
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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.

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.

305 (302) General Microbiology 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.

306 (302) General Microbiology Laboratory 2 (0-6) Prereq MBioS 305 or c//. Laboratory for MBioS 305.

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.

360 [M] Cell and Molecular Laboratory 2 (0-6) Prereq MBioS 301; MBioS 303 or c//; one semester organic chemistry. Laboratory methods in cell biology, genetics and molecular biology.

401 Cell Biology 3 Prereq MBioS 301; MBioS 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.

404 Molecular Genetics 3 Prereq MBioS 301; MBioS 303 or c//; MBioS 303. Introduction of prokaryotic and eukaryotic genome organization and gene expression, modern molecular techniques, experimental approaches, genome and gene function and analyses.

410 (340) Medical Microbiology 3 Prereq MBioS 305; MBioS 306; MBioS 404 or c//. Microbial pathogens and their relationship to disease.

411 (341) Diagnostic Medical Bacteriology 2 (0-6) Prereq MBioS 410 or c//. Techniques and tests for the identification of bacteria pathogenic for humans.

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.

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.


426 Microbial Genetics 3 Prereq MBioS 301; 303. 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 488. Credit not granted for both MBioS 427 and 527.

430 [M] Advanced Microbiology Laboratory 3 (1-6) Prereq MBioS 305, 306; c// MBioS 440 or 442. Fundamental principles in immunology including the cultivation and characterization of viruses using laboratory techniques.
440 Immunology 3 Prereq MBioS 302; organic chemistry. Principles of basic immunology. Credit not granted for both MBioS 440 and 540.

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; MBioS 303 or cc/. 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 cc/. Laboratory techniques concerning cultivation and characterization of viruses. Cooperative course taught by WSU, open to UI students (MMBB 415).

444 Food and Applied Microbiology 2 Prereq introductory microbiology. Same as FSHN 416.

445 Food Microbiology Laboratory 2 (0-6) 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 Microbial Physiology 3 Prereq MBioS 303; MBioS 305 and 306. Basic microbial physiology and its relevance to the processes of applied microbiology. Credit not granted for both MBioS 450 and 550.


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, diffraction and scattering. Credit not granted for both 466 and 566.


490 Special Topics in Molecular Biology V 1-2 May be repeated for credit. Prereq senior standing. Current topics discussed by experts in the field.

492 Senior Project in Genetics and Cell Biology 1 Prereq senior standing. Written paper and seminar presentation on laboratory research project.

494 Senior Project in Biochemistry 1 Prereq senior standing. 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 standing. 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; requires written report and oral presentation.

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

501 Cell Biology 3 Prereq MBioS 301, 303, or graduate standing. Graduate-level counterpart of MBioS 401; additional requirements. Credit not granted for both MBioS 401 and 501.

503 Molecular Biology I 3 Prereq MBioS 301, 303, or graduate standing. 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, or graduate standing. Gene expression and regulation in prokaryotes and eukaryotes, including transcription, RNA processing, and translation; chromatin structure; DNA repair.

513 General Biochemistry I 3 Prereq MBioS 303, graduate standing. Graduate-level counterpart of MBioS 413; additional requirements. Credit not granted for both 413 and 513.

514 General Biochemistry 3 Prereq MBioS 413, or graduate standing. Graduate-level counterpart of MBioS 414; additional requirements. Credit not granted for both 414 and 514.

523 Fundamentals of Oncology 3 Prereq MBioS 513. Same as P/T 572.

525 Advanced Topics in Genetics V 1 or 2 May be repeated for credit. Prereq MBioS 503. Recent research in selected areas of genetics.

526 Advanced Topics in Cell Biology V 1-3 Prereq MBioS 501. Current research in cell structure and function. May be repeated for credit; cumulative maximum 7 hours. Cooperative course taught by WSU, open to UI students (Genet/PSc 592).

527 Perspectives in Biotechnology 3 Prereq MBioS 301 or graduate standing. Same as A S 588. Credit not granted for both MBioS 427 and 527.

528 Molecular and Cellular Reproduction 3 (2-2) State of the art concepts of the molecular, cellular, and physiological aspects of mammalian reproduction.

532 Plant Transmission Genetics 3 Prereq MBioS 301, or graduate standing. Same as CropS 504.

535 Molecular Genetics of Plant and Pathogen Interactions 3 Prereq MBioS 301, 303. Same as PI P 535.

540 Immunology 3 Prereq MBioS 302; organic chemistry or graduate standing. Graduate-level counterpart of MBioS 440; additional requirements. Credit not granted for both MBioS 440 and 540.

541 Research Seminar 1 May be repeated for credit. Literature reviews and research reports.

542 General Virology 3 Prereq MBioS 301, 303 or cc/; organic chemistry or graduate standing. Graduate-level counterpart of MBioS 442; additional requirements. Credit not granted for both MBioS 442 and 542.

547 Advanced Topics in Microbiology V 1-3 May be repeated for credit. Prereq MBioS 550.

548 Selected Topics in Virology 1 Prereq MBioS 445, 542, or cc/. Selected topics in virology using the current literature.

549 Seminar in Immunology 1 Prereq MBioS 440 or graduate standing. Seminar series on advances in immunology. May be repeated for credit; cumulative maximum 2 hours.

550 Microbial Physiology 3 Prereq MBioS 303, MBioS 305 and 306, or graduate standing. Graduate-level counterpart of MBioS 450; additional requirements. Credit not granted for both MBioS 450 and 550.

554 Chromosome Structure and Function 3 Prereq MBioS 301 or graduate standing. Same as Crops 554.

561 Biochemical Signaling in Plants, Animals and Microorganisms 3 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 standing. Graduate-level counterpart of MBioS 466; additional requirements. Credit not granted for both 466 and 566.

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.

571 Advanced Topics in Plant Biochemistry 3 Prereq MBioS 514; introductory botany. Biochemistry unique to plants; new research advances.

574 Protein Biotechnology 3 Prereq MBioS 513 or cc/; Biotechnology related to the isolation, modification and large scale commercial production, patenting and marketing of useful recombinant proteins and products.
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 photoregulation, nitrogen fixation, photosynthesis, 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 and biochemistry, 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 molecular biology, advanced molecular plant sciences, plant morphology and anatomy, and metabolism. 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 faculty member. 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.

Students are typically supported by the program during the first academic year. Financial support during subsequent years will be managed by the administering academic unit. 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 MPS and cooperating departments and programs. In addition, a seminar is held weekly during each semester.
The School of Music prepares students for careers in music with degrees in music education, performance, composition and interdisciplinary studies. The School promotes a lifelong passion for music in its students by developing their scholarly, intellectual, creative and technical abilities. Essential to fulfilling this mission is our understanding that each facet of the study of music culminates in the performance and creation of music.

The focal emphases are supported by studies in musicianship including performing, listening, history, theory, composition and teaching. We value:

- conceptual understanding of musical components and processes
- continued practice in creating, interpreting, presenting, analyzing, and evaluating music
- increasing understanding of various musical cultures and historical periods
- acquiring capacities to integrate musical knowledge and skills
- accumulating capabilities for independent work in the music professions

Performance Studies in Music

Performance studies are offered on several levels to meet the needs of music majors as well as those of students from the general university community. There are no additional fees or tuition charges for the use of practice facilities. The 100-level performance studies are open to any student without audition through class instruction. The 200-level denotes group or private instruction for advanced non-music majors by special permission of the department chair (audition required).

Individual instruction in performance studies is offered at the 300- and 400-level for music majors and, by special permission of the department chair, to advanced non-music majors who meet all requirements for music majors as listed below. All students enrolled in 2-400-level performance instruction are required to attend weekly convocation (student recital), attend recitals as required, participate in at least one approved music department ensemble, and take applied jury examinations at the end of each term. A small tuition charge is assessed per 200-400-level course, not dependent on total credits. Students enrolled in 300- and 400-level performance study must enroll in a music theory or music history course each semester until music core requirements have been completed. No student will be permitted to enroll in 300-400-level performance studies unless these criteria are met. In addition, each music major must pass the piano proficiency exam, as a precondition to upper-division standing. Performance studies may not be taken on a pass-fail basis.

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 analyses);
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 analyses);
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; and
3) critically evaluate the history and development of music through the present time and place music in historical, cultural and stylistic contexts; 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
4) 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.

Schedules of Studies

Students must complete 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 GEAs.

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 200 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, of 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 junior and/or senior qualifying 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.

BACHELOR OF ARTS IN MUSIC

(120 HOURS)

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 GEs 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; senior qualifying exam; piano proficiency exam or grade of C or better in Mus 182.

First Year

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<tr>
<td>Engl 101 [W]</td>
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<td>Mus 181</td>
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<td>Mus 251</td>
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<td>Mus 252^1</td>
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<td>Mus Private Lessons</td>
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<td>Science Elective (GER)</td>
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<td>Biological Sciences [B] (GER)</td>
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Second Year

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<td>Physical [P] Sciences (GER)</td>
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<td>Complete Writing Portfolio</td>
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Third Year

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<td>Intercultural Studies [I,G,K]</td>
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<td>Mus 360 [M]^3</td>
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<td>200-400-level Non-Music Electives</td>
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Fourth Year

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<td>300-400-level Music Elective</td>
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Second Term

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### BACHELOR OF MUSIC - BUSINESS OPTION (120 HOURS)

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 half recital in the major performance medium.

Students must pass the piano proficiency exam, pass the senior qualifying exam, achieve a 2.5 gpa and a grade of C or better in all music classes. The 3 credits of 300-400-level music electives may not be in music private lessons or ensembles. Class piano credits are not required for the degree. The College of Business and Economics offers several minors. Criteria for certification of a minor include completion of 60 credits and meeting other criteria set by the College of Business and Economics. Some business and economics minors require only 16 credits; this number has been used in calculating the degree credit total. Where a minor requires additional credits, either students may use elective hours or must complete additional credits for the degree. In order to take 300-400-level courses in the College of Business and Economics, the student must be certified in her/his major and have completed at least 60 credits.

First Year

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<tr>
<th>Term</th>
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<tbody>
<tr>
<td>First Term</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Engl 101 [W]</td>
<td>(GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Mus 181</td>
<td>0 or 1</td>
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<td>Mus 251</td>
<td>3</td>
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<td>Mus 252</td>
<td>1</td>
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<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

### BACHELOR OF MUSIC - ELECTRICAL ENGINEERING AND COMPUTER SCIENCE OPTION (123 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; senior qualifying exam; piano proficiency exam.

Students following this option are required to present an acceptable senior half recital in the major performance medium. At least 42 of the hours required for this degree must be 300-400-level courses.

Students must pass the proficiency exam, achieve a 2.5 GPA and a grade of C or better in all music courses. The three credits of 300-400-level music electives may not be in music private lessons or ensembles. Class piano credits are not required for the degree. The School of Electrical Engineering and Computer Science offers several minors. Criteria for certification of a minor includes completion of 60 credits and meeting other criteria, such as appropriate math placement. Of the four minors available, three require 16 credits and one requires 20 credits. However, all require math courses not listed in the minor itself but necessary as prerequisites to other courses. Consultation with the School of Electrical Engineering and Computer Science will provide students with details concerning math and physics. Students may use elective credits for additional math and other prerequisites.

### 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>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107 (if necessary)</td>
<td>0 or 4</td>
</tr>
<tr>
<td>Mus 181</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Mus 251</td>
<td>3</td>
</tr>
<tr>
<td>Mus 252</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
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**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ComSt 102 [C] (GER)</td>
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</tr>
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<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math [N] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Mus 182</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Mus 253</td>
<td>3</td>
</tr>
<tr>
<td>Mus 254</td>
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</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
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<tr>
<td>Mus Private Lessons</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>Cpt S 121 or 251</td>
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<td>Mus 351</td>
<td>3</td>
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<tr>
<td>Mus 352</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Science (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE/Cpt S minor course</td>
<td>4</td>
</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 353</td>
<td>3</td>
</tr>
<tr>
<td>Mus 354</td>
<td>1</td>
</tr>
<tr>
<td>Mus 359</td>
<td>3</td>
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<tr>
<td>Mus Ensemble 428-444</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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### Third Year

**First Term**

<table>
<thead>
<tr>
<th>Course</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>Mus 257 or 258</td>
<td>2</td>
</tr>
<tr>
<td>Mus 360</td>
<td>1</td>
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<tr>
<td>Mus ensemble 428-444</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>
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**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>E E or Cpt S Minor Course</td>
<td>3</td>
</tr>
<tr>
<td>Mus 361</td>
<td>3</td>
</tr>
<tr>
<td>Mus 435 or 428</td>
<td>1</td>
</tr>
<tr>
<td>Mus 452</td>
<td>2</td>
</tr>
<tr>
<td>Mus 481</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
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**Fourth Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K] or Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>E E or Cpt S Minor Course</td>
<td>2 or 4</td>
</tr>
<tr>
<td>Mus Electives 300-400</td>
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</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons 400-level &amp; senior recital</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>3-7</td>
</tr>
</tbody>
</table>

### BACHELOR OF MUSIC - THEATRE OPTION (120 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 combination 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 senior qualifying exam, 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.

### Fourth Year

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 351</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Mus 251</td>
<td>3</td>
</tr>
<tr>
<td>Mus 252</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
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<td>Mus Private Lessons</td>
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**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>EE/Cpt S minor course</td>
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</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 353</td>
<td>3</td>
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<td>Mus 354</td>
<td>1</td>
</tr>
<tr>
<td>Mus 359</td>
<td>3</td>
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<tr>
<td>Mus Ensemble 428-444</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
</tr>
</tbody>
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1. Class piano credits not required for degree.
2. Fall only.
3. Spring only.
## MUSIC COMPOSITION DEGREE

(127 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: senior qualifying exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; senior recital.

### First Year

#### First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<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>Mus 181*</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Mus 251^</td>
<td>3</td>
</tr>
<tr>
<td>Mus 252^</td>
<td>1</td>
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<tr>
<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Second Term

<table>
<thead>
<tr>
<th>Course</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>Communication [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 182^</td>
<td>0 or 1</td>
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<tr>
<td>Mus 253^</td>
<td>3</td>
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<tr>
<td>Mus 254^</td>
<td>1</td>
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<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</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>Math Proficiency [N] (GER)</td>
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<td>Mus 182 or 281^</td>
<td>0 or 1</td>
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<td>Mus 351^</td>
<td>3</td>
</tr>
<tr>
<td>Mus 352^</td>
<td>1</td>
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<tr>
<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
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#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Mus 256</td>
<td>2</td>
</tr>
<tr>
<td>Mus 353^</td>
<td>1</td>
</tr>
<tr>
<td>Mus 354^</td>
<td>1</td>
</tr>
<tr>
<td>Mus 359^</td>
<td>3</td>
</tr>
<tr>
<td>Mus Ensemble (Choral)^1</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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### Third Year

#### First Term

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Mus 181 or 281^</td>
<td>3</td>
</tr>
<tr>
<td>Mus 360 [M]^15</td>
<td>3</td>
</tr>
<tr>
<td>Mus 451*</td>
<td>2</td>
</tr>
<tr>
<td>Mus 456</td>
<td>2</td>
</tr>
<tr>
<td>Mus Ensemble (music elective)^13</td>
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</tr>
<tr>
<td>Mus Private Lessons (202 or 302)</td>
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<tr>
<td>Music Electives</td>
<td>4</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or</td>
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</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td></td>
</tr>
<tr>
<td>Mus 361 [M]^15</td>
<td>3</td>
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<tr>
<td>Mus 453^</td>
<td>2</td>
</tr>
<tr>
<td>Mus 456</td>
<td>2</td>
</tr>
<tr>
<td>Mus 481*</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble (music elective)^13</td>
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</tr>
<tr>
<td>Music Electives</td>
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</tr>
<tr>
<td>Private Lessons (Mus 202 or 302)</td>
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### Fourth Year

#### First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 455^6</td>
<td>2</td>
</tr>
<tr>
<td>Mus 456</td>
<td>3</td>
</tr>
<tr>
<td>Mus 482^2</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble (music elective)^13</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
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<tr>
<td>Music Electives</td>
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#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
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<td>Mus 452^2</td>
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<td>Mus 456</td>
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<tr>
<td>Mus Ensemble (music elective)^13</td>
<td>1</td>
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<tr>
<td>Music Electives</td>
<td>1</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
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</tbody>
</table>

1. Required if enrolled for applied music, but not required in degree; Class piano credits not required.

2. Fall only.

3. Chosen from Mus 428-444.

4. Spring only.


6. Fall, alternate year only.

7. Spring, alternate years only.

### MUSIC EDUCATION - BROAD ENDORESEMENT 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.

Students must pass the Piano Proficiency Exam, pass the senior qualifying 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; senior qualifying exam, piano proficiency, 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>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 181^1</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Mus 251^2</td>
<td>3</td>
</tr>
<tr>
<td>Mus 252^2</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
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### Second Year

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
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<td>Mus 256</td>
<td>2</td>
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<td>Mus 353^3</td>
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<tr>
<td>Mus 354^4</td>
<td>1</td>
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<td>Mus 359^5</td>
<td>3</td>
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<tr>
<td>Mus Ensemble (Choral)^1</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
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<tr>
<td>T &amp; L 301</td>
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### Third Year

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 361 [M]^15</td>
<td>3</td>
</tr>
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<td>Mus 483^3</td>
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<td>Mus 489^4</td>
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<td>Mus Ensemble</td>
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<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Science Elective [B,P,Q] (GER)</td>
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<td>T &amp; L 465</td>
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### Fourth Year

<table>
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<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 455^6</td>
<td>2</td>
</tr>
<tr>
<td>Mus 456</td>
<td>3</td>
</tr>
<tr>
<td>Mus 482^2</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble (music elective)^13</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
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<tr>
<td>Music Electives</td>
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</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

1. Required if enrolled for applied music, but not required in degree; Class piano credits not required.

2. Fall only.

3. Chosen from Mus 428-444.

4. Spring only.


6. Fall, alternate year only.

7. Spring, alternate years only.
### Fourth Year

#### First Term
- **Hours**
  - 400-level Mus Private Lessons: 2
  - Biological Sciences [B] (GER): 4
  - Mus 435 or 428: 1
  - Mus 455\(^3\): 2
  - Mus 480\(^6\): 3
  - Mus 493\(^3\): 2
  - T & L 467: 3

#### Second Term
- **Hours**
  - EdPsy 468: 3
  - Intercultural Studies [I,G,K] (GER): 3
  - T & L 470: 3

#### Third Term
- **Hours**
  - Engl 201 [W] (GER): 3
  - GenEd 111 [A] (GER): 3
  - Math Proficiency [N] (GER): 2
  - Mus 182\(^3\): 3
  - Mus 253\(^3\): 1
  - Mus Ensemble: 1
  - Mus Private Lessons: 2
  - T & L 300: 1

#### Second Year

#### First Term
- **Hours**
  - Arts & Humanities [H,G] (GER): 3
  - Arts & Humanities [H,G] or Social Sciences [S,K] (GER): 3
  - Mus 182\(^2\): 3
  - Mus 351\(^3\): 1
  - Mus 352\(^3\): 1
  - Mus 491\(^3\): 2
  - Mus Ensemble: 1
  - Mus Private Lessons: 2
  - T & L 301: 2

#### Second Term
- **Hours**
  - Mus 353\(^2\): 3
  - Mus 354\(^2\): 1
  - Mus 359\(^2\): 3
  - Mus 481\(^2\): 1
  - Mus 490\(^2\): 4
  - Mus Ensemble: 1
  - Mus Private Lessons: 2
  - T & L 317: 2
  - May Field Experience: 1
  - Certify Major, Certify T & L Complete Writing Portfolio: 1

### Fifth Year

#### First Term
- **Hours**
  - Mus 497: 4
  - T & L 415: 12

### MUSIC EDUCATION - CHORAL/GENERAL ENDORSEMENT OPTION (143 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. Students must pass the Piano Proficiency Exam, pass the senior qualifying 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. Vocalists must complete 4 credits of vocal performance studies.

This option provides teacher certification in designated arts: Music (choral 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; senior qualifying exam, piano proficiency, solo half-recital. Approved performing groups: a minimum of 1 hour during each of 7 semesters, to include at least one semester of Mus 428 for vocalists.

#### First Year

#### First Term
- **Hours**
  - Engl 101 [W] (GER): 3
  - GenEd 110 [A] (GER): 3
  - Mus 181\(^1\): 0 or 1
  - Mus 251\(^2\): 3

#### Second Term
- **Hours**
  - Intercultural Studies [I,G,K] (GER): 3
  - Physical Science [P] (GER): 4
  - T & L 470: 3

#### Third Term
- **Hours**
  - Engl 201 [W] (GER): 3
  - GenEd 111 [A] (GER): 3
  - Math Proficiency [N] (GER): 3
  - Mus 182\(^2\): 0 or 1

---

\(^1\) 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.
\(^5\) Fall, alternate year only.
\(^6\) Spring, alternate years only.

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<table>
<thead>
<tr>
<th>Year</th>
<th>Term</th>
<th>Hours</th>
<th>Courses</th>
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<tbody>
<tr>
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<td>Mus 254&lt;sup&gt;1&lt;/sup&gt; 1</td>
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<td>Mus Ensemble 428-444 1</td>
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<td>T &amp; L 300</td>
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<td>Mus 353&lt;sup&gt;1&lt;/sup&gt; 3</td>
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<td>Mus 354&lt;sup&gt;1&lt;/sup&gt; 1</td>
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<td>T &amp; L 317</td>
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<td>May Field Experience</td>
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<td>Certify Major, Certify T &amp; L</td>
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<td>Complete Writing Portfolio</td>
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<td>Third Year</td>
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<td>Intercultural Studies [I,G,K] (GER) 3</td>
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<td>Mus 360 [M]&lt;sup&gt;24&lt;/sup&gt; 3</td>
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<td>T &amp; L 464</td>
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<td>Mus 361 [M]&lt;sup&gt;24&lt;/sup&gt; 4</td>
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<td>T &amp; L 465</td>
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<td>T &amp; L 466</td>
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<td>400-level Mus Private Lessons 2</td>
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<td>Mus 435</td>
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<td></td>
<td>Mus 455&lt;sup&gt;1&lt;/sup&gt; 2</td>
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<td>Mus 493&lt;sup&gt;1&lt;/sup&gt; 3</td>
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<td>T &amp; L 467</td>
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<td>EdPsy 468</td>
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<td>Mus 487&lt;sup&gt;1&lt;/sup&gt; 2</td>
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<td>Mus 494&lt;sup&gt;1&lt;/sup&gt; 4</td>
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<td></td>
<td>Physical Sciences [P] (GER) 4</td>
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<td>Ensemble and Mus Private Lessons–optional</td>
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<td>First Term</td>
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<td>Mus 497</td>
</tr>
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<td></td>
<td>T &amp; L 415</td>
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</tbody>
</table>

**First Year**

- **First Term**
  - Engl 101 [W] (GER) 3
  - GenEd 110 [A] (GER) 3
  - Mus 181<sup>1</sup> 0 or 1
  - Mus 251<sup>2</sup> 3
  - Mus 252<sup>2</sup> 1

1. Class piano credits not required in degree.
2. Fall only.
3. Spring only.
5. Fall, alternate year only.
6. Spring, alternate years only.

**MUSIC EDUCATION - WITHOUT TEACHING CERTIFICATE OPTION (125 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 senior qualifying 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, 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.

This option provides professional preparation in music combined with studies in education. Students may complete teacher certification requirements after completion of this degree through further enrollment as undergraduate second degree candidates, enrollment as post-baccalaureate non-degree students, or as graduate students, each of which requires application for admission. Students planning to seek admission and enroll as graduate students should, at the beginning of their last semester of undergraduate study, complete the necessary form to count selected courses in the final undergraduate semester toward the graduate degree, up to a maximum of 6 credits.

**Second Term**

- First Term
  - Engl 201 [W] (GER) 3
  - GenEd 111 [A] (GER) 3
  - Math Proficiency [N] (GER) 3
  - Mus 182<sup>1</sup> 0 or 1
  - Mus 253<sup>2</sup> 3
  - Mus 254<sup>1</sup> 1
  - Mus Ensemble 428-444 1
  - Mus Private Lessons 2
  - T & L 300 1

- Second Term
  - Mus 353<sup>1</sup> 3
  - Mus 354<sup>1</sup> 1
  - Mus 359<sup>1</sup> 3
  - Mus 481<sup>1</sup> 1
  - Mus 490<sup>1</sup> 4
  - Mus Ensemble (Instrumental) 1
  - Mus Private Lessons 2
  - Science Elective [B,P,Q] (GER) 4
  - T & L 301 2

**Fourth Year**

- First Term
  - Mus 258<sup>1</sup> 2
  - Mus 360 [M]<sup>24</sup> 3
  - Mus 455<sup>1</sup> 2
  - Mus Ensemble (Choral) 1
  - Mus Private Lessons 2
  - T & L 464 3
  - T & L 465 3

- Second Term
  - Arts & Humanities [H,G] (GER) 3
  - Mus 361 [M]<sup>24</sup> 3
  - Mus 428 or 435 1
  - Mus Private Lessons 2
  - Physical Science [P] (GER) 4
  - T & L 466 2

**Fourth Year**

- First Term
  - Biological Science [B] (GER) 4
  - Mus 455 2
  - Mus 580 or Electives 3
  - Mus Endorsement Electives 2
  - Mus Ensemble (Choral) 1
  - Mus Private Lessons (400-level, Sr. Recital) 2

- Second Term
  - Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - Intercultural Studies [I,G,K] (GER) 3
  - Mus Endorsement Electives 4
  - Tier III Course [T] (GER) 3

<sup>1</sup> Class piano credits not required in degree.
<sup>2</sup> Fall only.
## Fourth Year

### First Term

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<thead>
<tr>
<th>Course Code</th>
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<th>Hours</th>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Musical Theory [M]</td>
<td>4</td>
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<tr>
<td>Mus 452</td>
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<td>Mus 465</td>
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<td>Mus 482</td>
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<tr>
<td>Mus Ensemble</td>
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<tr>
<td>Mus Private Lessons</td>
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<tr>
<td>Music Electives</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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### Second Term

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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Mus 392 or 393 or 394</td>
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<td>Mus 453</td>
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<td>Mus Ensemble</td>
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<td>Mus Private Lessons</td>
<td>4</td>
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<tr>
<td>Music Electives</td>
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</tr>
<tr>
<td>Music Electives</td>
<td>3</td>
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</tbody>
</table>

### Music Performance - Flute, Saxophone, Trumpet, and Voice (Jazz Studies) (127 Hours)

This option with an emphasis in jazz is available to students whose major instruments are flute, saxophone, percussion, trumpet, or voice.

### Requirements include:
- Junior and senior qualifying exams; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; half and full recitals.

### First Year

<table>
<thead>
<tr>
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<th>Course Name</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Appl</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td></td>
</tr>
<tr>
<td>Mus 251</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mus 252</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mus Ensemble</td>
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<td></td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>3</td>
<td></td>
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<tr>
<td>Music Electives</td>
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### Second Year

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<th>Hours</th>
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<tbody>
<tr>
<td>Appl</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
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<td>Mus 252</td>
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<td>Mus 254</td>
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<td>Mus Ensemble</td>
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<td>Mus Private Lessons</td>
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<td>Secondary Instrument or Mus 487</td>
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<td>Complete Writing Portfolio</td>
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### Third Year

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<td>Mus 251</td>
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<td>Mus 360 [M] (GER)</td>
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<td>Mus 457</td>
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<td>Mus Ensemble 428-444</td>
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### Fourth Year

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<td>Appl</td>
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<td>Engl 101 [W] (GER)</td>
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<tr>
<td>Intercultural Studies [I,G,S,K,I]</td>
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<tr>
<td>Mus 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.</td>
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<td>Fall, alternate year only.</td>
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<tr>
<td>One credit of pedagogy is required in respective area: woodwind (392), Percussion (393) or Brass (394).</td>
<td>4</td>
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### Music Performance - Keyboard Option (127 Hours)

Requirements include: Accompany a junior, senior, or graduate recital; piano proficiency exam; junior and senior qualifying exams; junior recital; senior recital; 2.5 average in all music courses; C or better in all music courses.

### First Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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<td>Engl 101 [W] (GER)</td>
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<td>Mus 251</td>
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<td>Mus 252</td>
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<td>Mus 441</td>
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<td>Mus Private Lessons</td>
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<tr>
<td>Science Elective (GER)</td>
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1. Spring only.
2. Class piano credits not required.
3. Fall only.
4. Courses are taught alternate years.
5. Spring only.
7. Fall, alternate year only.
8. One credit of pedagogy is required in respective area: woodwind (392), Percussion (393) or Brass (394).
### Second Term

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<th>Course</th>
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### Second Year

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<td>Mus 351</td>
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<td>Physical Sciences [P] (GER)</td>
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### Third Year

<table>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Mus Private Lessons</td>
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<td>Math Proficiency [N] (GER)</td>
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### MUSIC PERFORMANCE - KEYBOARD WITH ELECTIVE STUDIES IN PEDAGOGY OPTION (129 HOURS)

Requirements include: Accompany a junior, senior, or graduate recital; piano proficiency exam; junior and senior qualifying exams; junior recital; senior recital; 2.5 average in all music courses; C or better in all music courses.

### First Year

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### MUSIC PERFORMANCE - VOICE OPTION (150 HOURS)

Requirements include: junior and senior qualifying exams; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; junior and senior recitals.

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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.
5 Spring, alternate years only.

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Music and Theatre Arts
Music and Theatre Arts

Physical Sciences [P] (GER) 4
Social Science [S, K] (GER) 3

Second Term  Hours
Arts & Humanities [H,G] (GER) 3
Intercultural Studies [I,G,K] (GER) 3
Mus 361 [M] 2
Mus 428 1
Mus 453 2
Mus 481 1
Mus Private Lessons 4

Fourth Year

First Term  Hours
Biological Science [B] (GER) 4
Foreign Language 4
Mus 465 2
Mus Ensemble 1
Mus Private Lessons 4

Second Term  Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Foreign Language 4
Mus 483 1
Mus Ensemble 1
Mus Private Lessons 4
Tier III Course [T] (GER) 3

1 Class piano credits not required.
2 Fall only.
3 Chosen from Mus 428-444.
4 Spring only.
5 Fall, alternate year only.
6 Spring, alternate years only.
7 Mus 360 and 361 fulfill the College of Liberal Arts [H,G,S,K,I] requirement.
8 Courses are taught alternate years.

Minors

Jazz Studies Minor
Required courses: Mus 257, 258, 362, 457, 458, and one 3-credit Mus course; four credits from 438, 439, 440.

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, 262 or 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 2
103 Voice 2

151 Music Fundamentals I 3 Notation and performance of music fundamentals: pitch, rhythm, scales, key signatures, and intervals.

152 Music Fundamentals II 3 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 3 Introduction to musical style in composition, history, and analysis including theory fundamentals, history survey, and beginning composition.

160 [H] Survey of Music Literature 3 Exploration of predominantly western music through demonstrations, performances, lectures, concerts, and discussions.

163 [G] World Music 3 Exploration of music from a global perspective through demonstrations, performances, lectures and discussion.

181 Class Piano I 1 (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 harmonization and improvisation.

182 Class Piano II 1 (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 2 (0-6)
202 Piano 2 (0-6)
203 Voice 2 (0-6) Prereq c// in Mus 431, 432, or by interview only.
204 Horn 2 (0-6)
205 Trumpet 2 (0-6)
206 Trombone 2 (0-6)
207 Baritone 2 (0-6)
208 Tuba 2 (0-6)
209 Percussion 2 (0-6)
210 Violin 2 (0-6)
211 Viola 2 (0-6)
212 Violoncello 2 (0-6)
213 Contrabass 2 (0-6)
214 Flute 2 (0-6)
215 Oboe 2 (0-6)
216 Clarinet 2 (0-6)
217 Bassoon 2 (0-6)
218 Saxophone 2 (0-6)

251 Materials and Structures of Music I 3 By examination. Ear training, conducting, rhythmic reading, sight singing, keyboard, dictation.

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 3 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 I May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 353 or c//. 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 2 (0-6)
302 Piano 2 (0-6)
303 Voice 2 (0-6) Prereq c// in Mus 431, 432, or by interview only.
304 French Horn 2 (0-6)
305 Trumpet 2 (0-6)
306 Trombone 2 (0-6)
307 Baritone 2 (0-6)
308 Tuba 2 (0-6)
309 Percussion 2 (0-6)
310 Violin 2 (0-6)
311 Viola 2 (0-6)
312 Violoncello 2 (0-6)
313 Contrabass 2 (0-6)
314 Flute 2 (0-6)
315 Oboe 2 (0-6)
316 Clarinet 2 (0-6)
317 Bassoon 2 (0-6)
318 Saxophone 2 (0-6)

319 Secondary Performance Study 2 (0-4) May be repeated for credit; cumulative maximum 12 hours. Prereq certified 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.

359 [M] History of Music: Antiquity to 1650 3 Mus 251; Mus 252; Eng 101. Development and change in the musical culture from antiquity to 1650.

360 [M] History of Music: 1650 - 1850 3 Prereq Mus 251; Mus 252; Mus 359; Engl 101. Development and change in musical culture from 1650 to 1850.

361 [M] History of Music: 1850 - Present 3 Prereq Mus 251; Mus 252; Mus 360; Engl 101. Development and change in musical culture from 1850 to the present.

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.

363 [G] Women in Music 3 Interdisciplinary examination of the way gender intersects with race and class to affect American women in music.

364 Introduction to Sound Recording Technology 3 Music, audio and recording technology throughout history and its influence on society and culture.

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 Prereq Mus 371. 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) Pedagogy, methods and techniques for woodwind instruments; fundamental approaches to teaching woodwind instruments.

393 Percussion Pedagogy 1 (0-4) Pedagogy, methods and techniques for woodwind instruments; fundamental approaches to teaching percussion instruments.

394 Brass Pedagogy 1 (0-4) Pedagogy, methods and techniques for woodwind instruments; fundamental approaches to teaching brass instruments.

401 Organ 2 (0-6)

402 Piano 2 (0-6)

403 Voice 2 (0-6) Prereq c// in Mus 431, 432, or by interview only.

404 French Horn 2 (0-6)

405 Trumpet 2 (0-6)

406 Trombone 2 (0-6)

407 Baritone 2 (0-6)

408 Tuba 2 (0-6)

409 Percussion 2 (0-6)

410 Violin 2 (0-6)

411 Viola 2 (0-6)

412 Violoncello 2 (0-6)

413 Contrabass 2 (0-6)

414 Flute 2 (0-6)

415 Oboe 2 (0-6)

416 Clarinet 2 (0-6)

417 Bassoon 2 (0-6)

418 Saxophone 2 (0-6)

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. Public performance may be 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. 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. By audition only.

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 351 or c//. Contrapuntal techniques of the 16th and 18th century with original stylistic writing.

452 Electronic Music 2 (1-3) Prereq Mus 353 or c//. 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 or c//. 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 351 or c//. 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) May be repeated for credit; cumulative maximum 12 hours. Credit not granted for both Mus 459 and 559. Prereq Mus 457 or permission. Creation of works for Jazz Ensembles.

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, 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 3 Prereq certified major music. Philosophies, administration, organization, materials and methods for instrumental music education K-12. Credit not granted for both Mus 480 and 580.

481 Fundamentals of Conducting 1 (0-3) Prereq Mus 254 or c/. Basic techniques, patterns, preparations 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 I 2 (0-6) Prereq Mus 481. Preparation in the administration of choral programs from auditions to the selection and rehearsal of choral literature. Credit not granted for both Mus 488 and 588.

489 Choral Methods and Materials II 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 percussion 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 fingerprinting 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 May be repeated for credit; cumulative maximum 6 hours. Prereq applied piano study. Piano Pedagogy Practicum 2 Supervised teaching in Piano Preparatory Lab School, including lesson planning and meetings with coordinator for critiques and suggestions. S, F grading.

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

501 Organ 2 (0-6)

502 Piano 2 (0-6)

503 Voice 2 (0-6) Prereq c// in Mus 431, 432, or by interview only.

504 French Horn 2 (0-6)

505 Trumpet 2 (0-6)

506 Trombone 2 (0-6)

507 Baritone 2 (0-6)

508 Tuba 2 (0-6)

509 Percussion 2 (0-6)

510 Violin 2 (0-6)

511 Viola 2 (0-6)

512 Violoncello 2 (0-6)

513 Contrabass 2 (0-6)

514 Flute 2 (0-6)

515 Oboe 2 (0-6)

516 Clarinet 2 (0-6)

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) By audition only. Graduate-level counterpart of Mus 428; additional requirements.

531 Concert Choir 1 (0-4) By audition only. Graduate-level counterpart of Mus 431; additional requirements.

533 Vocal Ensembles 1 (0-4) By audition only. Graduate-level counterpart of Mus 433; additional requirements.

534 Symphony Orchestra 1 (0-4) By audition only. Graduate-level counterpart of Mus 434; additional requirements.

535 Chamber Ensembles 1 (0-4) By audition only. Graduate-level counterpart of Mus 435; additional requirements.

537 Wind Symphony 1 (0-4) Graduate-level counterpart of Mus 437; additional requirements.

538 Jazz-Lab Band 1 (0-4) By audition only. Graduate-level counterpart of Mus 438; additional requirements.

539 Vocal Jazz Ensemble 1 (0-4) By audition only. Graduate-level counterpart of Mus 439; additional requirements.

540 Jazz Combos 1 (0-4) By audition only. Graduate-level counterpart of Mus 440; additional requirements.

541 Accompanying 1 (0-4) Graduate-level counterpart of Mus 441; additional requirements.

550 Seminar in Analysis 2 May be repeated for credit; cumulative maximum 4 hours. Prereq senior or graduate standing. 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. Prereq senior or graduate standing.

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 Prereq Mus 457 or permission. 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 Prereq senior or graduate standing. Required of all graduate students in music. Basic bibliographic and research techniques; written presentations related to area of emphasis.

561 Seminar in Literature of the 20th Century Music 2 Prereq senior or graduate standing. 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 May be repeated for credit; cumulative maximum 6 hours. Prereq Mus 351 or c//. 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 senior or graduate standing. Various historic periods and composers.

575 Advanced Conducting 2 or 3 May be repeated for credit. By audition only. Rehearsing orchestras, bands, and choruses. Public performance may be required.
Our programs reflect and integrate the breadth of disciplines and professions comprising the Natural Resource Sciences. Forestry and Wildlife Ecology are further education our graduates are involved in biophysical and social sciences. Our programs also demonstrate departmental dedication to positive working/learning environments that reflect and foster valuing, understanding and respect of human diversity in the broadest sense.

We expect our graduates will (1) have the educational background to recognize and appreciate the broad economic, societal and ecological issues and the implications of proposed actions; (2) have the professional education that enables them to recognize problems, develop and evaluate alternative actions; (3) have the ability in unfamiliar situations to recognize problems, formulate and evaluate alternatives using established scientific philosophy/methodology; (4) recognize the need for continued personal and professional development; (5) be able to communicate with all to a variety of audiences; (6) 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, and 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 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, with further education, graduates may be involved in environmental education in grade schools and high schools, in the legal profession, and in natural resource law enforcement.

The structure of the undergraduate curriculum is such that it is very feasible (with some additional time) to pursue either dual natural resource majors or a major in one field and minor in another natural resource field. The department offers disciplinary minors in forest and wildlife ecology available to all students, plus a general natural resource minor available to non-major students. Chapter students 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 Colockum multiple-use area provide students with access to the facilities and technologies 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 ecology, plant identification and ecology, wildlife ecology/management, and natural resource management. In addition, each major has a core of courses designed to meet the requirements of the discipline and/or professional area. Each major also includes options which enable students to further specialize their education.

All courses that are department requirements must be taken for a letter grade, including those identified as their respective options. If courses are taken that are above those required, they may be taken pass/fail as an exception with approval by the department chair.

**Forestry Major**

The Forestry Major is designed to provide students with the educational basis for successfully pursuing a professional career in forestry. This program is fully accredited by the Society of American Foresters. Each forestry student, in addition to completing the university GER's, 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 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 courses and the natural resource common core, students complete a major core composed of a limited number of courses in the areas of soil science, conservation biology, ecology and social sciences. Based upon area of primary interest and in addition to the major core, each student also will complete an option composed of approved elective courses. Options are designed to provide specialization in specific areas of natural resource sciences, such as natural resource policy/social science, wetland/aquatic resources, and directed studies which provides students working with their advisors to select courses that focus upon 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/botah 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 gap 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 historic 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 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), 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 either/both advanced coursework or graduate research. Graduate curricular requirements are flexible; hence, students with preceding education in both natural resource 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 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 - DIRECTED STUDIES OPTION

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

Biol 106 [B] or 107 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Econs 101 [S] (GER) 3
GenEd 111 [A] (GER) 3
Intercultural Studies [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 312 3
NATRS 314 4
NATRS 330 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 6
NATRS 410 or 321 (both required) 3
Stat 212 4

Second Term

Arts & Humanities [H,G] (GER) 3
Directed Studies Option Course 3
NATRS 450 [M] 3
NATRS 460 3
Restricted Math Elective 3

Fourth Year

First Term

Directed Studies Option course 3
NATRS 305 3
NATRS 321 or 410 (both required) 3
Soils 201 3
FORESTRY - FOREST MANAGEMENT OPTION (120 HOURS)

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
- Biol 106 [B] or 107 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- EconS 101 [S] (GER) 3
- GenEd 111 [A] (GER) 3
- Intercultural Studies [I,G,K] (GER) 3

Second Year

First Term
- Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER) 4
- NATRS 204 2
- NATRS 300 4
- NATRS 301 3

Second Term
- NATRS 302 3
- NATRS 312 [S,D] 3
- NATRS 314 4
- NATRS 330 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
- NATRS 410 or 321 (both required) 3
- NATRS 430 or 450 [M] (both required) 3
- SoilS 201 3
- Stat 212 [N] (GER) 4

Second Term
- Arts & Humanities [H,G] (GER) 3
- NATRS 331 or 348 & 349 (at least 2 required) 2
- NATRS 460 3
- Restricted Math Elective1 3 or 4
- Elective 3

Fourth Year

First Term
- Biol 106 [B] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 107 4
- NATRS 100 1

Second Term
- Biol 107 [B] or 120 [B] (GER) 4
- Chem 101 or 105 [P] (GER) 4
- EconS 101 [W], H D 205 [C], or ComSt 102 [C] (GER) 3
- GenEd 111 [A] (GER) 3

Second Year

First Term
- Arts & Humanities [H,G] (GER) 3
- EconS 101 [S] (GER) 3
- NATRS 204 2
- NATRS 300 3
- Elective 3

Second Term
- Arts & Humanities [H,G] or Social Sciences [S,K] 3
- Intercultural Studies [I,G,K] (GER) 3
- NATRS 312 2
- Stat 212 [N] (GER) 4
- NRS Option courses and Approved electives1 3
- Complete Writing Portfolio

Third Year

First Term
- NATRS 280 4
- NATRS 301 3
- SoilS 201 3
- NRS Option courses and Approved electives1 3

Second Term
- NATRS 302 3
- NATRS 330 3
- NATRS 438 3
- NRS Option courses and Approved electives1 6

WILDLIFE ECOLOGY - DIRECTED STUDIES OPTION (120 HOURS)

This directed studies option allows students to select approved electives in the areas of habitat ecology, aquatic ecology, animal ecology and conservation biology.

First Year

First Term
- Biol 106 [B] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 107 4
- NATRS 100 1

Second Term
- Biol 107 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- EconS 101 [S] (GER) 3
- GenEd 111 [A] (GER) 3

Second Year

First Term
- Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER) 4
- NATRS 204 2
- NATRS 300 3
- Elective 3

Second Term
- Animal Systematics or Option Courses1 3
- Chem 102 [P] or 106 [P] (GER) 4
- NATRS 302 3
- NATRS 312 2
- Restricted Math Elective2 4
- Complete Writing Portfolio

Third Year

First Term
- Animal Systematics or Option Courses1 6
- Arts & Humanities [H,G] (GER) 3
- Stat 412 3
- Elective 1

1 Restricted math electives include Math 140, 171, 202, Stat 401, 412, 422.

2 One from: Ag Ec 409; Math 140, 171, 202, Stat 212, 401, 412, 422.
Second Term
Animal Systematics or Option Courses¹ 4
Arts & Humanities [H,L,G] or Social Sciences [S,K] (GER) 3
Intercultural Studies [I,L,K] (GER) 3
NATRS 330 3
NATRS 431 3

Fourth Year
First Term
Animal Systematics or Option Courses¹ 6
NATRS 435 4
NATRS 450 [M] 3
Tier III Course [T] (GER) 3

Second Term
Animal Systematics or Option courses³ 3
NATRS 436 [M] 4
NATRS 438 [M] 3
NATRS 441 4
NATRS 470 2

¹ Students in consultation with their advisors select 11-14 hours of course work for the option requirement. To facilitate selection the department/advisors have developed course lists for the most widely chosen areas of emphasis which may include minors.
In addition to the option courses each student is required to choose two animal systematics courses from: Biol 412, 423, 428, 432, or Entom 343.
² Restricted Math electives include: Math 140, 171, 202, and Stat 212. Math 140 is the preferred elective.
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WILDLIFE ECOLOGY - PRE-VETERINARY OPTION (121 HOURS)

First Year
First Term
Biol 106 [B] (GER) 4
Chem 105 [P] or 115 [P] (GER) 4
Engl 101 [W] (GER) 3
Math 107 4
NATRS 100 1

Second Term
Arts & Humanities [H,L,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
Chem 345 4
Ecosys 101 [S] (GER) 3
GenEd 111 [A] (GER) 3
NATRS 280 3
Restricted Math Elective¹ 4

Second Term
Intercultural Studies [I,L,K] (GER) 3
MBioS 303 4
NATRS 312 2
NATRS 330 3
Stat 412 3
Complete Writing Portfolio

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 and 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, 419, 450, 460, 470; others upon departmental approval.

Rangeland Ecology and Management
Minimum of 20-23 credit hours. Required courses: NATRS 435, 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 I 1 Prereq instructor approval. 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, 140, 171, 202 or equivalent, or instructor’s permission. Introduction to basic concepts, field techniques and the use of spreadsheet programs 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.
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.
314 (313/418) Forest Measurements and Yield Prediction 4 (3-3) Prereq NATRS 204, Stat 212 or Stat 412. Introduction to techniques for measuring and quantifying tree characteristics, describing site productivity, stand structure and depicting tree and stand development.

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) Prereq Biol 107. Same as Pl 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.

368 Introduction to ArcGIS 3 (1-6) Prereq one course in biology, geology, or soils. Same as SoilS 368.

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.


416 Fisheries Management 4 (3-3) Prereq UI Fish 314, 411; Stat 251. 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).

417 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

419 Topics in Natural Resource Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Topical issues in natural resource sciences.

421 Fish Health Management 4 (3-3) 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 3 (2-3) 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 CJS 435. Credit not granted for both NATRS 428 and 520.

430 Introduction to Wildland Fire 3 Prereq NATRS 301. 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).

435 Wildlife Ecology 4 (3-3) Prereq Biol 372 or NATRS 300; Stat 212 or 412. The ecology of wildlife species and the contributing biological processes. Overnight field trip required. Credit not granted for both NATRS 435 and 535.


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.

441 Population Ecology and Conservation 4 (3-3) Prereq Biol 372 or NATRS 300; Stat 212 or 412. Ecology, conservation, management of vertebrate populations, especially threatened and endangered species; designed for wildlife and conservation biology majors.


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.

454 [M] 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 4 (2-6) Prereq Biol 120, Geol 101 or Soils 201. Same as SoilS 468.

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) Prereq Biol 120, Geol 101 or Soils 201. Same as SoilS 468.

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 May be repeated for credit; cumulative maximum 6 hours. Prereq senior in natural resource sciences. May be repeated for credit; cumulative maximum 6 hours.

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.

519 Advanced Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

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.
254 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).


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) Prereq Biol 372 or NATRS 300; Stat 212 or 412. Graduate-level counterpart of NATRS 435; additional requirements. Credit not granted for both NATRS 435 and 535.

536 Advanced Wildlife Management 4 (3-3) Prereq NATRS 435. Graduate-level counterpart of NATRS 436; additional requirements. Credit not granted for both NATRS 436 and 536.

538 Natural Resource Policy and Administration 3 (2-2) Graduate-level counterpart of NATRS 438; additional requirements. Credit not granted for both NATRS 438 and 538.

541 Population Ecology and Conservation 4 (3-3) Prereq Biol 372 or NATRS 300; Stat 212 or 412. 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.

550 Conservation Biology 3 Prereq by interview only. Graduate-level counterpart of NATRS 450; additional requirements. Credit not granted for both NATRS 450 and 550.

551 Rangeland Vegetation Ecology 3 Prereq two ecology courses. Ecological concepts of dynamics and distribution of plant communities; secondary succession processes, soil-vegetation relationships and development of vegetation classification schemes. Cooperative course taught by UI (Rnge 551), open to WSU students.

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 2 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 Prereq NATRS 204, completion of department requirement in biology, chemistry, and physical science, mathematics and statistics; or by interview. Graduate-level counterpart of NATRS 460; additional requirements. Credit not granted for both NATRS 460 and 560.

575 Sensing and Geospatial Analysis 3 (1-4) Prereq SoilS 374; 476 or equivalent. 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/RRT 503).

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 May be repeated for credit; cumulative maximum 7 hours. Prereq senior standing. Ethical systems applied to natural resources; issues of professionalism and ethics in natural resource management. Cooperative course taught by WSU, open to UI students (RRT 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.

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Program in Naval Science

www.navy.uidaho.edu

Navy Building, University of Idaho
(208) 885-6333

Professor of Naval Science, Capt. Ryder, CDR Risky, Capt. Culp, LT Stofferahn.

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 freshman year; however, selected students may enter up to 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 one allott 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 Intercollegiate Center for Nursing Education (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**

**Minor in Naval Science**

N S 101, 102, 201, 202; four to six courses from the following: N S 301, 302, 311, 401, 402, 412.

**Description of Courses**

**Naval Science Courses**

N S

100 Drill Lab 1 (0-2) No credit. Required of all Navy-Marine Corps Officer Education Program students. Two hour lab per week. Cooperative course taught by UI (NS 100), open to WSU students. S, F grading.

101 Introduction to Naval Science 2 Roles of major elements of naval service; design and structure of ships. Cooperative course taught by UI (NS 101), open to WSU students.

102 Ships Systems I 3 Introduction to damage control and propulsion systems of naval vessels; 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 N S 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 N S 101, 202. Evolution of war through tactics; strategy from Sun Tzu to J. F. 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 N S 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 N S 311. Amphibious doctrine from Gallipoli to Mayques. Cooperative course taught by UI (NS 412), open to WSU students.

420 Basic Leadership 1 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.

421 Intermediate Leadership 2 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.

422 Advanced Leadership 3 By interview only. Practical application of leadership and management techniques through the executive and commanding 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. Cooperative course taught by UI (NS 499), open to WSU students. S, F grading.

**Program in Neuroscience**


Wagner 205

509-335-0986

Professor, Chair, and Director of MS/PhD in Neuroscience:

B. K. Slinker; Professor and Associate Chair, S. Simasko;

Assistant Director, S. Brabb; Academic Coordinator, P. Colbert;


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 is an option within the neuroscience major and 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 studying 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.

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 academic coordinator.

7-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 College 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 that fulfill the pre-veterinary and major specific 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/preliminary exam (before the 5th semester of study).

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 email grad_neuro@vetmed.wsu.edu. The application deadline for Fall admission is December 31.

Schedules of Studies

Students must complete 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) (126 HOURS)

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.

First Year

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NEUROSCIENCE - COMPUTATIONAL (HARDWARE EMPHASIS) (128 HOURS)

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.

First Year

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Third Year

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Fourth Year

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NEUROSCIENCE - COMPUTATIONAL (SOFTWARE EMPHASIS) (126 HOURS)

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Second Term

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Second Year

First Term

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Second Term

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Third Year

First Term

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<td>Cpt 440</td>
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<tr>
<td>E E 214</td>
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<tr>
<td>MBioS 301</td>
<td>4</td>
</tr>
<tr>
<td>Neuro 403 [M]</td>
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Second Term

<table>
<thead>
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<th>Course</th>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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<tr>
<td>Phys 202</td>
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<td>Psych 490</td>
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Fourth Year

First Term

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<th>Course</th>
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<tr>
<td>Arts and Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Cpt 224</td>
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<tr>
<td>Neuro 495 or 499</td>
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Second Term

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<td>Cpt 322</td>
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<tr>
<td>Neuro 430 [M]</td>
<td>4</td>
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<tr>
<td>Neuro 490</td>
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</table>

1 Satisfied course requirements for entrance into medical or veterinary school
2 Prereq Chem 345, Neuro 301 and MBioS 303

NEUROSCIENCE - GENERAL OPTION (120 HOURS)

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 in Biol 106, Biol 107, Chem 105, Chem 106, Math 140 or 171, and Phys 101, 102.

First Year

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<td>Eng 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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Second Term

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<td>Chem 106 [P] (GER)</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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</table>

1 Part of the 345-346 year-long sequence. Recommended for medical, dental, or optometry school.
2 Math 171, 202, 206 or 210 can substitute.
3 Or statistics course approved by advisor.

NEUROSCIENCE - PRE-MEDICAL AND PRE-DENTAL OPTION (120 HOURS)

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 in Biol 106, Biol 107, Chem 105, Chem 106, Math 140 or 171, and Phys 101, 102.

First Year

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>Biol 106 [B] (GER)</td>
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Second Term

<table>
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<td>Biol 107 [B] (GER)</td>
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<td>Chem 106 [P] (GER)</td>
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Third Year

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<th>Course</th>
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<tbody>
<tr>
<td>Biol 315</td>
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<tr>
<td>Biol 438, Psych 384, or 390</td>
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<tr>
<td>MBioS 301</td>
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<td>MBioS 303</td>
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Second Term

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<tr>
<td>Chem 346/3481</td>
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<tr>
<td>Neuro 404</td>
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<tr>
<td>Neuro or other Electives</td>
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MCAT in April
Fourth Year

First Term Hours
Neuro 403 [M] 3
Neuro 495 or 499 2
Neuro or other Electives 4
Psych 311 4
Tier III Course [T] (GER) 3

Second Term Hours
MBioS 305 3
Neuro 430 [M] 4
Neuro 490 1
Psych 312 4

1 Part of the 345-346 year-long sequence. Recommended for medical, dental, or optometry school.

NEUROSCIENCE - PRE-VETERINARY OPTION (120 HOURS)

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 in Biol 106, 107, Chem 105, 106, Math 140 or 171, Phys 101, 102.

First Year

First Term Hours
Biol 106 [B] (GER) 4
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3

Second Term Hours
Biol 107 [B] (GER) 4
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
Psych 105 [S] (GER) 3

Second Year

First Term Hours
Arts & Humanities [H,G] (GER) 3
Communication Proficiency [C,W] (GER) 3
Intercultural Studies [I,G,K] (GER) 3
Neuro 301 or 302 3
Phys 101 [P] (GER) 4

Second Term Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Chem 345 4
Math 140 4
Phys 102 [P] (GER) 4
Complete Writing Portfolio

Third Year

First Term Hours
MBioS 301 4
MBioS 303 4
Neuro or other Electives 2
Psych 311 4

Second Term Hours
Biol 438 [M] (recommended neuro elective) 3
Neuro 404 3
Neuro 495/499 or other Electives 6
V An 308 (recommended neuro elective) 4
Take GRE

Fourth Year

First Term Hours
Neuro 403 [M] 3
Neuro 495 or 499 2
Neuro or other Electives 7
Tier III Course [T] (GER) 3
Apply to Veterinary School

Second Term Hours
Neuro 430 [M] 4
Neuro 490 1
Neuro or other Electives 11

Minors

Minor In Neuroscience

Students may apply for a minor in neuroscience once they have completed 60 semester credit hours and have a 2.0 GPA. However, they may take minor coursework at any time as long as they meet the prerequisites. Minor certification forms are available in the Neuroscience Office, Wegner 205, and the Student Advising and Learning Center, Lighty 260.

A minor in neuroscience requires 16 credits in Neuroscience, with at least 13 at or above the 300-level. Courses needed to satisfy the minor must include Neuro 301; three credits selected from Psych 384, Psych 390, or Biol 438; at least three credits of Neuro 495 or Neuro 499; and at least six credits selected from the following: Neuro 403, Neuro 404, and Neuro 430. Up to five credits of Neuro 495 or 499 may be included. Upon the approval of the student’s advisor, a student with a minor in neuroscience may include 500-level courses in the minor program, provided the student meets the graduate study requirements and, prior to registration, obtains the consent of the faculty member(s) teaching the course. Students must maintain a minimum 2.0 GPA to remain certified as a neuroscience minor.

Description of Courses

Neuroscience Courses

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 Rec Chem 101 or higher and Biol 107 or c//. Structure and function of the nervous system from single neurons to behavior. Credit not granted for both Neuro 301 and 302.

302 Exploring the Brain - Honors 3 Prereq Chem 106, Biol 107 and Phys 101 with a grade of B or higher. Basic concepts, analysis and discussion of the experimental foundations for understanding nervous system function. Credit not granted for both Neuro 301 and 302.

403 [M] Cellular Neurobiology 3 Prereq MBioS 303 or Neuro 301. 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.

406 Neuroscience Research Techniques 3 (2-2) Prereq Neuro 301, or by interview only. Historical development, theory and technical bases for contemporary laboratory methods in the neurosciences.

409 Affective Neuroscience 3 Prereq A & S 440, Biol 353, Neuro 301, or Psych 372. Brain mechanisms of human and animal emotions. Credit not granted for both Neuro 409 and 509.

430 [M] Principles of Neurophysiology 4 (3-3) Prereq Biol 107; Neuro 301; Phys 102, 202 or 206; or by interview; Rec MBioS 303. Advanced exploration of the principles underlying cellular, sensory, motor and integrative functions of the nervous system.

461 Neurobiology 3 Prereq Phys 101; Chem 345 recommended. Chem 240 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.

490 Senior Project 1 Prereq senior standing; certified neuroscience major; may be taken c// with Neuro 495 or 499. Research project poster or oral presentation. S, F grading.

495 Directed Research V 1-3 May be repeated for credit. Prereq certified Neuro major or minor. Introduction to neuroscience research literature.

499 Special Problems V 1-3 May be repeated for credit. Prereq certified neuroscience major or minor. Introduction to neuroscience laboratory research. S, F grading.

505 Principles and Methods of Toxicology 3 Prereq MBioS 513 or c//. 300-level organ/mammalian physiology or permission of instructor. Same as P/T 505.

506 Principles of Pharmacology 3 Prereq MBioS 513 or c//. Same as P/T 506.

507 Principles of Therapeutics 3 Prereq 300-level organ/mammalian physiology; P/T 506. Same as P/T 507.

509 Affective Neuroscience 3 Prereq graduate standing. Graduate-level counterpart of Neuro 409; additional requirements. Credit not granted for both Neuro 409 and 509.

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) Prereq V M 510P. Same as V M 521P.

526 Domestic and Exotic Animal Behavior 2 (1-3) Prereq by interview only. Same as V M 526P. S, M, F grading.

529 Integrative Neuroscience 3 Prereq graduate standing; 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 (Zool 529).

531 Neuroscience Laboratory Rotation 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Prereq graduate standing. Fourteen-week rotation through each of two research laboratories; learning procedures and techniques in neuroscience. S, F grading.

540 Special Topics in Integrative Neuroscience 3 Prereq graduate standing. Concepts and controversies in neuroscience involving integrative properties of cell systems. May be repeated for credit; cumulative maximum 6 hours.

541 Special Topics in Cellular and Molecular Neuroscience 3 Prereq graduate standing. Concepts and controversies in neuroscience that involve nerve cell function and regulation. May be repeated; cumulative maximum 6 hours.

542 Special Topics in Disciplinary Neuroscience 3 Prereq graduate standing. Concepts and controversies in neuroscience that revolve around traditional approaches to nervous system study. May be repeated; cumulative maximum 6 hours.

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 Prereq Psych 574. Same as Psych 577.

579 Behavioral Neuroscience 3 Prereq Psych 574. Same as Psych 579.

584 Sensory Bases of Behavior 3 Prereq Psych 384. Same as Psych 584.

590 Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Presented by advanced graduate students and faculty (both in VCAP and around WSU) on their research areas. S, F grading.

592 Research Writing and Seminar 3 May be repeated for credit; cumulative maximum 6 hours. Written and oral communication of scientific information; formal instruction while preparing research proposals and departmental seminar.

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.

Intercolligate College of Nursing

www.nursing.wsu.edu

ICN - Spokane

509-324-7337


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 Intercolligate College of Nursing in Spokane, Tri-Cities and Yakima. They provide the 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 practice decisions using evolving knowledge and research from nursing science, the biological and behavioral sciences, and the 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 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 nursing, psychiatric/mental health nurse practitioner, and family nurse practitioner specializations are available.

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: http://nursing.wsu.edu.

We expect that our graduating students:
* Collaborate in the conduct of research with faculty and 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 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.

**NURSING** *(127 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.

Part-time schedule of study is available; see advisor.

**First Year**

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<tr>
<th>Term</th>
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<tbody>
<tr>
<td>First Term</td>
<td>Nurs 308, 311, 315, 316, 317, 328</td>
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<td>Eng 101 [W] (GER)</td>
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<td>Psych 105 [S] (GER)</td>
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**Second Year**

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<td>Biol 251</td>
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<td>FSHN 233</td>
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**Third Year**

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**Fourth Year**

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<td>Nurs 417</td>
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**NURSING - REGISTERED NURSES OPTION**


**Description of Courses**

**Nursing Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurs 275 Special Topics: Study Abroad</td>
<td>V 1-15 May</td>
</tr>
</tbody>
</table>

**Professional Development I: Research and Informatics**

2 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.

**Professional Development II: Ethical Reasoning and Decision Making**

Processes in Nursing 2 Prereq Nurs 308; c/j Nurs 315. Continuation of professional development series; moral/ethical reasoning models, decision processes, and philosophical basis of nursing as a discipline.

**Pathophysiology and Pharmacology in Nursing**

4 Prereq admission to nursing. Etiology, pathogenesis, clinical manifestations of common human dysfunction; nursing implications for prevention and therapeutic approaches including pharmacologic and non-pharmacologic therapies.
315 Nursing Practice: Health and Illness 4 (0-12) Prereq Nurs 308, 311, 315, 316, 317, or c//. Introduction to nursing practice and health assessment: professional values, core competencies, core knowledge and role development. S, F grading.

316 Introduction to Nursing Practice in Health and Illness: Theory 2 Prereq Nurs 308, 311, 317 or c//. Introduction to nursing concepts and holistic assessment including core professional values, knowledge and competencies for nursing practice.

317 Health Assessment 3 (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.

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, 315, 316, 317 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, 315, 316, 317; 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.

328 Introduction 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.

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; Nurs 414; Nurs 415; Nurs 416; Nurs 417. 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, 414. Synthesis 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 disruptions. 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 Nursing process with individuals and families experiencing psychiatric/mental health disruptions.

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 dysrhythmia 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.

497 Special Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours.

498 Special Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours.

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

503 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.

504 Methods of Nursing Research 4 Prereq Nurs 503 or c//. Research process as foundational to both conduct of scientific inquiry and utilization of findings.

507 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.

519 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.

520 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.

521 Teaching, Learning and Evaluation in Nursing V 3 (3-0) to 5 (3-6) Prereq graduate standing in Nurs or by permission. Exploration of concepts related to teaching-learning, assessment of diverse learning needs, instructional strategies and design, evaluation of performance outcomes.

523 Nursing Education: Past, Present, and Future V 3 (3-0) to 5 (3-6) Prereq graduate standing in nursing or by permission. Exploration of curriculum history, development, future predictions; program evaluation, instructional resources, leadership, and policy development in academic and service settings.

537 Role Analysis: Advanced Practice 2 (1-3) Prereq admission to NP program. Emphasis on role analysis including interdisciplinary relationships, consultative skills, responsibility, activities, and functions of the advanced practice nurse.

540 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.

541 Psychiatric/Mental Health Nursing: Individuals 4 (3-3) Prereq graduate standing in nursing; Nurs 562; 581 or c//. Theories of psychopathology and appropriate nursing interventions with individuals across the age continuum.

542 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.

543 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.

545 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.

546 Practicum in Psychiatric/Mental Health Nursing 4 (1-9) or 5 (1-12) Prereq Nurs 541, 543, 562, 581; Pharm 525 or c//. Individualized clinical experience/seminar designed to provide advanced competency, accountability, leadership in psychiatric/mental health nursing.

548 Psychiatric Nurse Practitioner Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq Nurs 550, 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.

550 International, Interdisciplinary, and Transcultural Health Care 3 Prereq graduate standing in nursing or by permission. Diverse health beliefs and practices or clients and members of the interdisciplinary health care team.

552 Family Nursing in the Community V 2-4 Theoretical approaches to the analysis of normal and at-risk families; application of family assessment and intervention models when planning care.

554 Epidemiological Approaches to Community Health 3 Prereq graduate standing in Nurs. Epidemiologic application to health; implications for health promotion, disease prevention; focus: knowledge and skills required to obtain and use databases.

555 Community-Based/Population-Focused Nursing Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq Nurs 550, 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.

556 Community-Based/Population-Focused Role Practicum V 3 (2-3) to 6 (2-12) Prereq permission of instructor. Cumulating analysis, development, and enactment of advanced practice roles in teaching, practice, or administration of community-based/population-focused nursing.

557 At-Risk Populations in the First Decade of Life 3 Prereq admission to NP program. Analysis of biopsychosocial health risks of the first decade of life using models of risk and resiliency in advanced nursing practice.

558 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.

559 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.

560 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.

561 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.
562 Advanced Health Assessment and Differential Diagnoses 4 (3-3) Prereq graduate standing in nursing. Advanced holistic health assessment/differential diagnosis; analysis of data from biological, sociological, psychological, cultural, and spiritual dimensions.

563 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 V2 (2-0) to 3 (2-3) Prereq graduate standing in nursing; CBPF students must enroll for 3 credits. Application of core public health functions in community analysis, program development and program evaluation.

567 Primary Care: Adults and Elders 4 (2-9) Prereq admission to FNP program; Nurs 562; Nurs 563; Nurs 581. Assessment, differential diagnosis, therapeutic intervention with adults; developmental changes; opportunities to provide diagnostic, maintenance, and follow-up care.

568 Primary Care: Infants, Children and Adolescents 4 (1-9) Prereq admission to FNP program; Nurs 562; Nurs 563; Nurs 581. Assessment, differential diagnosis, and therapeutic intervention with infants, children, and adolescents in rural and urban settings.

569 Primary Care: Family 4 (1-9) Prereq admission to FNP program; Nurs 562; Nurs 563; Nurs 581. Assessment, differential diagnosis, therapeutic intervention with individuals in childbirth, childrearing, and multigenerational families.

570 Clinical Decision Making 1 (0-3) Prereq Nurs 581, 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.

575 Diagnostic Testing and Interpretation 3 (2-3) Prereq admission to FNP program. Analysis of diagnostic findings across the age continuum for clinical decision making; selected diagnostic and treatment skills for advanced practice.

577 Health Care Ethics 2 or 3 Graduate-level counterpart of Nurs 477; additional requirements. Credit not granted for both Nurs 477 and 577.

578 Plateau Tribes: Culture and Health 3 (2-3) Prereq junior/senior in health care of human services/health professionals. Graduate-level counterpart of Nurs 478; additional requirements. Credit not granted for both 478 and 578.

579 Vulnerable Populations: The Homeless 3 Prereq graduate standing in nursing or permission. Analysis of factors placing persons at risk for homelessness; proposal of policy changes based on research and experiential learning.

581 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.

583 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.

595 Internship V 1-10 May be repeated for credit; cumulative maximum 10 hours. Prereq admission to FNP program; Nurs 562; Nurs 563; Nurs 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.

596 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.

597 Advanced Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing in nursing.

598 Advanced Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing in nursing.

599 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.

College of Pharmacy

www.pharmacy.wsu.edu
Wagner 105
509-335-5901

COLLEGE OF PHARMACY
Dean and Professor, J. P. Kehrer; Associate Dean and Clinical Professor, C. A. Elstad; Associate Dean and Professor, D. E. Baker; Assistant Dean and Associate Professor, M. W. Garrison; Interim Assistant Dean and Professor, K. E. Meier.

DEPARTMENT OF PHARMACEUTICAL SCIENCES
Professor and Acting Chair, J. P. Kehrer; Professors, G. G. Meadows, K. E. Meier, R. M. Quock; Associate Professors, M. E. Black, S. S. Daood, N. M. Davies, S. J. Lindsey; Assistant Professors, A. Hatefi, D. Koly; Clinical Associate Professors, S. L. Chambers, C. S. Elstad.

DEPARTMENT OF PHARMACOTHERAPY

HEALTH POLICY ADMINISTRATION
Professor and Chair, W. C. Schmidt; Professors, J. S. Coyne, D. A. Scar, T. L. Skaer; Associate Professors, M. M. Ahem, F. Akincai, J. Kennedy.

The College of Pharmacy offers courses of study leading to the degrees of Doctor of Pharmacy (PharmD), Master of Science in Health Policy and Administration, Master of Science in Pharmacology and Toxicology, and Doctor of Philosophy in Pharmacology and Toxicology. The college also offers pharmacy residency fellowship programs in Spokane and Yakima. The Health Policy and Administration program is described under its own catalog section. Graduate programs in Pharmacology and Toxicology are described under sub-headings of this catalog section.

The PharmD schedule of studies consists of four professional years. The first two years are taught at Pullman. The third professional year of the PharmD curriculum is delivered on the Washington State University Spokane Campus. The fourth professional year of the PharmD curriculum consists of experiential training, most of which is conducted away from the Pullman campus of Washington State University. The majority of students will complete their fourth professional year in Spokane or Yakima. 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 http://www.pharmacy.wsu.edu, or
contact the PharmD Office of Student Services at 509-335-1402.

The PharmD curriculum is currently undergoing a complete revision, with the new program intended for implementation in the 2008-09 academic year. This program will be at a doctoral level, with increased emphasis on clinical and management skills. We expect our Doctor of Pharmacy graduates to successfully achieve the following competency-based outcomes:

Outcome 1 – Knowledge Acquisition and Critical Thought: The graduate shall acquire, analyze, synthesize, and apply knowledge in biomedical, pharmaceutical, and clinical sciences to facilitate positive therapeutic outcomes and prevent drug therapy related misadventures.

Outcome 2 – Communication: The graduate shall acquire a repertoire of verbal, non-verbal, and written communication skills, demonstrate professional level competency in applying these skills in a variety of cultural and practice contexts, and select appropriate methods for use in all facets of pharmacy practice.

Outcome 3 – Professionalism: The graduate shall practice ethically within the boundaries of the laws of pharmacy, uphold values and integrity embodied in the practice of pharmacy, and provide leadership/influence for the improvement of the profession.

Outcome 4 – Knowledge of the Profession, Professional Development, and Public Service: The graduate shall thoroughly understand the profession, assume responsibility for continuous professional development, and provide leadership/influence for the improvement of the health and wellness of individuals and society.

Outcome 5 – Medication Therapy Management: The graduate shall integrate and apply requisite biomedical, pharmaceutical, and clinical sciences, and communication skills, to evaluate, design, implement, and monitor optimal patient-centered pharmacotherapy plans, educate patients, identify and resolve drug related problems, and assure patient safety.

Outcome 6 – Management Systems, Processes and Operations: The graduate shall understand multiple factors/perspectives in US healthcare systems delivery; medication distribution, control, and quality management systems; and pharmacy management systems, policies, and operations to optimize patient/population outcomes.

The College of Pharmacy at Washington State University is accredited by the Accreditation Council for Pharmacy Education.

**Doctor of Pharmacy Program Requirements**

Pre-pharmacy training, which can be taken at any institution having courses approved as meeting the college prerequisites, requires approximately three years. A baccalaureate degree is not required for admission, but is encouraged. The four years of the PharmD curriculum are professional study directed by the College of Pharmacy.

Applicants for admission to the College of Pharmacy must present acceptable credits from an accredited college or university. Courses designed to fit these requirements are offered by Washington State University, and are listed below. Please refer to the College of Pharmacy web site for a guide to acceptable courses offered by other colleges and universities. Further information regarding the acceptability of course credits should be obtained from the Student Services Office in the College of Pharmacy.

**WSU Pre-Pharmacy Course List:**

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<td>Diversity [SD, HD, S(3), H(3)]</td>
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<td>Intercultural Studies [I,G,K]</td>
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<th>College of Pharmacy Specific GERs</th>
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<th>Additional College of Pharmacy Requirements</th>
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<td>Calculus – Math 140, 171, or 202 [N]</td>
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<tr>
<td>Statistics</td>
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<td>Introductory Biology – Biol 106 &amp; 107 [B]</td>
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<td>Principles of Chemistry – Chem 105 &amp; 106 [P]</td>
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<td>Organic Chemistry – Chem 345 &amp; 346</td>
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<td>Microbiology – MBioS 305 &amp; 306</td>
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<td>Human Anatomy with lab – Biol 315</td>
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<td>Mammalian Physiology – Biol 353</td>
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<td>Biochemistry – MBioS 303</td>
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<td>Immunology – MBioS 440</td>
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<tr>
<td>Gen / Mol Biol – Biol 301, 408, or MBioS 404</td>
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Because the number of applicants for admission to the College of Pharmacy greatly exceeds the number that can be admitted, no assurance can be given that all applicants who successfully complete the prerequisites will be admitted. Students taking pre-pharmacy course work may declare a major in any subject, but are encouraged to major in the biological or chemical sciences.

A major in pharmacy is not declared until admission to the College of Pharmacy has been granted.

**Admission to the PharmD Program**

A student seeking to enter the PharmD program should follow the instructions provided at the College of Pharmacy web site, http://www.pharmacy.wsu.edu/futurestudents/apply.html. Deadline for submission of both our Doctor of Pharmacy Supplemental Application for Admission and the PharmCAS application is during the first week of January; please check the web site for the exact date. All applications must be submitted online via http://www.pharmcas.org. Applicants will be notified of their acceptance after the second week in March. Unsatisfactory applicants who wish to be considered the next year must present new applications.

**Schedules of Studies**

**Students must complete one humanities, social science, or Tier III course that is also designated as an American Diversity [D] course. Note: Honors students completeHonors requirements in place of GERs.**

**PROFESSIONAL CURRICULUM**

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<th>Year</th>
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The fourth professional year begins in May immediately 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 450 Wellness and Preventive Medicine 3 Principles and techniques of health education and preventive medicine.

PharP 451 Pharmacy Practice 2 Prereq first-year pharmacy student. Introductory foundation to pharmacy practice including discussion, debates and practical application to establish early connections, vision, professionalism and requisite critical thought processes.

PharP 456 Early Practice Experience I 1 (0-3) Prereq PharP 450. Practical experience which introduces knowledge and skills related to patient education, disease management, and medical self-care. For Pharm.D. students only. S, F grading.

PharP 457 Early Practice Experience II 1 (0-3) Prereq PharP 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.

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


PharP 525 P Practical Psychiatric Drug Therapy for Clinicians 3 Prereq Nurs 311 or graduate standing in nursing program. Review of practical psychiatric drug therapy for physicians, pharmacists, mental health professionals, and others working in the mental health field.


PharP 533 P Pharmacotherapy I 5 Prereq PharS 533P, 542P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases.

PharP 534 P Pharmacotherapy II 5 Prereq PharS 533P, 542P. Pharmacotherapy of gastrointestinal disorders, parenteral nutrition, and emergency medications.

PharP 535 P Pharmacotherapy III 5 Prereq PharG 534P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases, including infectious diseases, cancer chemotherapy, renal impairment, and critical care issues.

PharP 536 P Pharmacotherapy IV 5 Prereq PharS 533P, 542P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases, including cardiovascular diseases, endocrine disorders, psychiatric disorders, and neurological disorders.

PharP 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.


PharP 560 P Ambulatory Care Advanced Practice Experience 1 (0-3) to 5 (0-15) Prereq Pharm.D. didactic coursework completed. Advanced practice experience in various health care settings.

PharP 561 P Acute Care Advanced Practice Experience 1 (0-3) to 5 (0-15) Prereq Pharm.D. didactic coursework completed. Advanced practice experience in acute care settings.

PharP 562 P Ambulatory Care Advanced Practice Experience 1 (0-3) to 5 (0-15) Prereq Pharm.D. didactic coursework completed. Advanced practice experience in ambulatory care settings.

PharP 563 P Elective I Advanced Practice Experience 1 (0-3) to 5 (0-15) Prereq Pharm.D. didactic coursework completed. Advanced practice experience in acute or ambulatory patient care settings.

PharP 564 P Elective II Advanced Practice Experience 1 (0-3) to 5 (0-15) Prereq Pharm.D. didactic coursework completed. Advanced practice experience in acute, ambulatory, or non-traditional patient care.


PharP 566 P Community Advanced Practice Experience 1 (0-3) to 5 (0-15) Prereq Pharm.D. didactic coursework completed. Advanced practice experience in a community pharmacy setting.

PharP 567 P Institutional Advanced Practice Experience 1 (0-3) to 5 (0-15) Prereq Pharm.D. didactic coursework completed. Advanced practice experience in an institutional pharmacy setting.

PharP 568 P Extended Degree Advanced Practice Experience 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.

PharP 572 P Pharmaceutical Care Laboratory I 1 (0-3) Prereq PharP 451P or c//. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

PharP 573 P Pharmaceutical Care Laboratory II 1 (0-3) Prereq PharP 572P or c//. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

PharP 574 P Pharmaceutical Care Laboratory III 2 (0-6) Prereq PharP 572P or c//. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

PharP 575 P Pharmaceutical Care Laboratory IV 2 (0-6) Prereq PharP 572P or c//. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

PharP 576 P [M] Pharmaceutical Care Laboratory 2 Prereq PharP 575P. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

PharP 577 P [M] Pharmaceutical Care Laboratory 2 Prereq PharP 575P. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

PharP 578 P [M] Pharmaceutical Care Laboratory 2 Prereq PharP 575P. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

PharP 579 P [M] Pharmaceutical Care Laboratory 2 Prereq PharP 575P. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

PharP 581 P [M] Pharmacy Management 3 Management principles applied to pharmacy practice; health systems; patient care strategies.

PharP 582 P Pharmacy Law 3 Prereq third year standing. Laws relating to the practice of pharmacy.

591 P Medication Error Prevention 2 Prereq upper-division, certified health sciences major. Interdisciplinary responsibilities and approaches to detection and prevention of medication errors; practice in developing risk management plans for specific cases.

592 P Medical Devices for Home Health Care 2 Prereq third professional year pharmacy student. Review of medical devices used by patients for home care or self care and provision of recommendations to patients concerning these devices.

593 P Advanced Topics in Behavioral Health-Mental Health in the Media 1 Prereq PharP 552; PharP 553. Advanced knowledge of behavioral health topics covered in Therapeutics Pharm.D. coursework through discussion and case-based teaching, and opportunities for students to think through diagnosis, treatment, complications, adverse effects, interactions, and monitoring parameters. S, F grading.

594 P Comprehensive Diabetes Management 3 Prereq current Pharm.D students who have completed the first semester of the pharmacy program. Multidisciplinary foundation for future health professionals in the principles of diabetes management, using self-paced, modular and internet-based alternative format for delivery.


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.

Pharmaceutical Science Courses

PharS


437 Pharmaceutics Laboratory 1 (0-3) Prereq PharS 531P or cc//. Formulation and extemporaneous preparation of dosage forms.

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

531 P [M] Pharmaceutics I 3 Prereq Chem 345; Chem 346; Math 140. Physicochemical principles underlying the design of dosage forms; survey of materials and methods used in the manufacture of dosage forms; parenteral drug delivery.

532 P Pharmaceutics II 3 Prereq PharS 531P. The study of the interaction between dosage forms and various biological systems; drug delivery to the gastrointestinal tract, respiratory tract, eye and skin.

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. Pharmaceutical and pharmaceutic properties of medications derived from biotechnology.

540 P Immunology and Immunopharmacology 3 Prereq Biol 352; Chem 346; MBios 303; MBios 305; MBios 306. Basic immunology and review of prevention and treatment of infectious diseases, cancer and immune-mediated pathology; includes theory, principles, and mechanism of action of immunomodulatory agents.

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.

546 P Selective Toxicity 3 Prereq PharS 541P. Structure-activity relationships, mechanisms of action, and pharmacodynamics of drugs that demonstrate selective toxicity against microbes and tumor cells.


Program in Pharmacology and Toxicology

www.pharmacywsu.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 and molecular biosciences.

Students entering the program should have completed undergraduate work in biology, chemistry (including organic chemistry and biochemistry), mathematics (through calculus), an upper division level organ/mammalian physiology course, and an undergraduate statistics course. We also welcome applications from applicants who have a professional degree in pharmacy. Course 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: MBios 513/514, (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, 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, breast cancer, hepatitis); behavioral and neuropharmacology; cancer biology; cardiovascular pharmacology; drug metabolism; endocrinology; immunopharmacology; medicinal chemistry; molecular biology (including gene therapy, epitope tags and site-directed mutagenesis); molecular pharmacology; pharmacokinetics and drug delivery technology; 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; immunocytochemistry; cell culturing and sorting; cell transfections, including siRNA; DNA sequencing; flow cytometry; immunoblotting and immune precipitation; lipid analyses; mitochondrial DNA-PCR; mouse tumorigenesis testing; oligonucleotide and peptide synthesis; Phase I and Phase II in vitro metabolism; phospholipase assays radioligand binding assay; radioligand linkage; 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 electroporator; Cytofluor fluorescence machine; gas and high performance liquid chromatographs (HPLC); fluorescence and UV/visible microscope readers; flow cytometer; densitometer; Molecular Dynamics STORM system (fluorescence and UV imaging); PCR and real-time PCR instrumentation; triple-quadrupole mass spectrometer and HPLC; Li-Cor infrared imaging system; 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, as well as 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, P.O. Box 646534, Pullman, WA 99164-6534 or e-mail: pharmaox@wsu.edu

Description of Courses

**Pharmacology and Toxicology Courses**

**P/T**

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 MBioS 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 MBioS 513 or c//. Mechanisms of drug action and the factors that modify drug responses; drug design and drug 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.

510 Advanced Pharmacokinetics/Toxicokinetics 3 Prereq P/T 506. Kinetics of drug absorption, distribution, elimination, and pharmacologic response. Cooperative course taught by WSU, open to UI students (FST 510).

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).

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 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Same as Entom 556.

557 Herbicides: Toxicology and Mode of Action 1 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Same as Entom 557.

558 Pesticide Topics 1 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Same as Entom 558.

572 Fundamentals of Oncology 3 Prereq MBioS 513. Thorough overview of cancer biology encompassing basic cellular and molecular mechanisms of carcinogenesis and tumor progression, treatment and prevention. Cooperative course taught by WSU, open to UI students (FST 572).

597 Pharmacology and Toxicology Seminar 1 May be repeated for credit; cumulative maximum 12 hour. Cooperative course taught by WSU, open to UI students (FST 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.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

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; Assistant Professor, A. Bunch.

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.

Graduation Requirements: No course with a grade of D+ or less and no course taken pass/fail will be counted toward the major. The overall gpa for courses in the major must be at least a 2.00.

Schedules of Studies

**Students must complete 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 - PRE-LAW OPTION (120 HOURS)**

**First Year**

**First Term**

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<td>Math Proficiency [N] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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**Second Year**

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<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>Biological Sciences [B] (GER)</td>
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<td>Foreign Language, if necessary, or Elective</td>
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<td>Phil Elective</td>
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**Complete Writing Portfolio**

**Third Year**

**First Term**

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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Intercultural Studies [I,G,K] (GER)</td>
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<td>Phil 360, 365, or 370</td>
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<td>Pol S 300</td>
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1. One Phil elective must be [M] if two have not been taken.
PHILOSOPHY - TRADITIONAL OPTION
(120 HOURS)

First Year

First Term

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<td>GenEd 111 [A] (GER)</td>
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Fourth Year

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Second Term

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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. 3 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 201 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 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 in Phil. Pre-Socratics, 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).

406 Philosophy and Race 3 Prereq 3 hours in Phil or CES 201. Examination of race within western philosophy including work of philosophers of color and analysis of the category “race”. Cooperative course taught by WSU, open to UI students (Phil 406).

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 3 hours Phil; 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 theism; guest lectures from professors in the natural sciences.

270
420 Contemporary Continental Philosophy
  3 Prereq 3 hours Phil. Selected movements, figures, and issues in recent continental philosophy. 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 3 hours Phil; 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 in 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 462. Cooperative course taught by WSU, open to UI students (Phil 462).

470 Philosophy of Law
  3 Prereq 3 hours in 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 or Pol S. 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.

495 [M] Senior Seminar
  3 Prereq senior in philosophy or 24 hours in philosophy. Mastery of the philosophical essay; topics may vary.

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

501 Advanced Logic
  3 Prereq Phil 201. 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 may be repeated for credit; cumulative maximum 12 hours. 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).

510 Seminar in the History of Philosophy
  3 Prereq may be repeated for credit; cumulative maximum 6 hours. 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).

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 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.

600 Special Projects or Independent Study
  Variable credit S, F grading.

700 Master’s Research, Thesis, and/or Examination
  Variable credit; S, F grading.

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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.

Credit:

PEACT course credit is granted on the basis of 1 credit for two one-hour classes per week. PEACT courses may not be repeated for credit, with the exception of PEACT 200 Special Topics (1 credit hour, 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
  A, S, F grading.

106 Self Defense
  A, S, F grading.

107 Beginning Judo
  A, S, F grading.

108 Karate
  A, S, F grading.

112 Weight Training
  S, F grading.

114 Beginning Gym Tumbling
  A, S, F grading.

116 Gymnastics
  A, S, F grading.

119 Aerobic Dance
  S, F grading.
**Physical Science Courses**

**Description of Courses**

**Physical Science Courses**

**Ph S**


430 Methods of Teaching Science 3 (2-3) Prereq admission to secondary teacher prep; 36 hours science. Same as Biol 430.

**Department of Physics and Astronomy**

[www.physics.wsu.edu](http://www.physics.wsu.edu)

Webster 1245

509-335-9532

Professor and Department Chair, S.L. Tomovic; Professors, G.S. Collins, J.T. Dickinson, Y.M. Gupta, M.G. Kuzyk, K.G. Lynn, P.L. Marston, M.D. Miller, L.S. Wang; Associate Professors, D. Blume, S. Bose, S.L. Desheimer, M.D. McCluskey, G. Worthey; Assistant Professors, J. Blakeslee, P. Engels, D. Schurig; Clinical Assistant Professor, R. Gelles; Instructors, M. Allen, P. Blakeslee, N. Cernat.

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 biophysics, 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; cluster 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 SANS, diamond films, molecular interactions with surfaces, reactive etching of surfaces, photoelectric and thermal emission microscopy); 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 (Ph.D.).

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. Differences in these will appear as footnotes. 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, S21, 571, and additional math courses. At least one year of German, Russian, or French is also recommended.

Schedules of Studies
Students must complete 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
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.

The first year requirements are common to all physics degree programs:

First Year
First Term
Chem 105 [P] (GER) or 115 4
Degree program course, if necessary1 3 or 4
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Math 171 [N] (GER) 4
Phys 188 1

Second Term
Chem 106 [P] (GER) or 116 4
Degree program course, if necessary1 3 or 4
GenEd 110 [A] or 111 [A] (GER) 3
Math 172 4
Phys 201 or 205 4 or 5

Second Year
First Term
Arts & Humanities [H,G] (GER) 3

Biological Sciences [B] (GER) 4
Degree program course, if necessary2 3 or 4
Math 220 2
Math 273 2
Phys 202 or 206 4 or 5

Second Term
Cpt S 121 4
Degree program course, if necessary2 3 or 4
Math 315 3
Math 303 3
Math 330 3
Social Sciences [S, K] (GER) 3

Complete Writing Portfolio

1 Environmental: ES/RP 101; Physics Education: Psych 105 [S] (GER) ComSt 102 [C] (GER); Computational Physics: Cpt S 121, 122.

THIRD AND FOURTH YEAR REQUIREMENTS
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.
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdisciplinary [I,G,K] (GER); Social Sciences [S,K] (GER); Engl 402 [WM]; Tier III Humanities or Social Sciences Course (GER); MBioS 303, 304, 413, 465, 499 (One hour of 499 in an appropriate department or physics required. Additional hours may be taken for credit.); Math Elective (6 hours) selected from Math 340, 360, 375, 401, 402, 415, 420, 440, 441, 443, 448; Chem 345, 346, 347; Phys 304, 320, 341, 342, 410, 415 [M], 450, 461, 463, 490 [M].

- Continuum Physics and Acoustics Option
This program yields a Bachelor of Science in Physics degree with a minor in mathematics and possibly in computer science.
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdisciplinary [I,G,K] (GER); Social Sciences [S,K] (GER); Engl 402 [WM]; Tier III Humanities or Social Sciences Course (GER); Math Elective (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, 490 [M].

- Physics and Astronomy Option
This program yields a Bachelor of Science in Physics degree with a minor in mathematics and environmental science.
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdisciplinary [I,G,K] (GER); Social Sciences [S,K] (GER); Engl 402 [WM]; Tier III Humanities or Social Sciences Course (GER); Biol 372; Chem 345; ES/RS 335, 404, 444, 445, 499 (One hour of 499 in an appropriate department or physics required. Additional hours may be taken for credit.); 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].

- Biophysics Option
This program yields a Bachelor of Science in Physics degree with a minor in mathematics and possibly biochemistry.
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdisciplinary [I,G,K] (GER); Social Sciences [S,K] (GER); Engl 402 [WM]; Tier III Humanities or Social Sciences Course (GER); MBioS 303, 304, 413, 465, 499 (One hour of 499 in an appropriate department or physics required. Additional hours may be taken for credit.); Math Elective (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, 461, 463, 490 [M].

- Computational Physics Option
This program yields a Bachelor of Science in Physics degree with a minor in mathematics and possibly in computer science.
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdisciplinary [I,G,K] (GER); Social Sciences [S,K] (GER); Engl 402 [WM]; Tier III Humanities or Social Sciences Course (GER); Math Elective (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, 490 [M].

- Physics and Acoustics Option
This program yields a Bachelor of Science in Physics degree with a minor in mathematics.
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdisciplinary [I,G,K] (GER); Social Sciences [S,K] (GER); Engl 402 [WM]; Tier III Humanities or Social Sciences Course (GER); Math Elective (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, 490 [M].
- Instrumentation Option
This program yields a Bachelor of Science in Physics degree with a minor in mathematics.
Arts & 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); E E 261, 262, 311, 352; Math Electives (6 hours) selected from Math 340, 360, 375, 401, 402, 415, 420, 440, 441, 443, 448; Phys 304, 320, 341, 410, 412, 415 [M], 443, 450, 463, 465, 490, 499.

- Materials Physics Option
This program yields a Bachelor of Science in Physics degree with a minor in mathematics and possibly in material science.
Arts & 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); Chem 331, 333; Math Electives (6 hours) selected from Math 340, 360, 375, 401, 402, 415, 420, 440, 441, 443, 448; MSE 201, 312, 431, 499 (One hour of 499 in an appropriate department or physics required. Additional hours may be taken for credit); MSE Electives (6 hours, 400-level); Phys 304, 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M].

- Mathematical Physics Option
This program yields a Bachelor of Science in Physics degree with a minor in mathematics. Additional coursework, in consultation with the Department of Mathematics, may yield a second major in mathematics.
Arts & 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); Chem 300, 315, 398, 401, 402, 421, 443, 499 (One hour of 499 in an appropriate department or physics required. Additional hours may be taken for credit); Math electives (6 hours) selected from Math 340, 360, 375, 415, 440, 441, 443, 448; Phys 304, 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M].

- Nanotechnology Option
This program yields a Bachelor of Science in Physics degree with a minor in chemistry.
Arts & 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); Chem 331, 332, 333, 345, 346, 347; Math Electives (6 hours) selected from Math 340, 360, 375, 401, 402, 415, 420, 440, 441, 443, 448; MSE 201, 321; Physics 304, 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M].

- Optics and Electronics Option
This program yields a Bachelor of Science in Physics degree with a minor in mathematics and possibly in electrical engineering.
Arts & 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); E E 234, 261, 262, 351, 431, 496, 499 (One hour of 499 in an appropriate department or physics required. Additional hours may be taken for credit); Math Electives (6 hours) selected from Math 340, 360, 375, 401, 402, 415, 420, 440, 441, 443, 448; Phys 304, 320, 341, 410, 412, 415 [M], 443, 450, 463, 490.

- Physics Education Option
This program yields a Bachelor of Science in Physics degree with a minor in mathematics and a primary endorsement to teach mathematics.
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Engl 402 [W,M]; Intercultural [L,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); EdPsy 402; Math 303, 360; Ph S 430; Phys 304, 320, 341, 410, 415 [M], 450, 463, 465, 490 [M]; 499 (Four hours, includes observing Phys 101 and 102. Additional hours may be taken for credit); T & L 302, 303, 317, 328, 400, 404, 415 (16 hours), 446, 478.

Minors

Minor in 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, 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.

Minor in Physics
A physics minor requires Phys 201, 202, 303, and 304 plus any two courses (6 credits) from the following list: Phys 320, 330, 341, 342, 410, 412, 415, 443, 450, 461, 463, 465. This makes a total of 20 credits in Phys of which 12 are upper division. Students from outside the College of Sciences (i.e., College of Engineering) do not have to meet the extra graduation requirements of the College of Sciences.

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.

345 [P] Principles of Astronomy 3 Prereq Phys 102 or 202. Planets, the sun, stars, and galaxies; current topics in astrophysics and planetary research.


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. S, F grading.

538 Topics in Modern Astrophysics 3 May be repeated for credit; cumulative maximum 9 hours.

581 Advanced Topics 3 Same as Phys 581.

595 Seminar in Astronomy/Astronautics 1 Prereq graduate standing. Same as Phys 595. S, F grading.

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; Math 107 with a C or better or placement into Math 140 or higher. 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.
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; Phys 201 with a grade of C or better. 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 - Honors II 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.

Physics and Astronomy

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).

566 Biological Physics 3 Graduate-level counterpart of Phys 466; additional requirements. Credit not granted for both Phys 466 and 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 calculations, and group theory. Cooperative course taught jointly by WSU and UI (Phys 571).

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 May be repeated for credit; cumulative maximum 4 hours. Prereq Math 440, 441. Waves in the continuum; elastic, plastic, and hydrodynamic waves; shock waves. 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.

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.

Department of Plant Pathology

www.plantpath.wsu.edu
Johnson Hall 345
509-335-9541


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 bacteriology, 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 physiology, bacteriology, general plant pathology, entomology, precalculus, organic chemistry, genetics, and report writing or advanced composition.

Schedules of Studies

Students must complete 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)

Students should consult their advisors for appropriate sequencing of courses and in selecting electives consistent with vocational and professional objectives.

First Year

First Term Hours
Biol 106 [B] (GER) 4
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 107 4
Second Term Hours
Biol 107 [B] (GER) 4
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
Math Proficiency [N] (GER) 3
MBioS 101 [B] (GER) 4

Second Year

First Term Hours
Biol 120 [B] (GER) 4
Chem 345 4
Phys 101 [P] (GER) 4
SoilS 201 3
Second Term Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biol 372 4

276
Communication Proficiency [C, W] (GER)  3
CropS 101  4
Phys 102 [P] (GER)  4
Complete Writing Portfolio

Third Year
First Term                     Hours
Biol 320                      4
CropS 201                     3
Hort 201                      3
Social Sciences [S, K] (GER)  3
Second Term                   Hours
Ag Ec 201                     3
Arts & Humanities [H, G] (GER) 3
Biol 332                      4
CropS 305                    3
Engl 351                     3

Fourth Year
First Term                     Hours
Entom 340                     3
Intercultural Studies [I, G, K] (GER) 3
MBioS 301                    4
Pl P 429                     3
Ag Elective                   3
Second Term                   Hours
Tier III Course [T] (GER)  3
Ag Electives                 12

Note: The following substitutions may be allowed with departmental approval; Chem 101/102 for Chem 105/106; Entom 343 for Entom 340; H D 205 for Engl 351; Math 171 for Math 107; Micro 201 for MBioS 101.

Description of Courses

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.

300 Diseases of Fruit Crops 2 Prereq Biol 120, Hort 310, or Hort 313. Comprehensive understanding of the diseases of fruit crops grown in the state of Washington.

331 Forest Pathology 2 (0-6) Prereq Biol 106. Parasitic and nonparasitic diseases of forest and shade trees; life histories of fungi as related to diseases.

403 Advance Cropping Systems 3 Prereq CropS 201; Pl P 429 or c//; or graduate standing. Same as CropS 403. Credit not granted for both Pl P 403 and 503.

421 General Mycology 4 (2-6) Rec Biol 106. The structure, life histories, classification, and economic importance of the fungi. Credit not granted for both Pl 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 Pl P 429 and 529.

490 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.

503 Advance Cropping Systems 3 Prereq CropS 201; Pl P 429 or c//; or graduate standing. Graduate-level counterpart of Pl P 403; additional requirements. Credit not granted for both Pl P 403 and 503.

511 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).

513 Nematodes and Nematode Diseases of Plants 2 (1-3) Prereq Pl P 429. Anatomy, identity, and diseases caused by nematodes; techniques and control.

514 Phytopathobiology 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).

515 Seminar 1 May be repeated for credit.

521 General Mycology 4 (2-6) Rec Biol 107 or 120. Graduate-level counterpart of Pl P 421; additional requirements. Credit not granted for both Pl P 421 and 521.

525 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.

526 Advanced Fungal Biology 4 (2-4) Prereq Pl 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.

529 General Plant Pathology 3 (2-3) Rec Biol 107 or 120. Graduate-level counterpart of Pl P 429; additional requirements. Credit not granted for both Pl P 429 and 529.

534 Fungal Genetics 4 (3-3) Prereq MBioS 301. Classical and molecular approaches to genetic analyses in fungi.

535 Molecular Genetics of Plant and Pathogen Interactions 3 Prereq MBioS 301, 303. Genetic and molecular biological aspects of host-pathogen interactions. Cooperative course taught by WSU, open to UI students (PlSc 535).

551 Epidemiology and Management of Plant Diseases 3 Prereq Pl P 429 or 529. Principles of plant disease epidemiology, control and ecology of pathogens. Cooperative course taught by WSU, open to UI students (PlSc 506).

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.

Department of Political Science

www.libarts.wsu.edu/polisci
Johnson Twarz 801
509-335-2544

Associate Professor and Chair, S. Stehr; Professors, W. Budd, C. Clayton, T. Cook, M. Cottam, L. LeLoup, N. Lovrich, O. Marenin, A. Mazar, D. Nice, E. Weber; Associate Professor, A. Appleton, F. Lutze, M. Pickerill, T. Pratt, T. Preston; Assistant Professor, J. Bouffand, L. Bouffand, C. Metelits, T. Ridout.

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 U.S. 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. The department advises students concerning training and career opportunities in federal, state, and
local governments, the foreign service, and related occupations. Its extensive internship program places students in public agencies, political parties, and similar organizations. The department also encourages and advises students on study abroad as part of preparing for careers in international affairs.

Division of Governmental Studies and Services

The department’s Division of Governmental Studies and Services (DGSS) is an instrument for extending beyond the classroom and into public service the resources represented in the department’s teaching and research personnel. Functions of the division include performing research and issuing publications relating to government and public affairs; providing training and consulting services to public agencies and private organizations concerned with public affairs; and administering internship programs to provide practical experience in government. DGSS maintains a collection of specialized government publications and related materials and, in general, acts as a link between teaching and the conduct of public affairs.

Preparation for Graduate Study

Students with some undergraduate course work in political science while majoring in such subjects as economics, business administration, history, criminal justice or sociology may readily pursue graduate study in political science. Undergraduates at other institutions or in other departments at this institution who contemplate graduate work in this department should acquire some training in political science. For graduate study and its graduate degree programs, the department clusters its courses in three subfields: American institutions and processes; foreign systems and world politics; and administration, justice, and applied policy studies.

Schedules of Studies

Students must complete 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 (120 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
Social Sciences [S,K] (GER) 3

Second Term

Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3

Intercultural Studies [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 Studies [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
Complete Writing Portfolio

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 Electives3 6

Second Term

300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Pol S Elective [M] 3
Cpt S or Stat Elective4 3
Engl 201 [W], 301 [W], or 402 [W] (GER) 3
Pol S Elective1 3

Fourth Year

First Term

300-400-level Arts & Humanities or Social Sciences Elective 3
Electives 6

Second Term

300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Pol S Elective 3
300-400-level Pol S Elective 3
Tier III Course [T] (GER) 3

Third Year

First Term

Minor Field Elective or Foreign Language2 3 or 4
Pol S [M] 3
Pol S 333 or 438 3
Pol S Comparative Elective3 3
Pol S IR Elective 3 3

Second Term

Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
Pol S [M] 3
Pol S Comparative Elective3 3
Pol S IR Elective1 3
Minor Field Elective or Foreign Language2 3 or 4

Fourth Year

First Term

Minor Field Elective 3
Electives 9

Second Term

Tier III Course [T] (GER) 3
Electives 6

Comparative Politics: Pol S 305, 314, 405 [M], 413, 428, 432, 435, 472 [M], 474, 476 (courses cannot be counted for both Comparative Politics and International Relations).

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)

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

Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3 or 4
Pol S 101 [S] (GER) 3
Science Elective [Q,B,P] (GER) 4

Second Term

Arts & Humanities [H,G] (GER) 3
Biological Science [B] (GER) 4
GenEd 111 [A] (GER) 3
Intercultural Studies [I,G,K] (GER) 3
Pol S 102 [S] (GER) 3

Second Year

First Term

Communication Proficiency [C,W] (GER) 3
Physical Science [P] (GER) 4
Pol S 103 [S] (GER) 3
Pol S Comparative Elective or Minor Field Elective2 3
Social Sciences [S,K] (GER) 3

Second Term

Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 6
Pol S Elective 3
Pol S IR Elective 3
Minor Field Elective 3
Complete Writing Portfolio

First Term

Minor Field Elective or Foreign Language2 3 or 4
Pol S [M] 3
Pol S 333 or 438 3
Pol S Comparative Elective3 3
Pol S IR Elective 3 3

Second Term

Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
Pol S [M] 3
Pol S Comparative Elective3 3
Pol S IR Elective1 3
Minor Field Elective or Foreign Language2 3 or 4

Fourth Year

First Term

Minor Field Elective 3
Electives 9

Second Term

Tier III Course [T] (GER) 3
Electives 6

POLITICAL SCIENCE - PRE-LAW OPTION (120 HOURS)

24 hours in Pol S required. 21 of the 24 required hours of course work must be earned at WSU.

First Year

First Term

Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
### 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.

<table>
<thead>
<tr>
<th>Minors</th>
<th>Years</th>
<th>Hours</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Science</td>
<td></td>
<td>12</td>
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</tr>
</tbody>
</table>

### Description of Courses

#### Political Science Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pol S 101</td>
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<tr>
<td>Pol S 102</td>
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<tr>
<td>Pol S 103</td>
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<tr>
<td>Pol S 404</td>
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<td>Pol S 405</td>
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<td>Pol S 406</td>
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<tr>
<td>Pol S 407</td>
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<tr>
<td>Pol S 408</td>
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</tr>
</tbody>
</table>

#### First Year

- **First Term**
  - Arts & Humanities [H,G] (GER) 3
  - Biological Sciences [B] (GER) 3
  - EcomS 101 [S] or EcomS 102 [S] (GER) 3
  - GenEd 111 [A] (GER) 3
  - Pol S 102 3

- **Second Term**
  - Arts & Humanities [H,G] (GER) 3
  - Biological Sciences [B] (GER) 3
  - EcomS 101 [S] or EcomS 102 [S] (GER) 3
  - GenEd 111 [A] (GER) 3
  - Pol S 102 3

#### Second Year

- **First Term**
  - Crm J 101 3
  - Phil 201 3
  - Physical Sciences [P] (GER) 4
  - Pol S 103 3
  - Elective 3

- **Second Term**
  - Arts & Humanities [H,G], Intercultural Studies [I,G,K] or Social Sciences [S,K] (GER) 3
  - Crm J 320 or 420 3
  - Pol S 402 3
  - Electives 6

- **Third Year**
  - Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
  - Pol S 404 [M] (GER) 3
  - Pol S Elective 3
  - Electives 6

- **Fourth Year**
  - Intercultural Studies [I,G,K] (GER) 3
  - Pol S 443 3
  - Electives 6

- **Tier III Course [T] (GER)** 3
  - Electives 12

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**381 Crime and Justice in the Movies** 3 (2-2)
- Prereq Crm J 101 or Pol S 101. Same as Crm J 381.

**400 Political Science Issues** 3 May be repeated for credit; cumulative maximum 6 hours.
- Prereq Pol S 101. Current issues in political science. Cooperative course taught by WSU, open to UI students (PolSc 404).

**402 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.

**404 [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.

**405 [M] Comparative Criminal Justice Systems** 3 Same as Crm J 405.

**410 History of American Indian Sovereignty and Federal Indian Law** 3 Same as Hist 410.


**413 Latin American Governments** 3 Institutions and political processes of selected Latin American republics.

**416 Policy Analysis** 3 Analysis of public policy formation, evaluation and implementation.

**417 Voting and Elections** 3 Analysis of voting behavior and elections; turnout, influences on voter choice, congressional and presidential elections, campaign finance, and polling.

**418 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 (PoSc 462).

**420 Political Parties and Interest Groups** 3 Roles, characteristics, and theories of political parties; organization, behavior, and impact of interest groups.


**427 United States Foreign Relations** 3 Ends and means in foreign policy; organization, management, control, and current policy issues.

**428 [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.

**429 Special Topics in American Foreign and Defense Policy** 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Pol S 102 or 103. Current issues in foreign policy.

**430 [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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>432</td>
<td>[M] 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>
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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>
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<tr>
<td>437</td>
<td>Classical Political Thought 3 The development of political philosophy from the pre-Socratics to Machiaveli.</td>
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<tr>
<td>438</td>
<td>[M] Recent Political Thought 3 The development of political thought since Machiaveli.</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, teambuilding, group dynamics, interpersonal and group conflict and job design for the public sector.</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>
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<tr>
<td>445</td>
<td>Public Personnel 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 (PolS 445).</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>
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<tr>
<td>447</td>
<td>[M] Comparative Public Administration 3 Public administration systems in Europe, Japan, Socialist and developing countries; origins and development.</td>
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<tr>
<td>448</td>
<td>Urban Politics and Policy 3 Urban political processes and policies; intergovernmental relationships; impact of urban reform.</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>
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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>
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<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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<tr>
<td>474</td>
<td>[T] African Politics 3 Prereq completion of one Tier I and three Tier II courses. Same as CES 439.</td>
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<tr>
<td>476</td>
<td>[M] Revolutionary China: 1800 to Present 3 Same as Hist 476.</td>
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<tr>
<td>495</td>
<td>Topics in Political Science V 1-3 May be repeated for credit; cumulative maximum 6 hours. Selected issues and topics in political science.</td>
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<tr>
<td>497</td>
<td>Political Science Internship V 1-12 May be repeated for credit; cumulative maximum 12 hours. Prereq Pol S 101. Off-campus internship in federal, state, or local government institutions; nonprofit or public organizations; written assignments and readings required. S, F grading.</td>
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<tr>
<td>498</td>
<td>Cooperative Education Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Off-campus cooperative education internship with business, industry, or government unit coordinated through the Professional Experience Program. S, F grading.</td>
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<tr>
<td>499</td>
<td>Special Problems V 1-4 May be repeated for credit. S, F grading.</td>
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<tr>
<td>501</td>
<td>The Scope of Political Science 3 Prereq 12 hours Pol S 101. Historical development and present status of the discipline; contemporary issues and future trends. Cooperative course taught by WSU, open to UI students (PolS 530).</td>
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<tr>
<td>502</td>
<td>Seminar in Normative Theory 3 Elements of normative theory developments; examination of bases of controversies and approaches in the modern literature using historical sources.</td>
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<tr>
<td>503</td>
<td>Introduction to Political Science Research Methods 3 Prereq 12 hours Pol S; Soc 321. Social science research design topics, measurement, sampling, data sources, experimental and quasi-experimental designs, field and historical designs, content analytic designs.</td>
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<tr>
<td>504</td>
<td>Quantitative Methods in Political Science and Criminal Justice 3 Prereq introductory statistics course. Applied statistical skills, enabling understanding of substantive political and social questions.</td>
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<tr>
<td>505</td>
<td>Comparative Criminal Justice Systems 3 Same as Crm J 505.</td>
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<tr>
<td>510</td>
<td>Seminar on American Institutions and Processes 3 Seminar required of all graduate students using this field as a major or a minor; it is a prerequisite of all other graduate seminars in the field.</td>
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<tr>
<td>511</td>
<td>Seminar in American Political Thought 3 May be repeated for credit; cumulative maximum 6 hours. The genesis and development of political thought in the United States.</td>
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<tr>
<td>512</td>
<td>Seminar in American Institutions 3 May be repeated for credit, cumulative maximum 6 hours. Origin, development, and contemporary issues in political organization and structure in the United States.</td>
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<tr>
<td>513</td>
<td>Seminar in American Political Behavior 3 May be repeated for credit, cumulative maximum 6 hours. Theoretical approaches to, and empirical analysis of, mass political behavior in the US.</td>
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<tr>
<td>514</td>
<td>Seminar in Public Policy 3 Examination of central questions in public policy including the nature of public policy, policy analysis, and government intervention in society.</td>
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<td></td>
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<tr>
<td>516</td>
<td>Seminar on Law, Courts, and Judicial Politics 3 Prereq graduate standing. Seminar on law, courts, and judicial politics.</td>
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</tr>
<tr>
<td>530</td>
<td>American Foreign Policy: Theories and Applications 3 Theories of international politics applied to American foreign policy. Cooperative course taught by WSU, open to UI students (PolS 501).</td>
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</tr>
<tr>
<td>531</td>
<td>Seminar in International Security 3 International security and arms control politics, negotiations, agreements. Cooperative course taught by WSU; open to UI students (PolS 561).</td>
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<tr>
<td>532</td>
<td>Seminar in International Political Economy 3 Institutions, politics, and decision-making processes in managing international economic relations.</td>
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</tr>
<tr>
<td>533</td>
<td>Topics in Political Psychology 3 May be repeated for credit; cumulative maximum 6 hours. Psychological influences on political decision making, bargaining, conflict and conflict resolution options.</td>
<td></td>
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<tr>
<td>534</td>
<td>Seminar in Comparative Politics 3 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught jointly by WSU and UI (PolS 595).</td>
<td></td>
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<tr>
<td>536</td>
<td>Special Topics in Comparative Politics 3 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught jointly by WSU and UI (PolS 595).</td>
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<tr>
<td>537</td>
<td>Concepts and Methods in Comparative Politics 3 Same as Pol S 501. Selected concepts (state, political participation), and methods (cross-national analysis, case study approaches) in comparative politics.</td>
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<td></td>
</tr>
<tr>
<td>538</td>
<td>International Development and Human Resources 3 Same as Anth 519.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>539</td>
<td>The Political Science Profession 1 Methods, problems, and purposes of teaching, research, and vocation in political science. S, F grading.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>540</td>
<td>Proseminar in Public Administration 3 Proseminar overviewing basic theories of administrative organization, relationships, and behavior.</td>
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<tr>
<td>541</td>
<td>Seminar in Research Evaluation 3 Same as Crm J 540.</td>
<td></td>
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</tr>
<tr>
<td>542</td>
<td>Proseminar in Administration, Justice, and Applied Policy Studies 3 May be repeated for credit; cumulative maximum 12 hours. Prereq Pol S 340 or 445. Analytical perspectives and theoretical issues. Cooperative course taught jointly by WSU and UI (PolS 592).</td>
<td></td>
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<tr>
<td>543</td>
<td>Topics in Public Administration and Policy 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Examination of the literature on the politics of the American public policy process.</td>
<td></td>
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</tr>
<tr>
<td>544</td>
<td>The Politics of Policy Process 3 American political process; policy making under the constraints of a democratic system; relationship to the (non) achievement of the public interest.</td>
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</tr>
</tbody>
</table>
547 Seminar in Public Administration 3
Cooperative course taught by WSU, open to UI students (PolSci 501).

597 Graduate Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. Prereq graduate student. On/off campus internship in federal, state, or local government institutions; nonprofit or public organizations; written assignments and readings required. S, F grading.

599 Research Practicum V 1-3 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

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.

Predental Curriculum

www.wsu.edu/~premed
Troy 305
509-335-4549

Professor and Coordinator, P. Verrell; Advisor, K. L. Brothers.

Becoming a dentist requires a program of graduate study in a dental school as well as undergraduate preparation. It is possible, but rare, for students to be admitted to some programs after the third year of college. The majority of students who go on to dental school complete a baccalaureate degree. No particular major is required, but almost all dental schools require specific undergraduate coursework and submission of scores from the Dental Aptitude Test (DAT), ordinarily taken in the summer following the student’s third college year. A total of 21 credits of elective courses in humanities and social sciences, plus one year of coursework in each of the following areas, will meet the requirements of almost all institutions and also give a good preparation for the DAT.

1. English composition (Engl 101 and an additional [W] course or Engl 198/199)
2. General chemistry (Chem 105 and 106 or Chem 115 and 116)
3. Organic chemistry (Chem 345, 346, and 1 additional credit of organic chemistry)
4. Physics (Phys 101 and 102 or Phys 201 and 202)
5. Introductory biology (Biol 106 and 107)
6. Molecular biology (MBioS 301, 302, and 303)

The latter is preferable.

Premedical Curriculum

www.wsu.edu/~premed
Troy 305
509-335-4549

Professor and Coordinator, P. Verrell; Advisor, K. L. Brothers.

Becoming a medical doctor requires a program of graduate study in medical school as well as undergraduate preparatory coursework. It is unusual for students to be admitted to medical school without a baccalaureate degree. No particular major is required, but almost all medical schools require specific undergraduate courses and the submission of scores from the Medical College Admission Test (MCAT). The MCAT is typically taken during the late spring or early summer of the student’s third college year. A total of 21 credits of elective courses in humanities and social sciences, plus one year of coursework in each of the following areas, will meet the requirements of almost all institutions and also give a good preparation for the MCAT.

1. English composition (Engl 101 and an additional [W] course or Engl 198/199)
2. General chemistry (Chem 105 and 106 or Chem 115 and 116)
3. Organic chemistry (Chem 345, 346, and 1 additional credit of organic chemistry)
4. Physics (Phys 101 and 102 or Phys 201 and 202)
5. Introductory biology (Biol 106 and 107)
6. Molecular biology (MBioS 301, 302, and 303)

All medical schools assume that applicants will have developed math skills adequate to the demands of the required courses listed above; however, a few schools specify either a semester or a year of calculus (Math 140 or 171, with Math 172 if a full year is needed; some students will require Math 107 in preparation for calculus).

Acceptance of a student by a medical school is contingent on the satisfactory completion of at least the minimum entrance requirements of that school, attainment of a superior scholastic record, good to excellent scores on the MCAT, and possession of personal qualifications appropriate to success in the medical profession. Most schools require applicants to appear for a personal interview. In addition, letters of recommendation from several college teachers or a single composite letter written by the coordinator must strongly support the applicant. The latter is preferable.

Many medical schools welcome applications from students who have majors, or who have taken considerable work, in such diverse areas as humanities, mathematics, psychology, sociology, physics, chemistry, biochemistry, and engineering. Adequate latitude exists in the medical schools’ requirements so that the advisor usually is able to suggest a schedule of studies to meet the needs of the individual student. Medical schools also expect a good selection of non-science courses on the student’s transcript.

Additional information can be obtained from P. Verrell, Professor and Coordinator, Premedical Curriculum, Washington State University, 305 Troy Hall, Pullman, WA 99164-4432.

Preventive Veterinary 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 preventive 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.
Department of Psychology

www.wsu.edu/psychology
Johnson Twr 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.

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.

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. Graduate programs require a solid background in mathematics, natural sciences, physics, philosophy, and social sciences as well as appropriate preparation in psychology itself.

Schedules of Studies

Students must complete 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 scientific methodology; (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

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Biol 101 [B] and 105 [B] or Biol 102 [B] or higher (GER)</td>
</tr>
<tr>
<td>Psych 105 [S] (GER) or 198</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
</tr>
<tr>
<td>Intercultural Studies [L,G,K] (GER)</td>
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Hours

4
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Second Term

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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Hours

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Second Year

First Term

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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Track Psych Elective¹</td>
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<td>Elective</td>
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Hours

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Second Term

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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<tr>
<td>Psych 310</td>
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<td>Complete Writing Portfolio</td>
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Hours

6
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2

Third Year

First Term

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<tr>
<td>Biol 101 [B] and 105 [B], or Biol 102 [B], or higher (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<tr>
<td>Intercultural Studies [L,G,K] (GER)</td>
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<tr>
<td>Psych 105 [S] (GER) or Psych 198</td>
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Hours

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Second Term

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<tr>
<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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<tr>
<td>Math Proficiency [N] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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</tbody>
</table>

Hours

3
3
3
3
3


PSYCHOLOGY - BACHELOR OF SCIENCE

(120 HOURS)

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, and Psy 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 scientific studies; (4) Students will demonstrate proficiency in the written communication of psychological concepts.

First Year

First Term

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Biol 101 [B] and 105 [B], or Biol 102 [B], or higher (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>Intercultural Studies [L,G,K] (GER)</td>
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<td>Psych 105 [S] (GER) or Psych 198</td>
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Hours

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Second Term

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<th>Course</th>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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Hours

3
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282
### Second Year

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<th>First Term</th>
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<tr>
<td>Arts &amp; Humanities [H, G] or Social Sciences [S, K] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Psych 311</td>
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<td>Arts &amp; Humanities [H, G], Intercultural Studies [I, G, K], or Social Sciences [S, K] (GER)</td>
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<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<tr>
<td>Psych 312 [M]</td>
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- Complete Writing Portfolio

### Third Year

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<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Group I Psych Elective&lt;sup&gt;2&lt;/sup&gt;</td>
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<tr>
<td>Group II Psych Elective&lt;sup&gt;2&lt;/sup&gt;</td>
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<tr>
<td>Electives</td>
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<th>Hours</th>
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<tbody>
<tr>
<td>Group I Psych Elective&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>Group II Psych Elective&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Non-Psych Electives</td>
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### Fourth Year

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<td>Group I Psych Elective&lt;sup&gt;2&lt;/sup&gt;</td>
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<tr>
<td>Psych Elective&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<td>300-400-level Non-Psych Electives</td>
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<tr>
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<tbody>
<tr>
<td>Non-Psych Electives</td>
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<tr>
<td>Psych Electives</td>
<td>1-4</td>
</tr>
</tbody>
</table>

<sup>1</sup> 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).


<sup>3</sup> Writing in the Major Courses: Psych 312, 328, 401, 440, 473.

### Certificates

- Abnormal Child Psychology
  - The certificate in abnormal child psychology requires a minimum of 21 hours. The 9 hour core is: Psych 361, 464, 465. 12 hours of electives are selected from: H D 300, 301, 302, 482, Soc 362, SHS 371, 478, Psych 412, 444, 445. A minimum GPA of 2.00 or higher is required in all coursework used for the certificate.

- Helping Skills
  - The certificate in helping skills requires a minimum of 20 hours. The 8 hour core is: Psych 333, 440, 444. 12 hours of electives are selected from: Psych 230, 265, 320, 321, 324, 363, 390, 412, 445, and 464. A minimum GPA of 2.00 or higher is required in all coursework used for the certificate.

### Description of Courses

#### Psychology Courses

- **Psych 105 [S] Introductory Psychology** 3
  - Contemporary psychology; biological and social influences on normal and abnormal human behavior. Credit not granted for both Psych 105 and 198.

- **Psych 106 Psychology Applied to Daily Living: Dealing with Friends, Alcohol, and Sex** 1
  - Rec Psych 105 or 198. Application of psychological procedures to the problems of group living, alcohol use, sexual decision making and related social issues.

- **Psych 198 [S] Psychology Honors** 3
  - Rec admittance to the Honors College. Credit not granted for both Psych 105 and 198.

- **Psych 203 [S] Introduction to Critical Psychology** 3
  - Rec Psych 105 or 198. Same as CES 203.

- **Psych 230 Human Sexuality** 3
  - Psych 105 or 198. Sexuality in personal development; personal, cultural, biological influences on sexual identification and behavior; fertility, reproduction, sexual functioning, sexuality and personality.

- **Psych 265 [B] Biopsychological Effects of Alcohol and Other Drugs** 3
  - Rec Biol 102 or 107; Psych 105 or 198. Biopsychological effects of the major classes of abused and psychotherapeutic drugs, including alcohol, stimulants, sedatives and hallucinogens.

- **Psych 275 Special Topics: Study Abroad** V 1-15 May be repeated for credit. S, F grading.

- **Psych 301 Seminar in Psychology** V 1-3 May be repeated for credit; cumulative maximum 6 hours. Rec 6 hours Psych.

- **Psych 306 Industrial Psychology** 3
  - Rec Psych 105 or 198. Job analysis and evaluation; personnel recruitment and selection; design and evaluation of training systems; performance appraisals.

- **Psych 307 Human Factors** 3
  - Rec Psych 105 or engineering major. Human limitations and capabilities in architectural and engineering design; system analysis.

- **Psych 308 Organizational Psychology** 3
  - Rec Psych 105 or 198. Employee motivation satisfaction and commitment; organizational communication; leadership; group behavior, teams and conflict; organizational change and development.

- **Psych 309 [S, D] Cultural Diversity in Organizations** 3
  - Rec Psych 105 or 198. Psychology applied to cultural diversity in organizations; interpersonal and intergroup relationships; diversity training; EEO legislation and affirmative action.

- **Psych 310 Pseudoscience and Human Behavior** 3
  - Rec Psych 105 or Psych 198. Evaluation of scientific claims in the behavioral sciences and everyday life.

- **Psych 311 Elementary Statistics in Psychology** 4
  - Rec college level math course with a grade of C-, or better. Descriptive statistics, probability, and inference; design and interpretation of research.

- **Psych 312 [M] Experimental Methods in Psychology** 4
  - Rec Psych 105 or Psych 198; Psych 311 or statistics course with a grade of C-, or better. Designing, conducting, and reporting research in selected areas of experimental psychology.
316 Applied Research in Psychology 3 (2-3)  
Prereq Stat 212 or statistics course. Experimental design and statistics; research; problem solving in small group situations.

320 Health Psychology 3 Prereq Psych 105 or Psych 198. Psychological and physiological aspects of stress; health behavior and disease prevention; adjustment to chronic illness.

321 Introduction to Personality 3 Prereq Psych 105 or Psych 198. Theories, concepts, methods, discoveries in psychology of personality.

324 [S,D] Psychology of Women 3 Prereq Psych 105 or Psych 198. Socialization and sex roles of women; a psychological perspective.

328 [M] Self Control 3 Prereq Psych 105 or Psych 198. Analysis of self-control problems; application of behavioral principles to student-conducted projects.

333 Abnormal Psychology 3 Prereq Psych 105 or Psych 198; 3 hours Psych. Problems of abnormality from traditional and evolving points of view; types, therapies, outcomes, preventive techniques.

342 Assessment and Treatment of Dual Diagnosis 3 Prereq Psych 105. Development of conceptual frameworks to guide the treatment and research of patient's co-occurring chemical dependency and psychiatric disorders.

350 [S] Social Psychology 3 Prereq Psych 105, Psych 198, or Soc 101. Attitude changes, conformity, interpersonal relations, groups and social influences explored to give a coherent view of social psychology.

361 [S] Principles of Developmental Psychology 3 Prereq Psych 105 or Psych 198. Introduction to biological and psychosocial influences on infant, child and adolescent development.

363 Psychology of Aging 3 Rec Psych 105 or Psych 198. Psychological processes of aging; changes in sensory, motor, cognitive, motivational and personality characteristics; research methodologies for the study of aging.

372 [B] Introduction to Physiological Psychology 3 Prereq Biol 102 or Biol 107; Psych 105 or Psych 198. Functional relationship between nervous system and behavior; integrated organ systems, sensory processes, and investigative procedures. Occasional lab meetings required; see instructor for times.

384 Sensation and Perception 3 Prereq Psych 105 or Psych 198. Perception of size, depth, form, shape; illusions, contrast; historical and modern theories and research; applications and demonstrations.

390 Operant Behavior 3 Prereq Psych 105 or Psych 198. Principles of operant and classical conditioning.


403 [T,D] Cultural Issues in Psychology 3 Prereq 3 hours cultural psychology. Same as CES 403.

409 Affective Neuroscience 3 Prereq A S 440, Biol 353, Neuro 301, or Psych 372. Same as Neuro 409. Credit not granted for both Psych 409 and 509.

412 Psychological Testing and Measurement 3 Prereq Psych 311 or statistics course. Assessment of behavioral variables in humans; individual differences. Cooperative course taught by WSU, open to UI students (Psych 412).

440 [M] Clinical/Community Psychology 3 Prereq Psych 333. Professional problems; theory, training, relations with clients, institutions, public.

444 Basic Helping Skills V 2 (0-6) or 3 (0-9) Prereq 6 hours Psych; junior standing. Training in basic skills to work with varied types of clients; didactic and role play instruction. S, F grading.

445 Undergraduate Practicum V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours Psych; junior standing. Supervised experience in local and county agencies; application of psychological principles to paraprofessional counseling. S, F grading.

464 Behavior Disorders of Children and Adolescents 3 Prereq Psych 105 or Psych 198; Psych 361. Theoretical and empirical approaches to the description, etiology, and treatment of behavior disorders in children and adolescents.

465 Neuropsychology of Learning Disorders 3 Prereq Psych 105 or Psych 198; Psych 361. Biological and cognitive aspects of learning disorders including etiology, common cognitive deficits, and treatment of cognitive dysfunction.

466 Environmental Psychology 3 Prereq Psych 105 or Psych 198. Psychological concepts applied to the mixture of positive and negative interactions individuals have with their physical environment.


470 Motivation 3 Prereq Psych 105 or Psych 198. Rec Psych 372, Psych 390, or Psych 490. Different motivational systems; analysis of environmental and biological factors influencing motivation, with emphasis on human motivation.


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

490 Cognition and Memory 3 Prereq 6 hours Psych. Human information processing, memory, and cognition.

492 [T] Psychology of Language 3 Prereq Psych 105 or Psych 198; one Tier I course; three Tier II courses. The cognitive and neuropsychological processes involved in the acquisition and use of language; cross-cultural perspectives on language and thought.

495 Field Experience in Personnel Psychology V 2 (0-6) to 6 (0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq MgmtOp 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.

496 Cooperative Education Internship V 2-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Psych 445. Off-campus cooperative education internship with business, industry, or government unit coordinated through the Professional Experience Program. S, F grading.

497 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 4 hours. S, F grading.

498 Research Participation V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq 6 hours Psych; by interview only. Participation in the current research of departmental faculty. S, F grading.

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

502 Research Design V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 16 hours. S, F grading. 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.

509 Affective Neuroscience 3 Prereq graduate standing. Same as Neuro 509.

511 Analysis of Variance and Experimental Design 3 Prereq Psych 311 or statistics course. Parametric, nonparametric, 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 S12. Advanced topics in specialized quantitative procedures and in design of research in psychology.

514 Psychometrics 3 Prereq Psych S12. 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 S12. Structural equation modeling, hierarchical linear modeling and meta-analysis and the software used to conduct these analyses.

520 Empirical Approaches to Psychotherapy 3 Prereq Psych S33. Major therapy systems, research on process and outcome of therapy.

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 S75).

534 Clinical Psychopharmacology 3 Prereq Psych S33. Classification, clinical application, and mechanisms of psychotherapeutic drugs used in the treatment of mental disorders.

535 Clinical Assessment and Diagnosis 3 Diagnosing, conceptualization of clinical problems, case presentations, and treatment planning.

536 Measurement Theory and Personality Assessment 3 Prereq by interview only. 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 S39 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 by interview only. Supervised practice in the 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.

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 S44).

545 Psychology Clinic Adult Therapy Practicum 3 (0-9) May be repeated for credit; cumulative maximum 18 hours. Prereq 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 S45 or c/. By interview only. Supervised practice in the clinical application of psychology at the WSU Counseling Service. S, F grading.

547 Medical Psychology Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Prereq by interview only. Supervised practice in the clinical application of psychology at the WSU Health and Wellness Service. S, F grading.

548 Clinical Externship V 1-3 May be repeated for credit; cumulative maximum 18 hours. Prereq by interview only. Supervised practice in the clinical application of psychology at approved hospitals and medical practices. S, F grading.

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 S20).

551 Group and Interpersonal Processes 3 Theories and research in interpersonal dynamics; cognitive, learning, equity, and attribution 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.

574 Physiological Psychology 3 Neuroanatomical, neurochemical, and other biological cases of human and animal behavior.

575 Foundations of Neuropsychology 3 Foundations in brain/behavior relationships and neuropsychological syndromes; preparation for advanced training in neuropsychological assessment.

576 Neuropsychological Assessment 3 Prereq Psych S75. 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 S574 or graduate standing in Neuro or P/T. Survey of drugs which affect brain function with emphasis on animal models and clinical applications.

579 Behavioral Neuroscience 3 Prereq Psych S574 or graduate standing in Neuro or P/T. Advanced topics in neurochemistry, neurophysiology, and neuroanatomy, as they relate to behavior.

584 Sensory Bases of Behavior 3 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.

592 Cognition and Memory 3 Experimental approaches to human information processing, memory, and cognition.

595 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.

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.

Description of Courses

Science Courses

Sci

101 [Q] Origins in the Natural World 4 (3-3) Interdisciplinary approach to science in the modern world for non-science majors. If both Sci 101 and 102 are taken, students satisfy [B], [P] and laboratory requirement.

102 [Q] Dynamic Systems in the Natural World 4 (3-3) Interdisciplinary approach to science in the modern world for non-science majors. If both Sci 101 and 102 are taken, students satisfy [B], [P] and laboratory requirement.

198 The Sciences for Honors Students I 4 (3-3) Prereq honors students only. Interdisciplinary approach to science in the modern world developed specifically for students not majoring in the sciences.
# Sciences, General Studies Program

**www.sci.wsu.edu/cos/generalstudies.html**

Troy 305 509-335-4549

Coordinator, V. Fisher.

General Studies is for students who have varied interests that may cut across the usual departmental boundaries and who wish to play a role in deciding on a suitable curriculum of study.

The degree offered is the Bachelor of Science. The degree is not identified with a specific subject-matter field on the diploma.

## 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.

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 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 sciences and engineering. Students who complete a Plan B curriculum receive a Bachelor of Science degree.

## Schedules of Studies

**Students must complete 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.**

### GENERAL STUDIES - BASIC MEDICAL SCIENCES PLAN A (120 HOURS)

#### First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>Biol 106 [B] (GER)</td>
<td>Introduction to Biology</td>
<td>4</td>
</tr>
<tr>
<td>First Term</td>
<td>Chem 105 [P] (GER)*</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>First Term</td>
<td>Engl 101 [W] (GER)</td>
<td>First Year Writing</td>
<td>3</td>
</tr>
<tr>
<td>First Term</td>
<td>GenEd 110 [A] (GER)</td>
<td>General Education</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Second Term

<table>
<thead>
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<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Second Term</td>
<td>Biol 107 [B] (GER)</td>
<td>Introduction to Biology</td>
<td>4</td>
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<tr>
<td>Second Term</td>
<td>Chem 106 [P] (GER)</td>
<td>General Chemistry</td>
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</tr>
<tr>
<td>Second Term</td>
<td>GenEd 111 [A] (GER)</td>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td>Second Term</td>
<td>Math 140 [N] or 171 [N] (GER)</td>
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### Second Year

#### First Term

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td>First Term</td>
<td>Chem 345</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>First Term</td>
<td>MBioS 301</td>
<td>Medical Biochemistry</td>
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#### Second Term

<table>
<thead>
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<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Second Term</td>
<td>Social Sciences [S,K] (GER)</td>
<td>Social Sciences</td>
<td>3</td>
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<tr>
<td>Second Term</td>
<td>Chem 346</td>
<td>General Chemistry</td>
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### Third Year

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<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
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<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>First Term</td>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K] or Social Sciences [S,K] (GER)</td>
<td>*</td>
<td>3</td>
</tr>
<tr>
<td>First Term</td>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>*</td>
<td>3</td>
</tr>
<tr>
<td>First Term</td>
<td>MBioS 303</td>
<td>Medical Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>First Term</td>
<td>Phys 101 [P] (GER)*</td>
<td>Intermediate Physics</td>
<td>4</td>
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<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Second Term</td>
<td>Phil 365 [H] (GER)</td>
<td>Philosophy</td>
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<tr>
<td>Second Term</td>
<td>Phys 102 [P] (GER)</td>
<td>Intermediate Physics</td>
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### Fourth Year

#### First Term

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<tr>
<th>Semester</th>
<th>Course Code</th>
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<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>*</td>
<td>3</td>
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</tbody>
</table>

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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)

#### First Year

<table>
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<td>Biol 106 [B] (GER)</td>
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<td>First Term</td>
<td>Engl 101 [W] (GER)</td>
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</table>

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<th>Semester</th>
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<tbody>
<tr>
<td>Second Term</td>
<td>Biol 107 [B] (GER)</td>
<td>Introduction to Biology</td>
<td>4</td>
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<td>Second Term</td>
<td>Chem 106 [P] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Second Term</td>
<td>Math 140 [N] or 171 [N] (GER)</td>
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</tr>
<tr>
<td>First Term</td>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>*</td>
<td>3</td>
</tr>
<tr>
<td>First Term</td>
<td>MBioS 303</td>
<td>Medical Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>First Term</td>
<td>Degree Program Elective</td>
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#### Fourth Year

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Term</td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>*</td>
<td>3</td>
</tr>
</tbody>
</table>
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

A Bachelor of Arts degree in sociology requires a minimum of 31 hours of sociology coursework in which students must maintain a C average. All majors must complete four required core courses as well as six elective courses in sociology. In addition, students must earn 24 credit hours in related fields, half of which must be in 300-400 level courses. Related field courses enable students to individualize their programs of study to best meet their academic and career goals. Students select related field courses from a departmentally approved list and in consultation with a faculty advisor.

Required Core Courses

The following courses are required of all majors: Soc 101, Soc 310, Soc 317 [M], and Soc 321.

Schedules of Studies

Students must complete 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.

SOCIOLGY - BACHELOR OF ARTS

(120 HOURS)

This is a prototype of one of many ways to complete the sociology degree program in four years. The program has built-in flexibility. 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 sociology 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

Hours

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

Hours

Arts & Humanities [H,G] (GER) 3
Communication [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Science Elective (GER) 4
Elective 2

Second Year

First Term

Hours

Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 6
Biological Sciences [B] (GER) 4
Intercultural Studies [I,G,K] (GER) 3
Elective 3

Second Term

Hours

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
Complete Writing Portfolio

Third Year

First Term

Hours

Related Field Electives 6
Soc 310 3
Soc 317 3
Soc Elective [M] 3

Second Term

Hours

Related Field Electives 6
Soc 321 4
Soc Elective [M] 3

Fourth Year

First Term

Hours

Related Field Electives 9
Soc Electives 6

Second Term

Hours

Related Field Electives 9
Elective 3
Tier III Course [T] (GER) 3

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. 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

S W

390 Social Welfare History and Policy 3 Current social welfare programs; income maintenance, health services, criminal justice, public housing, child welfare; historical development of social welfare programs.

393 [M] Social Work Methods in Community Organization 3 Social legislation creation and impact on delivery services by professional/paraprofessional social workers.
395 Child Welfare 3 Social work practice in child welfare; adoption, foster homes, child protection, group homes, day care, children’s institutions, dependency, traditional and non-traditional family.

396 Social Work with the Aging 3 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).

400 [M] Social Work Field Experience 10 or 15 Prereq S W 492. Placement in social agency; knowledge in the helping relationship; decision making in applied settings. S, F grading.

402 [S,D] Contemporary Masculinity and Men’s Issues 3 Same as W St 302.

310 Development of Social Theory 3 Prereq Soc 101. Foundations of sociological theory; introduction to original works of early social theorists.

317 Research Methods in Sociology 3 Prereq Soc 101; certified major in sociology. Designing, conducting and reporting social research.

320 Introduction to Social Research 3 Prereq Soc 101. Methods of collecting data; surveys, experiments, field observations; organization and interpretation of data; reading social research findings.

321 Quantitative Techniques in Sociology I 4 Prereq Soc 317. Levels of measurement; measures of central tendency, dispersion and association; normal curve, statistical inference; logic of quantitative comparison and decision making.

331 [S] Population, Resources, and the Future 3 Effects of population on resource depletion, environmental deterioration, social and economic structure; zero population growth prospects; limits to growth debate.

332 [M] Society and Environment 3 Prereq Soc 101. Society-environment relations, including environmental attitudes and behavior; the environmental movement and environmental politics and policy-making.


343 [S,D] Sociology of Professions and Occupations 3 Prereq Soc 101. Social organization of work in America including historical and contemporary trends, bureaucracy, gender/racial inequality, technological affects, work/family relations.


346 [S,D] Sociology of Education 3 Prereq Soc 101 or 102. Examination of how educational institutions are influenced by other social forces, how school practices affect individual outcomes and how race/class/gender shape educational opportunity.


351 [S,D] The Family 3 Prereq Psych 105 or Soc 101. Family system and its interaction patterns; family life cycle from marriage through death; marital relations, divorce, sexuality, parenting crisis, abuse.

352 Sociology of Emotions 3 Prereq Psych 105 or Soc 101. Examination of emotions by surveying current theory and research; investigate emotions such as shame, guilt, empathy, jealousy, envy, and anger.

356 Sociology of Aging and the Life Course 3 Aging as a lifelong process; behavior, personality characteristics, social relations changes over the life course; historical, social structural, demographics, contextual influences. Cooperative course taught jointly by WSU and UI (Soc 431).


361 [M] Criminology 3 Prereq Soc 101. Crime measurement, the correlates of crime, and specific types of crime such as white-collar and drug crime.


363 The Social Organization of Hate Crimes 3 Prereq Soc 101. Definition measurement, social context, and social regulation of hate crimes as a social problem; emphasizing their production and social organization.

364 [M] Law and Society 3 Prereq Crm J 101 or Soc 101. Various points of intersection of legal and social systems; special attention given to historical development.


368 Sociological Theories of Addictive Behavior 3 Prereq Soc 101. Alcohol use and abuse in the context of other legal and illegal substances focusing on theories and drug policies.

372 [M] The Sociology of Film 3 The social, economic, and political factors that influence film production and the impact of films on American culture.

373 [S,D] Media, Culture and Society 3 The production of popular culture by media organizations and its effects on society.

375 Aspects of Sustainable Development 3 Prereq junior standing. Same as Econ 326.

380 [S,D] Gender and Work 3 Gender and inequality at work including occupational segregation, wage inequality and balancing work and family.

383 [S,D] Sociology of Sexuality 3 Prereq Soc 101, Soc 102, or W St 200. Social construction of sexuality, sexual behavior, and sexuality as a part of social inequalities and institutions.


391 Special Topics in Sociology V 1-3 May be repeated for credit; cumulative maximum 6 hours.

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<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>393</td>
<td>Special Topics V 1-3</td>
<td>May be repeated for credit; cumulative maximum 6 hours.</td>
</tr>
<tr>
<td>397</td>
<td>Special Topics in Sociology: Study Abroad V 1-15</td>
<td>May be repeated for credit. S, F grading.</td>
</tr>
<tr>
<td>398</td>
<td>Special Topics in Sociology: Study Abroad V 1-15</td>
<td>May be repeated for credit. S, F grading.</td>
</tr>
<tr>
<td>415</td>
<td>[T] Globalization</td>
<td>3 Prereq Soc 101; completion of one Tier I and three Tier II courses. Structural foundations of global social change; theories of intersocietal interactions and interdependencies.</td>
</tr>
<tr>
<td>418</td>
<td>Human Issues in International Development 3 Same as Anth 418</td>
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</tr>
<tr>
<td>421</td>
<td>Quantitative Techniques in Sociology II 3 Probability theory, sampling distributions, random variables, matrix approaches to statistical techniques, calculus for statistics and computer applications.</td>
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<tr>
<td>424</td>
<td>Sociology and Public Policy 3 Prereq Soc 101</td>
<td>Relationship between sociology and public policy; effective utilization of concepts and methods in applied settings.</td>
</tr>
<tr>
<td>430</td>
<td>[T] Society and Technology 3 Prereq completion of one Tier I and three Tier II courses. Role of technology in social evolution; social impacts and shaping of technology.</td>
<td></td>
</tr>
<tr>
<td>433</td>
<td>[T] Urbanization and Community Organization 3 Prereq Soc 101; one Tier I course; three Tier II courses. Organization, function, change, development, and decline of communities; applications emphasizing rural or urban settings.</td>
<td></td>
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<tr>
<td>442</td>
<td>[T] Political Sociology 3 Prereq Soc 101; one Tier I course; three Tier II courses. Sociological analysis of political institutions and power structures; social and cultural basis of political behavior.</td>
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<tr>
<td>446</td>
<td>Medical Sociology 3 Prereq Soc 101</td>
<td>Social factors related to health and illness; organization and change in health care; impacts of health care reform, rising costs, and aging.</td>
</tr>
<tr>
<td>455</td>
<td>[T] Beliefs, Norms, and Values 3 Prereq Soc 101; one Tier I course; three Tier II courses. General survey of theory and research on the common meanings - beliefs, norms, values - constructed by societies and held by individuals.</td>
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<tr>
<td>461</td>
<td>Corrections 3 Prereq Soc 101</td>
<td>History, facilities, processes, strategies for the correction and punishment of offenders, analysis of concepts of prevention and control of crime.</td>
</tr>
<tr>
<td>468</td>
<td>Addictive Behavior Across the Demographic Spectrum 3 Prereq Psych 105, Soc 101, or Crm J 101. Overview of social, cultural and historical perspectives on dealing with addictive behavior.</td>
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<tr>
<td>474</td>
<td>[T] Collective Behavior and Social Movements 3 Prereq Soc 101; one Tier I course; 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.</td>
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<tr>
<td>480</td>
<td>Sociology of Race Relations 3 Basic understanding of race relations; major sociological concepts and theories regarding minority and majority group relations.</td>
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<tr>
<td>484</td>
<td>[T,D] Lesbian and Gay Studies 3 Same as W St 484.</td>
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<tr>
<td>491</td>
<td>Advanced Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.</td>
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<tr>
<td>495</td>
<td>Internship V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq social science major; by interview only. Work experience related to undergraduate major and career interests. S, F grading.</td>
<td></td>
</tr>
<tr>
<td>496</td>
<td>From Theory to Practice: The Sociology of Service 3 Prereq Soc 310; Soc 320 and 321 or c/; cumulative gpa 3.00 or higher. Service learning course connecting theoretical solutions to social problems with service in community organizations.</td>
<td></td>
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<tr>
<td>498</td>
<td>Research Assistantship 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Soc 101; 320; by interview only. Supervised experience in current research by departmental faculty.</td>
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<tr>
<td>499</td>
<td>Special Problems V 1-4 May be repeated for credit. S, F grading.</td>
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<tr>
<td>510</td>
<td>Development of Social Theory 3 Examination of the foundations of social theory.</td>
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<tr>
<td>512</td>
<td>Theory Construction and Formalization 3 Testing: formalization of theoretical systems; adaptation of general models to specific problems.</td>
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<tr>
<td>517</td>
<td>Seminar in Contemporary Sociological Theory 3 Recent developments in sociological theory, analysis, application and appraisal of specific theoretical systems.</td>
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<tr>
<td>519</td>
<td>International Development and Human Resources 3 Same as Anth 519.</td>
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<tr>
<td>520</td>
<td>Research Methods in Sociology 3 Methodology of social research at the professional level.</td>
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<tr>
<td>521</td>
<td>Regression Models 3 Prereq Soc 421. Simple and multiple regression, structural equation models, nonlinear applications, applications for discrete dependent variables.</td>
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<tr>
<td>522</td>
<td>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.</td>
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<tr>
<td>523</td>
<td>Qualitative Methods Practiceum 3 Prereq graduate standing. Introduction to qualitative research methods as used in social sciences; epistemological underpinnings and empirical techniques.</td>
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<tr>
<td>524</td>
<td>Sociology and Public Policy 3 Sociological theories used to consider the rationale for public policy; development of tools for policy analysis.</td>
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<tr>
<td>525</td>
<td>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.</td>
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<tr>
<td>530</td>
<td>Demography 3 Population studies; causes, effects, and measurement of changes in fertility, mortality, and migration; population estimation and projection.</td>
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<tr>
<td>531</td>
<td>Human Ecology 3 Ecosystem context of human life; change viewed ecologically; sociological use and misuse of ecological concepts; issues in theory and research.</td>
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<tr>
<td>532</td>
<td>Environmental Sociology 3 Societal-environmental interactions; impacts of human societies on the physical environment; environmental impacts on human behavior and social organization.</td>
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<tr>
<td>535</td>
<td>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.</td>
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<tr>
<td>536</td>
<td>Special Topics in Environmental Sociology V 1-3 May be repeated for credit; cumulative maximum 9 hours. Special topics in environmental sociology.</td>
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</tr>
<tr>
<td>542</td>
<td>Social Stratification: Class, Race and Gender Inequalities 3 Theoretical and empirical research in both classic stratification literature and recent scholarship on class, race/ethnicity and gender.</td>
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<tr>
<td>545</td>
<td>Sociology of Community 3 Community stability and change: interaction processes; decision making; societal linkages; effects on well-being.</td>
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<tr>
<td>546</td>
<td>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.</td>
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<tr>
<td>553</td>
<td>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.</td>
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<tr>
<td>554</td>
<td>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.</td>
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<tr>
<td>555</td>
<td>Sociology of Gender 3 Sociological theory and research on gender and gender inequality in American society.</td>
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<tr>
<td>556</td>
<td>Sociology of Aging and the Life Course 3 Theory and research on the changes individuals undergo over the life course; influences of history, social structure, agency and social relations on lives. Cooperative course taught jointly by WSU and UI (Soc 431).</td>
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<tr>
<td>568</td>
<td>Adolescents Deviance 3 Contemporary sociological theory and research in adolescent deviance; action programs; and emerging issues.</td>
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</table>
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 program in speech-language pathology is accredited nationally by the Council on Academic Accreditation of the American Speech-Language-Hearing Association and 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.

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 & hearing sciences may be required to take undergraduate prerequisite coursework prior to taking graduate coursework.

Schedules of Studies

Students must complete 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

At least 45 of the total hours required for the bachelor's degree 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 [M].

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

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Art &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>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</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>
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Second Term

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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Art &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Psych 105 [S] (GER)/SHS Elective</td>
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Second Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Art &amp; Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
<td>4</td>
</tr>
<tr>
<td>SHS 205</td>
<td>3</td>
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<td>SHS 250</td>
<td>3</td>
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Second Term

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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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<tr>
<td>SHS Electives¹</td>
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<tr>
<td>Stat 212 [N] (GER)</td>
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</table>

Third Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHS 201</td>
<td>4</td>
</tr>
<tr>
<td>SHS 371</td>
<td>3</td>
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<tr>
<td>SHS 372</td>
<td>3</td>
</tr>
</tbody>
</table>
489 (SHS 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.

Speech and Hearing Sciences Courses

SIS 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

1 Selected GERs may be used to fulfill SHS electives. Highly recommended electives include: Acctg 230, 231; Anth 405, 450; Biol; Chem; Cpt S Engl 255, 256, 402; For Lang: H D; MgtOp 101, 301; Physics; Psych 311, 312, 321, 333, 361, 363, 372, 384, 390, 412, 464, 490; SHS 489, 490; Soc 356; Sp Ed 301; Stat 212; T & L 330, 333, 335; W St 220; and others in consultation with your advisor.

Minors

Minor in Disability Studies

The minor in disability studies requires 18 credit hours, with 9 hours in 300-400-level course work. Core courses include CES 302 or Soc 340; SHS 250; and SHS 489. Students select additional courses within or across two designated tracks of Culture and Society—Am St 216, Arch 202, CES 101, 260, 302, 440, Com 471/CAC 404, H D 350, SHS 201, 202, Soc 102, 331, 360, 373, 455, 474, W St 200, W St /CES/Soc 300—and Science and Rehabilitation—CoPsy 478, Econ 455 FSHN 405, MvSt 484, Phar P 250, Phil 365, SHS 473, Sp Ed 301, 409, T & L 330.

Minor in Speech and Hearing Sciences

A minor in speech and hearing sciences requires a minimum of 16 hours including SHS 205, 371, 372; 8 hours must be 300-400-level courses excluding SHS 461 and 475.

Description of Courses

Disability Studies Courses

DisSt

250 (SHS 250) [S,D] Perspectives on Disability

3 Historical, international, socioeconomic, ethical and personal perspectives on disability; individual choices, societal values, and social responsibility.

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.

471 Speech-Language Pathology and Audiology in Schools

3 Therapy methods and procedures in speech-language pathology and audiology; state/federal laws affecting public school therapy. Cooperative course jointly taught by WSU and UI (EASP 351).

472 Audiology


473 Language and Literacy

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) May be repeated for credit; cumulative maximum 9 hours. Prereq speech and hearing major, SHS 461; 2.4 cumulative gpa; Co in SHS 475 required for repeat credit; by interview only. Practicum in diagnosis and therapy for speech/language and hearing disorders.

477 Language Impairment

3 Prereq SHS 371. Assessment and habilitation for the preschool and elementary-age child with language disorders.

479 Neuroanatomy

3 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 Assessment of Speech and Language

3 Prereq SHS 376 or c/c; 475 or c/c; 478. Principles, techniques, and materials involved in exploring the nature of speech and language disorders; planning programs of therapy.

490 Special Topics in Speech and Hearing Sciences

V 1-3 Study of specialized topics in speech and hearing sciences. May be repeated for credit; cumulative maximum 9 hours.

499 Special Problems

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

501 Research Methods

1 2 Philosophy of research, types of literature. SHS graduate student; all undergraduate prerequisite courses completed.
503 Research Methods II 2 Experimental and descriptive designs, application of statistics, analysis of statistical results. SHS graduate student; all undergraduate prerequisite courses completed.

540 Special Topics in Speech and Hearing Sciences V 1-3 Advanced study of specialized topics in speech and hearing sciences. May be repeated for credit; cumulative maximum 9 hours. SHS graduate student; all undergraduate prerequisite courses completed.

542 Infant and Toddler Communication and Language 3 Typical development of communication and language in the birth to 5 year-old population; impairments affecting development; disorders; assessment; intervention. SHS graduate student; all undergraduate prerequisite courses completed.

543 School Age and Adolescent Language 3 Language development in typically developing and language impaired school age and adolescent students; disorder types; implications for assessment and intervention. SHS graduate student; all undergraduate prerequisite courses completed.

550 Special Topics in Speech and Hearing Sciences V 1-3 Study of specialized topics in speech and hearing sciences. May be repeated for credit; cumulative maximum 9 hours. SHS graduate student; all undergraduate prerequisite courses completed.

556 Problems in Stuttering 3 Historical and current literature; problem-solving strategies applied to theoretical and clinical problems in stuttering. SHS graduate student; all undergraduate prerequisite courses completed.

557 Cleft Palate and Craniofacial Disorders 2 Speech and voice problems associated with clefts of the lip and palate. SHS graduate student; all undergraduate prerequisite courses completed.

560 Special Topics in Speech and Hearing Sciences V 1-3 Advanced study of specialized topics in speech and hearing sciences. May be repeated for credit; cumulative maximum 9 hours. SHS graduate student; all undergraduate prerequisite courses completed.

562 Motor Speech Disorders 2 Underlying processes of neuromuscular control and feedback; results of damage and disease on neuromotor system. SHS graduate student; all undergraduate prerequisite courses completed.

563 Dysphagia 3 Anatomy and physiology of swallowing; evaluation and treatment of swallowing disorders. SHS graduate student; all undergraduate prerequisite courses completed.

565 Augmentative Communication 3 Augmentative communication theory; implementation, training strategies, ongoing adjustments, and evaluating effectiveness. SHS graduate student; all undergraduate prerequisite courses completed.

566 Off-Campus Clinical Practice V 2 (0-6) to 6 (0-18) Prereq SHS S75; by interview only. Advanced clinical practice in off-campus setting; evaluation and treatment of speech, language, and hearing disorders. May be repeated for credit; cumulative maximum 15 hours. SHS graduate student; all undergraduate prerequisite courses completed.

567 Issues in Public School Service Delivery 3 Clinical operations, policies, procedures, including legal, ethical, and professional considerations in the schools. SHS graduate student; all undergraduate prerequisite courses completed.

568 Advanced Internship in Speech-Language Pathology V 1-18 May be repeated for credit. Prereq SHS 566, 575, by interview only. Advanced practicum in diagnosis of and therapy for communication disorders. SHS graduate student; all undergraduate prerequisite courses completed. S, F grading.

571 Seminar in Speech Pathology 3 May be repeated for credit; cumulative maximum 9 hours. Prereq SHS graduate student; all undergraduate prerequisite courses completed. Exploration of ideas derived from current writings and research in speech pathology and audiology.

574 Neuropathologies of Language 3 Advanced study of language disorders resulting from brain insult after birth; emphasis on aphasia and related disorders. SHS graduate student; all undergraduate prerequisite courses completed.

575 Advanced Clinical Practice V 2 (0-6) to 6 (0-18) Prereq by interview only. Advanced clinical practice in evaluation and treatment of speech, language, and hearing disorders. May be repeated for credit; cumulative maximum 15 hours. SHS graduate student; all undergraduate prerequisite courses completed.

576 Voice Disorders 3 Functional and organic voice disorders resulting from various etiologies. SHS graduate student; all undergraduate prerequisite courses completed.

578 Professional Issues in Speech-Language Pathology 3 Contemporary philosophical and professional issues in the field of communication science and disorders. May be repeated for credit; cumulative maximum 9 hours. SHS graduate student; all undergraduate prerequisite courses completed.

580 Special Topics in Speech and Hearing Sciences V 1-3 Advanced study of specialized topics in speech and hearing sciences. May be repeated for credit; cumulative maximum 9 hours. SHS graduate student; all undergraduate prerequisite courses completed.

582 Clinical Perspectives 3 Theory and clinical experience designed to assist students in integrating course work into a clinical perspective. SHS graduate student; all undergraduate prerequisite courses completed.

587 Speech-Language Pathology in the Medical Setting 2 Report writing and charting, collaborating with the medical team, establishing prognosis and assessing efficacy of treatment, and third-party reimbursement. SHS graduate student; all undergraduate prerequisite courses completed.

588 Phonological Acquisition and Behavior 3 Current literature in articulatory development and deviancy; diagnosis and therapy. SHS graduate student; all undergraduate prerequisite courses completed.

590 Special Topics in Speech and Hearing Sciences V 1-3 Advanced study of specialized topics in speech and hearing sciences. May be repeated for credit; cumulative maximum 9 hours. SHS graduate student; all undergraduate prerequisite courses completed.

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. Students enrolled in a Ph.D. program in Agricultural Economics, Economics, Management, Operations, or Math may be enrolled in the M.S. in Statistics/Ph.D. option. They can simultaneously pursue a Ph.D. in their primary discipline and an M.S. in Statistics. 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

Minor in 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 103 or intermediate math placement score of 13. 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 intermediate math placement score of 13. 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.


391 Advanced SAS Programming I 1 Prereq Stat 390 or c/. Data set rearrangements, macros, report writing and effective use of SAS manuals, documentation and sample program library. S, F grading.

392 SAS Special Topics 1 May be repeated for credit. Prereq Stat 390 or c/. Special features of the SAS system including, but not limited to: SAS/GRAPH, SAS/ASSIST, SAS/IML, SAS/ACCESS, SAS/FS; 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 Stat 212, 360, 412, or MgtOp 215. Special topics in statistics. Cooperative course taught jointly by WSU and UI (Stat 404).

410 Topics in Probability and Statistics 3 Prereq one 3 hour statistics 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, Math 140, 171, 202, 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; and one 3 hour statistics course. Binomial, Poisson, multinomial distribution; contingency tables, Fisher’s tests, log-linear models; ordinal data; applications in biology, business, psycholgy, 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 Stat 360 or one 3 hour 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 Stat 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.

432 Sampling Methods 2 Prereq Stat 360 or c/. Cooperative course taught jointly by WSU and UI (Stat 432).

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).

446 Six Sigma Innovation 3 Six Sigma is a highly structured strategy for acquiring, assessing, and applying customer, competitor, and enterprise intelligence for the purposes of product, system or enterprise innovation and design. It has two major thrusts, one that is directed toward significant innovation or improvement of an existing product, process or service that uses an approach called DMAIC (Define - Measure - Analyze - Improve - Control) and a second dedicated to design of new processes, products or services. This course focuses on the innovation aspects of Six Sigma. Cooperative course taught by UI (Stat 446); open to WSU students.

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; nonparametric. 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 Prereq one 3 hour statistics course. 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 EconS 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 May be repeated for credit; cumulative maximum 12 hours. Prereq EconS 500; EconS 501; EconS 511. Same as EconS 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.
Statistics

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.education.wsu.edu/TL

Cleveland 321
509-335-6642


Courses of studies (availability differs across campuses) are offered for elementary school teaching (Bachelor of Arts in Education, Master in Teaching) and secondary school teaching (degree from major plus certification, Master in Teaching). Additional endorsements are offered in special education, English as a second language/bilingual education, and reading. Graduate programs include Master of Arts in Education, Education Masters, Doctor of Education, and Doctor of Philosophy.

Department of Teaching & Learning faculty actively research their various education-related fields, contributing new knowledge to both undergraduate and graduate programs. All programs rely heavily on research-based theoretical frameworks and close connections with field-based practitioner experience and knowledge. Programs stress active engagement, critical problem-solving, and equity/fairness for all learners.

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. Visit our web site at http://www.educ.wsu.edu/accreditation/titleii.html

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. The candidate provides evidence of good character and personal fitness to teach. Fingerprinting is required. A background investigation is conducted by the Washington State Patrol, the FBI, and Office of Professional Practices.

2. The degree is awarded and the professional preparation program is satisfactorily completed.

Following these guidelines:

- All course work is taken for a letter grade where offered. Pass, fail grading is not accepted except for field experience courses.
- No more than 3 semester hours of correspondence credit is permitted to fulfill professional course work requirements.
- The candidate has earned no grade lower than C (2.0) for professional course work, and course work in the endorsements. The C minimum grade applies also to math, science, and social studies requirements in the elementary and early childhood programs.
- The cumulative WSU gpa and the gpa computed separately for professional course work and each endorsement is not less than 2.5.
- The student has completed all work within five years of admission to teacher preparation. Those not finishing this within this time limit will be subject to all new program requirements.
- The candidate has achieved a passing score on the statewide examinations in basic skills (WEST-B), content (WEST-E), and on the pedagogy assessment.
- The candidate has made application and paid licensing fees.
- The candidate has met the Professional Dispositions Assessment standards.

Transfer students entering an undergraduate or post baccalaureate 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 post baccalaureate applicants should consult with an advisor regarding equivalency and transferability of course work.

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**

**www.education.wsu.edu/certification**

Information is available upon request from the Certification Coordinator, Office of Student Services, College of Education, PO Box 642152, Pullman, WA 99164-2152 509-335-4855 or shickle@wsu.edu.

**Professional Certificate**

**www.educ.wsu.edu/partnerships/cep/procert.html**

Information is available upon request from the Center for Collaboration with Schools and Communities, College of Education, PO Box 642114, Pullman, WA 99164-2114, 509-335-1988.

**WSU PULLMAN TEACHER CERTIFICATION**

Inquiries and requests for program information should be addressed to Office of Student Services, College of Education, PO Box 642152, Pullman WA 99164-2152 509-335-4855 or beateacher@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 listed under Single Subject Certificate Programs at the end of this section. All course work is taken for a letter grade where offered. Add-on endorsements for pre-service teachers are listed under Single Subject Certificate Programs at the end of this section. All course work is taken for a letter grade if approved. T & L 490 is an extended practicum placement and activities are arranged by the State Board of Education.

WSU Pullman Teacher Certification Admission to Undergraduate and Post baccalaureate 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 2006. Contact Student Services at 509-335-4855 or beateacher@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 post-secondary 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. Secondary Majors: Nine hours of course work in the endorsement area. Certified in major department. Contact major department for additional requirements.
9. Personal goal statement.
10. Interview and writing sample.

**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 may 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 and a passing score on the WEST-E (Praxis II) content test is required for placement. The following courses are required:

- 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), T & L 490, Advanced Practicum (2 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.

295
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; obtain a passing score on the WEST-E content examination; 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 and secondary education teacher 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 June. 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 http://www.educ.wsu.edu/tl


Education Master's Degree (EdM)
WSU Pullman also offers an Education Master's degree (EdM) degree program with endorsements in reading, special education, and/or bilingual ESL for educators who already have a teaching certificate. This non-thesis degree focuses on K-12 developing teachers' or other professionals' knowledge and skills in education and leadership.

WSU TRI-CITIES TEACHER CERTIFICATION

WSU Tri-Cities also offers an Education Master's degree (EdM) program for literacy for educators who already have a teaching certificate. This non-thesis degree focuses on K-12 literacy development across the curriculum. Other endorsements available include special education and bilingual/ESL areas.

WSU VANCOUVER TEACHER CERTIFICATION

www.edu.wsu.edu/TL/vancouver.htm
Inquiries and requests for application materials should be addressed to WSU Vancouver, Education Department, 14024 NE Salmon Creek Avenue, Vancouver WA 98686, (360) 546-9673, or by email at admissions@vancouver.wsu.edu.

WSU Vancouver seeks to prepare the best possible teachers and therefore seeks highly qualified individuals for admission to the Bachelor of Arts in Education and the Master in Teaching 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) 546-9673. All applicants must have a passing score on the state wide basic skills (WEST-B) test to be considered for admission. 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)
The Master in Teaching is a full-time, 15-month field-based program leading to elementary and secondary 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 Education Department. All applicants must have a passing score on the state wide basic skills (WEST-B) and subject test (WEST-E) to be considered for admission. Applications are available in the summer and must be submitted by December 1 for the program beginning the following May.


Course of Study for Secondary Education (37-51 hrs): Ed Ad 506, EdPsy 503, 504, T&L 522, T&L 528,


### Education Master's Degree (EdM)

WSU Vancouver also offers an Education Master's degree (EdM) degree program with endorsements in reading, special education, and/or bilingual ESL for educators who already have a teaching certificate. This non-thesis degree focuses on K-12 developing teachers' or other professionals' knowledge and skills in education and leadership.

### Schedules of Studies

**Students must complete 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.**

#### ELEMENTARY EDUCATION TEACHER CERTIFICATION (120 HOURS)

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 requirements of the Department of Teaching and Learning. Candidates for specific subject certificates shall declare a major with the subject-matter department. Students completing subject-specific endorsements will follow the Secondary Professional Education Core: Psych 105; EdPsy 468, T&L 300, 301, 317, 464, 465, 466, 467, 469, 470 and 415 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 beyond T & L 300, 301, 317, 464, 465, 466, 467, 469, 470 and 415 unless admitted to an EdM certificate program.

#### First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td></td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>ComSt 102 [C] or H 4 305 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math prereq, if necessary, or Elective</td>
<td>3</td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 251</td>
<td>3</td>
</tr>
<tr>
<td>Mus 153 [H] (GER), if necessary</td>
<td>3</td>
</tr>
<tr>
<td>Psych 105 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective [B,P,Q] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>T &amp; L 300</td>
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</tr>
</tbody>
</table>

#### Second Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td></td>
</tr>
<tr>
<td>Am St 216 [S,D] or Hist 150 [S,D] (GER)</td>
<td>3</td>
</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 or 4</td>
</tr>
<tr>
<td>T &amp; L 301</td>
<td>2</td>
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<tr>
<td>Certify Major</td>
<td></td>
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<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>Math 252 [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 305</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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<td>T &amp; L 320</td>
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<tr>
<td>T &amp; L 330</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 402</td>
<td>1</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
</tbody>
</table>

#### Fourth Year

**First Term** | **Hours** |
| T & L 300 | 2 |
| T & L 403 | 2 |
| T & L 413 | 2 |
| T & L 445 | 2 |
| T & L 490 | 3 |
| Second Term | **Hours** |
| T & L 415 | 16 |

1 Special Education endorsement requires Sp Ed 421.

### 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: Psych 105; EdPsy 468, T&L 300, 301, 317, 464, 465, 466, 467, 469, 470 and 415 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 requirements to fulfill prerequisite and admission to teacher preparation program requirements: ComSt 102; Engl 198 and 199 or Engl 101 plus Engl 201, 301, 302, or 402; Psych 105.

#### First Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td></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>Psych 105 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective [B,P,Q] (GER)</td>
<td>3 or 4</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>Biological Sciences [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Endorsement</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Students may substitute 3 credits of Biol and 4 credits of Phys S.
2 Credit hours needed for the endorsement are from 30-74, depending on the major.

#### Third Year

**Endorsement** | **Hours** |
| T & L 464 | 3 |
| T & L 465 | 3 |
| T & L 466 | 2 |

#### Second Term | **Hours** |
| T & L 467 | 3 |
| T & L 469 | 3 |
| T & L 470 | 3 |
| Tier III Course [T] (GER) | 3 |

#### Fifth Year

**Endorsement** | **Hours** |
| T & L 415 | 16 |

1 Students may substitute 3 credits of Biol and 4 credits of Phys S.  
2 Credit hours needed for the endorsement are from 30-74, depending on the major.

### Agricultural Education

(60 hours): A 101, EconS 350 or 351; 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 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 or 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; Chem 220, 222, 340, 341, 342, 499 (1-3 cr).
Mathematics</p>

(33 hours): Cpt S 153, Math 171, 172, 220, 273, 303, 315, 330; 360, 398; 320 or 421; 3-hours upper division math elective; Phys 201.

Music</p>

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 in all music courses.

Choral/Instrumental/General (74 hours): Mus 161, 163, 251, 252, 253, 254, 351, 352, 353, 354, 360, 361; 453 or 455; 480, 481, 482, 483, 487, 488, 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, 482, 483, 488, 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 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, 489, 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.

Physics</p>

(66 hours): Astr 345; Biol 106; Chem 105, 106; Hist 381, 382, 483, Soc 430, or UH 410; Math 171, 172, 202, 273, 315; Ph S 430; Phys 201, 202, 302, 303; four from 320, 330, or 341; 380; 410; 499 (4 hours includes observing Phys 101 and 102.)

Science</p>

(46-49 hour core plus endorsement in biology, chemistry, physics or earth science): one 3-4 credit Astronomy course; Chem 105 or 115; 106 or 116; two from Geol 102, 210, 232, 390; Phys 101 or 202; Biol 106, 107; Math 140 or 171; one from Hist 381, 382, 483, MBioS 320, Soc 430, or UH 410; Ph S or Biol 430; Chem 345. Biology Option: Biol 301, 372, 405, 499; Chem 345; MBioS 302, 303. Chemistry Option: Chem 220, 222, 345, 346, 398, 481, 499; MBioS 303, 304. Earth Science Option: Astr 390, 345; Chem 345; Geol 206, 350; 300, 310 or 340; 403, 499 (1-3 hrs); ES/RP 174. Physics Option: Astr 345, Chem 345, Phys 303, 304; or Astr 450; 385, 410, 499 (4 hrs).

Social Studies</p>

(63 hours): One from Anth 101, 198, 203 or 260; Soc 101; one from CES 101, 111, 131, 151, 171, Hist 150, or W St 200; Econ 101 or 102; one from Econ 320, 340, 350, 416 or 470; Hist 101, 102, 110, 111, 422, 480; 12 hours upper division history electives w/advisor approval; Hist 469* or Soc 320*; one from Hist 230, 231, 270, 272, 273 or 275; one from Hist 319, 495, Anth 309 or T & L 487; Pol S 101; one from Pol S 300, 316, 427, 450, 455 or Crm J 302; two from Anth 307, 316, 320, 330, 331, 350, Psych 310, 324, 361, 470; Soc 320, 351, 384 or 430. *Double counts for history or soc elective.

Add-on Endorsements</p>

The following endorsements are available as add-on endorsements only. Individuals may be recommended for endorsement in bilingual education, early childhood education, English as a second language, reading, or special education concurrently with completion of endorsement requirements in elementary education or one of the specific subject endorsements listed above, or as an endorsement added to a currently valid teacher certificate. Contact the Certification Coordinator about the availability of add-on endorsements which may become available subsequent to the publication of this catalog.

Bilingual Education</p>

(18 hours): Tsl 333 or 335, 339, 401, 409, 411 or 414; One or more from Tsl 335 (only if 333 selected above); 410, 412, 472, 473, Anth 350, 355, 450, Engl 354, 443, 458. Demonstrated proficiency in a language other than English.

Early Childhood Education</p>

(22 hours): HD 201; 202 or 102; 302, 341, 432, 449, 482.

English as a Second Language</p>


Reading</p>

(18-20 hours). Courses include Tsl 306, 307, 320, and others selected with approval by literacy faculty in Pullman or urban campuses. Guidelines available in department office.

Special Education</p>

(31 hours): Individuals who hold or will hold endorsement in elementary or early childhood education take SpEd 301, 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 Tsl 306; 320 or 462; 352; Math 251, 252

Description of Courses</p>

Special Education Courses</p>

Sp Ed</p>

301 Education of Exceptional Children

Survey of characteristics of students with disabilities, and overview of programming, legal aspects, and methods of instruction.

Teaching and Learning
401 Practicum in Special Education 3 Prereq either Sp Ed 301, Sp Ed 420 or c//; c// in Sp Ed 490 for 2 credits. Intervention and instructional strategies for managing academic, social, and behavior problems in classroom settings. Credit not granted for both Sp Ed 401 and 501.

402 Assessment and Curriculum for Students with Disabilities 3 Prereq either Sp Ed 301, Sp Ed 420 or c//; c// in Sp Ed 490 for 2 credits. Methods of individual and group, formal and informal assessment for students with disabilities. Credit not granted for both Sp Ed 402 and 502.

403 Secondary Education for Students with Disabilities 3 Prereq either Sp Ed 301, Sp Ed 420 or c//. Overview of instruction and intervention strategies for secondary students with disabilities; assessment, and curriculum/program development. Credit not granted for both Sp Ed 403 and 503.

404 Professional Skills in Special Education 3 Prereq either Sp Ed 301, Sp Ed 420 or c//. Legal aspects of special education, individualized education plans, roles and responsibilities of teachers, collaboration techniques, service delivery/design, and supervision of paraprofessionals. Credit not granted for both Sp Ed 404 and 504.

409 Early Childhood Special Education 3 Prereq either Sp Ed 301, Sp Ed 420 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. Designed for preservice/service 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 either Sp Ed 301 or Sp Ed 420. 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.

440 Methods in Intensive Educational Supports 3 Prereq either Sp Ed 301, Sp Ed 420 or c//. 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 either Sp Ed 301, Sp Ed 420 or c//. 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 either Sp Ed 301, Sp Ed 420/520 or c//; 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 Prereq either Sp Ed 301, Sp Ed 420/520 or c//; c// in Sp Ed 590 for 2 credits. 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 Prereq either Sp Ed 301, Sp Ed 420/520 or c//. 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 Prereq either Sp Ed 301, Sp Ed 420/520 or c//. 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 Prereq either Sp Ed 301, Sp Ed 420/520 or c//. 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 either Sp Ed 401/501 or c//. 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 Prereq either Sp Ed 301, Sp Ed 420/520 or c//. Graduate-level counterpart of Sp Ed 440; additional requirements. Credit not granted for both Sp Ed 440 and 540.

571 Prevention and Remediaion of Reading Disabilities 3 Prereq either Sp Ed 301, Sp Ed 420/520 or c//. Theoretical concepts, research, and strategies of reading assessment and instruction for students with disabilities.

589 Seminar in Disability Studies 3 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.

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. Reflective inquiry about human learning, development, diversity, and individual differences, examination of implications for teaching and education reform.

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 T&L 301. For candidates admitted to teacher preparation. 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 T&L 301. For candidates admitted to teacher preparation. Attitudes, knowledge, and skills needed for successful teaching of reading and language arts.

307 Survey of Children’s Literature 2 Prereq T & L 301. For candidates admitted to teacher preparation. Types, values, selection of children’s literature; role of teacher in facilitating children’s experiences with books.


319 Literacy Practicum 1 (0-3) Practicum for students serving as literacy tutors in schools and agencies; methodologies, at-risk issues and community-school partnerships. S, F grading.

321 [T & L 320] Early Literacy 3 Prereq T&L 301. For candidates admitted to teacher preparation. Designed for pre-service teachers to link assessment and instruction and guide the development of early reading and writing skills.

322 [M] Reading and Writing in Grades 4 - 8 3 Prereq T&L 301. For candidates admitted to teacher preparation. Designed for pre-service teachers to link assessment and instruction and assist upper-elementary students to read and write more effectively.

330 Diversity in Schools and Society 2 Prereq T & L 301. For candidates admitted to teacher preparation. Gender, linguistic, 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 Prereq T & L 333 or 413. Selected topics dealing with linguistic diversity, cross-cultural communication, language development and language use.

352 Teaching Elementary Mathematics 3 Prereq Math 251; Math 252; T & L 301. For candidates admitted to teacher preparation. 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 12 credits [B] [P] [Q]; T & L 301. For candidates admitted to teacher preparation. Teaching methods, materials, and content in elementary and middle school science.

385 Teaching Elementary Social Studies 3 Prereq T & L 301. For candidates admitted to teacher preparation. Teaching methods, materials, and content in elementary and middle school social studies.

390 Integrating Fine Arts into K-8 Curriculum 3 Prereq T & L 301. For candidates admitted to teacher preparation. Integrating the range of fine arts (art, music, dance, drama) into K-8 curriculum; designed for preservice and inservice general K-8 teachers.

401 Practicum in Bilingual/ESL Education 2 (0-6) May be repeated for credit; cumulative maximum 6 hours. Prereq either T & L 333, T & L 335, or graduate standing. Work with students from diverse cultural and linguistic backgrounds in an educational setting implementing theoretical foundations, skills, and strategies acquired from ESL coursework.

402 Instructional Practicum I V 1 (0-3) to 6 (0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq T & L 301. For candidates admitted to teacher preparation. Application of educational theories and approaches learned during methods Block I.

403 Social Foundations of Elementary Curriculum 2 Prereq T & L 301. For candidates admitted to teacher preparation. The school; historical, and philosophical foundations of education; 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. Application of educational theories and approaches learned during methods Block II.

409 Curriculum and Assessment for Bilingual/ESL Education 3 Prereq T & L 333, T & L 335 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 Areas 3 Prereq either T & L 333, T & L 335, T & L 339, T & L 410, T & L 413, or graduate standing. Approaches, methods, and materials across content areas for the bilingual classroom.

412 Language and Cultural Factors in Mathematics 3 Prereq T & L 352. For candidates admitted to teacher preparation and experienced teachers. 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. Introduction to teaching ESL students for K-8 teachers.

414 Methods and Materials for Bilingual/ESL Education 3 Prereq T & L 333. For candidates admitted to teacher preparation and experienced teachers. 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 major and passing score on the WEST-E content examination. To begin student teaching the candidate must have paid certification fees and have a currently valid teacher certificate application with character and fitness supplement on file; completed with a C or better all course work for the teacher certificate; received fingerprinting clearance from Washington State Patrol, FBI, and Office of Professional Practices; earned 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 Exploration of conceptual models for thinking about mathematical ideas; activities and discussions of mathematical thinking and instruction.

431 Innovations in Reading 2 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 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 (1-2) Prereq T & L 301. For candidates admitted to teacher preparation. Consideration of all technologies in K-8 schools, applications for their use, some production techniques and instructional methodologies.

452 Content Area Reading and Study Skills Practicum V 1-3 May be repeated for credit; cumulative maximum 3 hours. For candidates admitted to teacher preparation and experienced teachers. Development and delivery of vocabulary, comprehension, and study skills.

462 Corrective Reading in the Classroom 2 For candidates admitted to teacher preparation and experienced teachers. Investigation, formulation, application of informal and formal assessment for classroom instruction; specific needs of children with reading difficulties.

464 (302/303) Curriculum, Instruction and Content Literacy Methods 3 Prereq T & L 300, 301, 317; c// T & L 465, 466; admission to the teacher preparation program. Development of curriculum, instruction and content literacy materials and methods for teaching in the secondary school classroom.


466 (446) Secondary Methods of Educational Technology 2 (1-2) Prereq T & L 300, 301, 317; c// T & L 464, 465; admission to the teacher preparation program. Integration of technologies for teaching and learning within the 9-12 classrooms; hands-on development of technology enhanced activities and lessons.

467 (328) [M] Diversity, Classroom Life and Management 3 Prereq T & L 464, 465, 466; c// T & L 468, 469; admission to the teacher preparation program. Diversity, community building and classroom management and their interrelationships in secondary schools.

469 (400) Advanced Practicum 2 Prereq T & L 464, 465, 466; c// EdPsy 468, T & L 467; admission to the teacher preparation program. Field experience with classroom observation and teaching prior to student teaching; weekly seminar included. S, F grading.

470 ESL/Special Education Methods for Secondary Teachers 3 Prereq T & L 300, 301, 317; T & L 464, 466 or c//; admission to the teacher preparation program. Methods for teaching second language learners and students with special needs in the secondary school classroom.

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 Fluency in a language other than English required. Theory and methods of teaching foreign languages in the elementary schools.

480 Multicultural Education in a Global Society 3 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 T&L 301. For candidates admitted to teacher preparation. 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 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). May be repeated for credit; cumulative maximum 8 hours. Prereq certified education major; T & L 402; T & L 405. 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. 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.

503 ESL Methods and Material for Secondary Content Teachers 2 Research-based ESL strategies and methods for pre-service and secondary content area teachers.

505 ESL Methods for General Educators (K-8) 2 Research-based ESL strategies and methods for pre-service and experienced teachers.

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. 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 549. Research in curriculum development for and assessment of language minority students.

510 Theoretical Foundations of Bilingual/ESL Education 3 Prereq either T & L 333, T & L 335, or T & L 413. 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 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 Prereq T & L 352. For pre-service and experienced teachers. 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 For experienced teachers. Curriculum patterns and recent research regarding instruction and materials in the contemporary middle school.

514 Methods and Materials for Bilingual/ESL Education 3 Prereq T & L 510 or T & L 549. For pre-service and experienced teachers. Graduate-level counterpart of T & L 414; additional requirements. Credit not granted for both T & L 414 and 512.

515 The Education of Cultural and Linguistic Minority Students 3 Issues in the education of language minority students.

516 Advanced Study in Computer-Assisted Language Learning 3 Prereq T & L 510 or T & L 549. Research, theory, and practice in computer-assisted language learning.

517 Educational Technology in K-8 Schools 2 (1-2) Prereq admission to MIT program. Technology standards for teachers, technology use in schools, production techniques and instructional methods.

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. Cooperative course taught jointly by WSU and UI (EDE 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 either T & L 515 or by permission. 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 3 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 Graduate-level counterpart of T & L 433; additional requirements. Credit not granted for both T & L 433 and 532.

533 Gender, Power and Education 3 Interdisciplinary focus on the relationships among gender, power and education.

534 Seminar in Language, Literacy, and Culture 3 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 The most recent developments in language arts instruction for pre-service and in-service teachers K-12.

540 Elementary School Social Studies 3 For candidates admitted to graduate teacher preparation and experienced teachers. Elementary structures of various social sciences; research findings related to instruction; classroom applications and materials.
541 Pre-Assessment Seminar for Professional Certification V 1-3 May be repeated for credit; cumulative maximum 6 hours. For candidates admitted to a Professional Certificate Program. Participants learn the elements of excellence in professional practice with a focus on educational research. Provides an opportunity to develop a professional growth plan, reflect on personal practice, and begin gathering evidence from one’s professional work to demonstrate a positive impact on student learning.

542 Professional Education Seminar V 1-3 May be repeated for credit; cumulative maximum of 6 hours. Analysis of contemporary and/or classic educational issues.

543 Culminating Seminar for Professional Certification 2 Prereq T & L 541. The final step in ProCert; candidates must have completed T & L 541 and 5 semester credits of learning experiences approved by the Professional Growth Team.

544 Advanced Children’s Literature 3 Trends, issues, and research in children’s literature.

545 Oral Language Development: Roots of Literacy 3 Research on children’s oral language development; applications to elementary school reading and writing.

546 Teaching Writing in the Elementary School 3 Theory and research relevant to instructional approaches and practices for teaching writing in elementary schools.

547 Teaching Folk Literature to Children and Adolescents 3 Folk literature as a genre in child and adolescent literature; curriculum applications; reading, language development, social studies, creative expression.

548 Teaching Adolescent Literature 3 Evaluating, selecting, and using literature for middle school and teenage students.

549 Communicating in a Multilingual Society 3 Prereq T & L 333, T & L 335, T & L 413 or graduate standing. Study of language in social and educational context and its relation to cultural and linguistic diversity.

551 Psychology of Reading V 2 or 3 Psychological, perceptual, motivational, developmental and physiological aspects of reading.

552 Literacy Development 1 3 For candidates admitted to graduate teacher preparation. 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; T & L 321; T & L 322; T & L 531. Evaluation techniques and instructional practices for impacting the reading achievement of K-8 students.

554 Seminar in Literacy Development 3 May be repeated for credit; cumulative maximum 6 hours. Current and historical research in reading/language arts, infantcy through college and adult years; papers presented by faculty, invited speakers, and students.

556 Literacy Development II 3 Prereq for candidates admitted to graduate teacher preparation. Review of current research and approaches to instruction in the development of literacy in elementary and middle grades.

558 Improving Comprehension through Literature 3 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. Recent developments in research on teaching; both quantitative and qualitative research methodologies emphasized.

561 Elementary School Mathematics 3 Research on curriculum and instruction issues in elementary school mathematics.


563 Seminar in Precollege Mathematics Education 3 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 For candidates admitted to graduate teacher preparation. Introduction to research, theory, and methods of teaching K-8 mathematics; emphasis on integrating theory and practice.

565 Introduction to Scholarly Inquiry 1 Prereq graduate standing. Introduction to the Ed.M. program including the scholarship and research requirements and the role of students and action research.

566 Democratic Education 3 Prereq graduate standing. Rationale and skill to assist teachers in making classrooms more democratic.

571 Elementary School Science 3 Prereq for candidates admitted to graduate teacher preparation. Theories and research underlying science programs with classroom implications.

572 Elementary School Science Methods 3 For candidates admitted to graduate teacher preparation. Theoretical base to design and implement appropriate standards-based elementary science instruction.

573 Children’s Literature and Hands-On Science 3 Prereq for candidates admitted to graduate teacher preparation. 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 for candidates admitted to graduate teacher preparation. Implications of cultural and individual diversity for understanding western scientific and mathematical thought; an activity-based, educational perspective.

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.

583 Problem Solving in Elementary and Middle Level Education 3 For candidates admitted to graduate teacher preparation. Integration of knowledge and skills to address complex cases in teaching and learning.

586 Issues in At-risk Education V 2 or 3 School and community resources to assist at-risk students and families.

588 Action Research: Teachers as Research 3 Theoretical concepts, research, issues, models, and strategies for implementation of action research.

589 Race, Identity and Representation in Education 3 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 Integrating Fine Arts into K-8 Curriculum 2 Integrating Fine Arts (art, music, dance, drama) into K-8 curriculum; designed for pre-service MIT. S, F grading.


596 Topics in In-Service Education V 1-3 (1-3) May be repeated for credit; cumulative maximum 12 hours. Prereq graduate standing or permission of instructor. 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. New developments and applications on selected in-service and staff development topics. 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.
Theatre Arts and Drama

libarts.wsu.edu/theatre
Daggy 320
509-335-7447

Professor and Program Director, L. J. Harris; Professor, T. Converse; Instructors P. Gooden-Young, S. Brown, D. Bourland, J. Carlson, B. Gonzales.

The Theatre Arts and Drama Program provides theatre students with a foundation of studies in performance, 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 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  Hours
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Social Sciences [S, K] (GER) 3
Theat 145 3
Theat 260 3

Second Term  Hours
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Math Proficiency [N] (GER) 3 or 4
Theat 163 3
Theat 360 3

Second Year

First Term  Hours
Intercultural Studies [I,G,K] (GER) 3
Physical Sciences [P] (GER) 4
Social Sciences [S,K] (GER) 3
Theat 313 3
Theat 450 or 462 3

Second Term  Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S, K] (GER) 3
Biological Sciences [B] (GER) 4
Shakespeare [H] (GER) recommended 3
Theat 363 3
Theat 496 1
Complete Writing Portfolio

Third Year

First Term  Hours
Science Elective [B,P,Q] (GER) 4
Theat 261 3
Theat 362 3
Theat 365 3
Theat 496 1

Second Term  Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S, K] (GER) 3
Theat 361 3
Theat 366 3
Theat 496 1
Electives 5

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 3
Theat 497 3
Elective 2

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.

Certification Requirements

To certify as a theatre major a student must have completed 24 semester hours with a minimum 2.40 cumulative GPA and two courses from Theat 145, 160, 163, 260, and 261. 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
GenEd 110 [A] (GER) 3
Mus 203 or 303 2
Mus 251 3
Mus 252 1
Theat 260 3

Second Year  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
Music Elective [B,P,Q] (GER) 4

Third Year

First Term  Hours
Dance 210 1
Math Proficiency [N] (GER) 3 or 4
Mus 181 1
Mus 203 or 303 2
Physical Sciences [P] (GER) 4
Theat 261 3

Second Term  Hours
Biological Sciences [B] (GER) 4
Choral Ensemble 1
Dance 211 1
Mus 182 1
Mus 203 or 303 2
Theat 361 3
Theat 363 or 364 3
Complete Writing Portfolio

Fourth Year

First Term  Hours
Arts & Humanities [H,G] (GER) 3
Dance 310 1
Mus 203 or 303 2
Mus 428 1
PEACT 145 or 146 1
Theat 366 [M] (GER) 3
Theat 496 1

Second Term  Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
Dance 311 1
Mus 203 or 303 2
Mus 428 1
PEACT 145 or 146 1
Theat 366 [M] (GER) 3
Theat 496 1
Minors

Theatre Minor

A theatre minor requires 17 hours of which a minimum of 12 must be at the 300-400 level. Required core courses include Theat 260 or 261, 163 or 363, 365 or 366; 2 or 3 hours in 496; and two additional courses from Theat 145, 160, 163, 260, 261, 313, 360, 361, 362, 363, 364, 365, 366, 367, 450, 461, 462, 465, 467 or 480.

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 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 For directors, designers, performers. Exploration of various methods available for analyzing stage and film scripts. E-mail and Web access required.

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.

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.

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. Individualized 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; 365 or 366. Off-campus experience with Seattle area professional theatres in all aspects of production excluding performance. S, F grading.

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.

497 Exit Project 3 (0-9) Prereq senior standing; certified theatre major. End of program assessment; students must define project and have it approved by the supervisor. S, F grading.

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

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.
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.

DOCTOR OF VETERINARY MEDICINE PROGRAM REQUIREMENTS

A minimum of seven years is required to obtain the degree of Doctor of Veterinary Medicine (DVM). 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); 33 hours including zoology or general biology, inorganic and organic chemistry, biochemistry, physics, mathematics, genetics, statistics, and electives.

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 B.S. in pre-veterinary medicine.

Students taking pre-veterinary course work may declare a major in any subject, but are encouraged to major in animal science, biology, chemistry, microbiology, wildlife, or zoology.

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

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

ADMISSION TO THE DVM PROGRAM

A student seeking to enter the professional DVM program 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. Unsuccessful applicants 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:

* To qualified students coming from homes in the states of Washington and Idaho
* To qualified students certified and financed by the Western Interstate Commission for Higher Education (WICHE) Compact states
* To all other qualified students

BACHELOR OF SCIENCE DEGREE IN VETERINARY SCIENCE

The Bachelor of Science degree in Veterinary Science is available only to students who have been admitted to the professional DVM 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 and includes completion of the general education requirements listed in this catalog, as well as completion of 60 additional hours of acceptable university credit, 34 hours of which must be 500-level or above in the professional curriculum of the College of Veterinary Medicine.

HONORS PROGRAM 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 number of positions is limited.

Joint Program in Animal Science and Veterinary Medicine - See Department of Animal Sciences.

Schedules of Studies

Students must complete 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.

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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### Description of Courses

**Veterinary Medicine Courses**

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#### 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.

1. **Description of Courses**

2. **Veterinary Medicine Courses**

   - **350 Skeletal Preparation** 1 May be repeated for credit; cumulative maximum 3 hours. Prereq V M 511 P. Technique of skeletal preparation is mastered by undertaking and completing project. Skeleton becomes property of student. S, M, F grading.

   - **394 Veterinary Medicine as a Career** 1 Prereq junior standing; cumulative gpa of 3.00 or higher; MBioS 303 or c/. Current issues in veterinary medicine; ethical, financial and personal aspects of the veterinary practice. S, F grading.

   - **499 P Special Problems** V 1-4 May be repeated for credit. Prereq DVM program. S, M, F grading.

   - **500 P Success in Veterinary Medicine** 1 Active participation in activities designed to enhance personal growth, character development and leadership skills. S, M, F grading.

   - **501 P International Veterinary Medicine** 1 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; V M 502P; V M 503P; veterinary medicine student. 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 veterinary medicine student. 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 Prereq veterinary medicine student. Philosophy and history of methodological, ethical and political issues relevant to biomedical research using selected monographs and essays. May be repeated for credit; cumulative maximum 3 hours. S, M, F grading.

   - **510 P Veterinary Microscopic Anatomy** 5 (3-6) Prereq first year in veterinary medicine or graduate student. Microscopic functional morphology of the cell, tissues, and selected organ systems of domestic animals. S, M, F grading.

   - **511 P Veterinary Anatomy I** 5 (0-15) Prereq veterinary medicine student 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** 3 (0-9) Prereq V M 511P. Detailed macroscopic functional morphology of domestic animals. S, M, F grading.

   - **513 P Veterinary Cell Physiology** 4 Prereq veterinary medicine student 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.


   - **520 P Veterinary Physiology** 5 (4-3) Prereq V M 510P. Physiology of domestic animals. Cooperative course taught by WSU, open to UI students (V S 518). S, M, F grading.

   - **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 veterinary medicine student. 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 veterinary medicine student. 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 veterinary medicine student. 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 veterinary medicine student or graduate student in veterinary science. Immunology for the professional veterinary student. S, M, F grading.

   - **535 P Veterinary Virology** 3 Prereq veterinary medicine student or graduate student in veterinary science. Virology for the professional veterinary student. S, M, F grading.

   - **536 P Veterinary Bacteriology** 4 (3-3) Prereq veterinary medicine student. Bacteria that produce disease in animals. S, M, F grading.

   - **537 P Veterinary Parasitology** 4 (3-3) Prereq veterinary medicine student. 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 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 veterinary medicine student. Preparation for veterinary students in public health and food hygiene. S, M, F grading.

608 P Small Animal Orthopedic Surgery V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Required clinical experience with the small animal orthopedic surgery service in the small animal clinic of the Veterinary Medicine Hospital. S, M, F grading.

609 P Small Animal Clinical Neurology V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Required clinical experience with the small animal neurology service in the small animal clinic of the Veterinary Medicine Hospital. S, M, F grading.

611 P Small Animal Orthopedic Surgery Elective V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Elective clinical experience with the Small Animal Orthopedic Surgery Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, M, F grading.

612 P Small Animal Soft Tissue Surgery Elective V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Elective clinical experience with the Small Animal Soft Tissue Surgery Service in the Small Animal Clinic of the Veterinary Teaching Hospital. S, M, F grading.

613 P Small Animal Referral Medicine Elective V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Elective clinical experience with the Small Animal Medicine Referral Practice Service in the Small Animal Clinic of the Veterinary Teaching Hospital. S, M, F grading.

614 P Small Animal Community Practice Elective V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Elective clinical experience with the Small Animal Medicine Local Practice Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, M, F grading.

615 P Small Animal Medicine - Speciality Practice Elective V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Elective clinical experience with the Small Animal Medicine Exotic Practice Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, M, 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 veterinary medicine student. Elective clinical experience with the Small Animal Medicine Exotic Practice Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, M, F grading.

617 P Small Animal Clinical Neurology Elective 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, M, F grading.

618 P Veterinary Dentistry V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq veterinary medicine student. Clinical experience, laboratory exercises, and instructional sessions to increase proficiency in clinical dentistry. S, M, F grading.


620 P Clinical Oncology V 1 (0-3) to 4 (0-12) May be repeated for credit, cumulative maximum 4 hours. Prereq veterinary medicine student. Diagnosing, staging and treating the veterinary cancer patient. S, M, F grading.

621 P Clinical Cardiology V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Basics in physical assessment, diagnosis and treatment of common cardiac disorders. S, M, F grading.

628 P Equine Surgery Clinical Rotation V 2 V 1 (0-6) to 6 (0-18) Prereq veterinary medicine student. Required rotation through the Equine Surgery Services of the Veterinary Teaching Hospital. S, M, F grading.

629 P Equine Medicine Clinical Rotation V 2 (0-6) to 6 (0-18) Prereq veterinary medicine student. Required rotation through the Equine Medicine Services of the Veterinary Teaching Hospital. S, M, F grading.

630 P Agricultural Animal Clinical Rotation V 2 (0-6) to 6 (0-18) Prereq veterinary medicine student. Required rotation for Agricultural Animal Medical, Surgical, and Ambulatory Service of the Veterinary Teaching Hospital. S, M, F grading.

631 P Population Medicine V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. 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 veterinary medicine student. Elective clinical theriogenology subjects in large animals. S, M, 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 veterinary medicine student. Elective clinical subjects in food animal diseases and herd health/preventive medicine. S, M, 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 veterinary medicine student. Field research on the epidemiology of a selected disease problem including project design, data collection and completion of a paper. S, M, F grading.

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 veterinary medicine student. Preventive medicine and management practices related to control of animal diseases at Caine Center, UI, Caldwell Idaho. S, M, F grading.

636 P Equine Medicine Elective V 1 (0-3) to 4 (0-12) May be repeated for credit, cumulative maximum 8 hours. Prereq veterinary medicine student. Elective clinical experience with the Equine Medicine Service in the Large Animal Clinic of the Veterinary Teaching Hospital. S, M, 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. S, M, F grading.

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. S, M, F grading.

639 P Small Animal Theriogenology V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Hands-on experience in diagnosis, treatment, prevention and management of disorders related to canine and feline reproduction. S, M, F grading.

650 P Anesthesia Case Management V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Required rotation through the Clinical Anesthesia Service of the Small Animal Clinic and Large Animal Clinic of the Veterinary Teaching Hospital. S, M, 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 veterinary medicine student. Laboratory exercises and instructional sessions to increase proficiency in clinical diagnostic radiology. S, M, F grading.

653 P Imaging Services Elective V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Laboratory exercises and instructional sessions to increase proficiency in clinical diagnostic radiology. S, M, F grading.

655 P Diagnostics V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Advanced study in diagnostic pathology, toxicology, and microbiology. S, M, F grading.

657 P Clinical Pathology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq veterinary medicine student. Clinical laboratory diagnosis and interpretation. S, M, F grading.

673 P Small Animal Critical Care V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Elective clinical experience, didactic topic discussions, and instructional sessions in small animal critical care. S, M, F grading.
674 P Small Animal Intensive Care V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Required rotation for all students through the small animal intensive care unit. S, M, F grading.

675 P Emergency and Critical Care V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Required rotation for all students through the large animal Emergency and Critical Care Services, Veterinary Teaching Hospital. S, M, 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 veterinary medicine student; enrollment in research track program or approved for research career track. Individualized research project. S, M, F grading.

679 P Externship V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq veterinary medicine student. Theory of practice of veterinary medicine in a non-university setting. S, M, F grading.

681 P Guided Preceptorship V 1 (0-3) to 4 (0-12) Prereq veterinary medicine student. Guided preceptorship in an accepted extramural clinical or laboratory setting. S, M, F grading.

682 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 veterinary medicine student. Elective experience in government, corporate, and zoological veterinary medicine arranged through nationwide matching program. S, M, F grading.

684 P Avian Medicine (0-12) Prereq veterinary medicine student. Laboratory diagnosis and pathology of avian (pet bird and commercial fowl) diseases. S, M, F grading.

686 P Advanced Clinical Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq veterinary medicine student. Advanced clinical subjects developed as courses for fourth year veterinary students. S, M, F grading.

**Department of Veterinary and Comparative Anatomy, Pharmacology, and Physiology**

[www.vetmed.wsu.edu/depts-vcapp](http://www.vetmed.wsu.edu/depts-vcapp)

Wegner 205

509-335-0986

Professor and Chair, B. K. Slinker; Professor and Associate Chair; S. Simasko; Professors, K. B. Campbell, H. L. Granzier, J. W. Harding, J. M. Krueger, R. Quock, M. H. Ratzlaff, R. C. Ritter, W. S. Ritter, B. A. Sorg, C. S. Zamora; Associate Professors, G. A. Burns, L. Churchill, R. Newberry, C. M. Ulibarri, M. Varnum; Assistant Professors, M. Chandra, H. Jansen, D. Lin, D. A. Schneider, L. Sprunger, A. Vasavada; Clinical Assistant Professors, B. Gillespie, P. D. Wilson.

**Description of Courses**

**Veterinary Anatomy Courses**


413 Advanced Anatomy 3 (1-6) May be repeated for credit; cumulative maximum 6 hours. Prereq V M 512P. Microscopic and gross anatomy of selected organ systems.

499 Special Problems V 1-4 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. 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 Design and Analysis of Biomedical Experiments 4 Prereq Math 107; Stat 212 or higher. Design of experiments with application to clinical and basic biomedical research; choosing, applying, and evaluating appropriate data analysis methods.

529 Integrative Neuroscience 3 Prereq graduate standing; biochemistry course. Same as Neuro 529.

531 Neurosciences Laboratory Rotation 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Prereq graduate standing. Same as Neuro 531. 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 V Ph 541. 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 MbioS 303 or c//; MbioS 513. Physiochemical mechanisms of cellular function.

557 Advanced Mammalian Physiology 4 Prereq V Ph 555. Function and control of mammalian organ systems.

590 Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Same as Neuro 590. S, F grading.

592 Research Seminar 2 May be repeated for credit; cumulative maximum 6 hours. Same as Neuro 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.

**Department of Veterinary Clinical Sciences**

[www.vetmed.wsu.edu/depts-vcs](http://www.vetmed.wsu.edu/depts-vcs)

ADBP 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 Medical and Surgical Problems in the Horse 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 fourth 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. Prereq DVM student. S, F grading.
574 Cardiology Special Topics 1 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM or graduate standing. Clinical cardiology topics and special problems; current medical or interventional information.

575 Equine House Officer Rounds 1 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM or graduate standing. Weekly small group discussion of problems in equine medicine, surgery or reproductive medicine using current or recent case material from the Veterinary Teaching Hospital.

576 Introduction to Veterinary Clinical Research 2 Prereq DVM or graduate standing. Designing, executing, analyzing and reporting clinical research fundamental to practicing evidence-based medicine.

577 Applied Veterinary Physiology 1 2 Prereq DVM. Review of physiology as it relates to clinical veterinary medicine and specific diseases of animals through analysis of recent medical literature.

578 Applied Veterinary Physiology II 2 Prereq V MS 577; DVM. Continuation of V MS 577.

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.

580 Advanced Clinical Pathology 1 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM or graduate standing. Weekly small group discussion of laboratory and cytotologic abnormalities in recent cases from the Veterinary Teaching Hospital.

582 Seminar in Clinical Medicine 1 May be repeated for credit. Prereq DVM degree.

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.

586 Diagnostic Ultrasound 2 Prereq DMV or graduate standing. Diagnostic ultrasound and its application to clinical medicine in large and small animals.

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 387).

589 Advanced Clinical Veterinary Medicine V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Special topics.

590 Special Topics in Equine Medicine 1 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM or graduate standing. Weekly small group discussion of problems in equine medicine, surgery or reproductive medicine using current or recent case material from the Veterinary Teaching Hospital.

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.

Description of Courses

Veterinary Medicine Courses

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

535 Advanced Readings in Veterinary Microbiology 1 (0-3) May be repeated for credit. 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.

536 Diagnostic Microbiologic Conference I 1 May be repeated for credit. Prereq graduate student in veterinary science. Identification of animal pathogens in clinical material.

541 Advanced Diagnostic Microbiology 1 (0-3) May be repeated for credit; cumulative maximum 8 hours. Prereq V M 534P, 535P, 536P. Advanced diagnostic microscopy, serology, microbiology laboratory for performing and interpreting virologic, serologic, and related tests 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.

700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

700 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD 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.

Vet Pathology Courses

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 pathophysiologic and infectious disease, laboratory diagnosis, zoonoses, and food safety learned through the development of multistep teaching cases. S, F grading.
Women's Studies

Department of Women's Studies

libarts.wsu.edu/women

Wilson 10
509-335-1794

Professor and Department Chair, N. Sturgeon; Associate Professor, L. Heidemreich; Assistant Professor, N. Shahnai; Clinical Instructors, J. Meath, M. Sciachitano.

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 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

Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Science Elective (GER) 4
W St 200 [S,D] (GER) 3

Second Term

Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
GenEd 111 [A] (GER) 3
Social Sciences [S,K] (GER) 3
W St Humanities Elective 3

Second Year

First Term

Communication Proficiency [C,W] (GER) 3
Math Proficiency [N] (GER) 3
W St 300 [S] (GER) 3
W St Humanities Elective 3
Elective 3

Second Term

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Intercultural Studies [I,G,K] (GER) 3
W St 332 [I] (GER) 3
W St Social Science Electives 6
Prepare for Women's Studies Internship (W St 410)

Third Year

First Term

300-400-level W St Elective 3
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
Physical Sciences [P] (GER) 4
W St 484 [T,D] (GER) 3
Elective 3

Second Term

Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
W St 410 3
W St Elective 3
300-400-level Electives 6

Fourth Year

First Term

300-400-level W St Elective 3
W St 481 [M] or 485 3
W St Elective 3
300-400-level Electives 6

Second Term

300-400-level Electives 9
Tier III Course [T] (GER) 3
Elective 3

Minors

Women's Studies

The minor requires a minimum of 16 credit hours, of which half must be upper-division. Coursework must include W St 200, 300, and either 481 or 485.

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] Gender and Power: Introduction to Women's Studies 3 Analysis of gender and power in contemporary society from perspectives of different racial, ethnic and socioeconomic groups.
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.
220 [S,D] Women, Science, and Culture 3 Analysis of gender, culture, science, and technology through examination of real world issues and hands-on investigation.
230 Human Sexuality 3 Prereq Psych 105. Same as Psych 230.
235 [H,D] African American History 3 Same as CES 235.
255 [S,D] Chicano/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. 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.

317 Gay and Lesbian Literature 3 Same as Engl 317.

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 Prereq Psych 105. 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 “third world” women’s films.

350 [S] European Women's History, 1400-1800 3 Same as Hist 350.


369 Queer Identities in Contemporary Cultures 3 Prereq CES 101 or WSt 200. Provides a structural critique of heteronormativity and examines L/G/B/T challenges to dominant sex and gender issues in the US.


380 [S] History of Medicine 3 Same as Hist 380.

382 Modern American Literature 3 Prereq Engl 302. Same as Engl 482.


391 Seminar in Women's Studies 3 Prereq W St 200. Analysis of the intersection of gender, race, class, and sexuality through popular cultural texts/film, television, art, literature, performance.

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.

407 [T] Biology of Women 3 Prereq Biol 102 or 106; Biol 107 or Chem 105; Chem 106; junior standing; completion of one Tier I and two Tier II courses. Same as Biol 407.

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.

409 [T] Women Writers in the American West 3 Prereq completion of one Tier I and three Tier II courses. Same as Engl 409.

410 Internship V 1-12 May be repeated for credit; cumulative maximum 12 hours. Prereq W St 200; 300 or 481 with B or better, by interview only. Supervised experience in approved campus or community agencies or projects focusing on women's issues.


421 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 Prereq junior standing, completion of one Tier I and three Tier II courses. 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 Prereq Com 101 or W St 200. 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.


499 Special Problems V 1-4 May be repeated for credit. 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 Biochemistry I 3 For WWAMI students only. Focus on genome information, gene functions, genetic information stored, mobilized, and used, regulation, molecular medicine, genomics therapies. (Fall only) S, F grading.

516 P Systems of Human Behavior I 1 For WWAMI students only. Physical and psychological development of the individual; conceptual systems and models of behavior related to medicine. S, F grading.

520 P Molecular and Cellular Basis of Disease 4 For WWAMI students only. Cell and tissue response to injury mechanisms of cell injury, inflammatory process, immunology, immunopathology, thrombosis, growth, neoplasia, and clinicopathological correlation. (Spring only) 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 Introduction to Immunology 2 For WWAMI students only. Principles of immunology and their relationship to human medicine. S, F grading.

524 P Biochemistry II 2 For WWAMI students only. Continuation of Med S 514P. 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 Anatomy and Embryology II 4 (3-3) Gross anatomy; focus on head and neck anatomy, including skull, pharynx, and larynx; audition and balance. Continuation of Med S 511P. 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.

590 P Introduction to Critical Reading and Evaluation of Medical Literature 1 Prereq WWAMI student. Medical literature for the purpose of primary research, diagnosis and therapeutic and preventative intervention. Cooperative course taught by UI (Med S 590); open to WSU students. S, F grading.

600 P Special Projects or Independent Study V 1-6 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

The WSU faculty listing may be found online at catalog.wsu.edu.
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).
- **Foreign Language:** Two years of the same foreign language, Native American language, or American Sign language.
- **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 a 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 GEQs 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; general and subject College Level Examination Program (CLEP); and the Washington Pre-College Test Program (WPCT).

(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 online at http://www.wsu.edu/future-students/admission/advanced-placement.html.

(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 scores at the 50th percentile or above. Credit will be granted for the comparable Washington State University course, or elective credit may be granted. Not more than 6 semester hours of credit will be granted for each examination.

(c) Challenge Examinations. Matriculated students currently registered at Washington State University, with permission of their advisor or department chairperson and of the chairperson of the department offering the course, may take challenge examinations for university credit in 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 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 $261 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) Dantes Credit: Elective credit for DANTES 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 on 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 take examinations or consume the instructor’s time. Attendance in class beyond three 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 Standing—30 to 59 1/2 hours; Junior Standing—60 to 89 1/2 hours; Senior Standing—90 and above hours.

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, 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 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 may be 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.

38. An undergraduate (undeclared or certified major) who at the end of any one semester has failed to maintain a 2.00 semester and/or cumulative grade point average is considered academically deficient. The student must complete an application and an interview through the Student Advising and Learning Center, on the Pullman campus, the Distance Degree Program or designated office on other campuses. Reinstatement will be considered based on the application and interview. A certified major or who has been interviewed and reinstated may be decertified by the department.

39. An undergraduate student who, at the end of any two semesters at WSU, has failed to maintain a 2.00 semester or 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. All students seeking reinstatement must provide, as part of the application for readmission, documentation that demonstrates improved academic performance at the college level and/or a readiness for academic success at WSU. All academic coursework during the time away from WSU is required to be documented and transcripts submitted. Dismissed students who apply for reinstatement after one semester will be granted reinstatement only when unusual extenuating circumstances are present. In all cases, written documentation to support the application is required.

41. An undergraduate student who has been reinstated after becoming deficient under Rule 38 or 39 will be on academic probation. The specific conditions of enrollment for students who are on official probation will be determined by the interviewer or 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 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 Review Board in Student Advising and Learning Center on the Pullman campus, the Distance Degree Program or designated office on other campuses.

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 identified in its strategic plan. Under the terms of enrollment, students acknowledge the University's authority to take disciplinary action for conduct on or off university property that is detrimental to the University's core values. Students who violate the university Standards of Conduct are subject to discipline, which may include temporary or permanent removal from the University. (See the Standards of Conduct for Students.)

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 undergraduate 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.

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

Class 5 (except those working on 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 pass, fail are counted toward assistancehip minimum hour requirements. There is no limit on the number of hours a graduate student may take on a pass, fail basis.

**Allowances for transfer students are as follows:**

Transfer status upon entering WSU—Pass, fail Allotment
- 1-44 credits six courses
- 45-59 credits five courses
- 60-74 credits four courses
- 75-89 credits three courses
- 90 and above credits two courses

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 fifteenth week), only a pass, fail enrollment can be changed to a letter-graded enrollment.

The P (pass) 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. 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 have the prerogative of requesting, from the Office of the Registrar, the letter grade for courses a prospective major has taken on a pass, fail basis. 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.

52. PREREQUISITE COURSES. All prerequisites shall be satisfactorily completed before the student may register in a course. The instructor may waive the prerequisite in the case of a student who has demonstrated competence or who has had academic experience equivalent to that represented by the prerequisite.

53. CERTIFICATION OF A MAJOR. An undergraduate student may declare an academic major upon matriculation to the University. Upon completion of 24 semester hours, and meeting department, program, or school certification 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.

54. MINOR OR SECOND MAJOR. A student who has completed 60 semester hours and is certified in a major may certify a minor or second major with the approval of the department offering the second major or minor. 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.

An undergraduate minor requires a minimum of 16 semester hours, 9 of which must be in upper-division work and taken in residence at WSU or through WSU-approved education abroad or educational exchange courses. The Registrar’s Office will be responsible for checking the minimum university requirements of the minor as defined above. 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).

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 certificated major who becomes academically deficient under Rules 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.

A certified major who falls below the minimum departmental requirements (approved by Faculty Senate) may be decertified by the department after two semesters of falling below that minimum. The department must notify the student at the end of the first semester and establish conditions in writing that must be met the second semester. If conditions are not met at the end of the second semester, documentation must be provided to the Student Advising and Learning Center along with the request to decertify a student.

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 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.)

After the 5th day of the semester, students may add course enrollments only with the permission 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 wishes to re-enroll, 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, undergraduate 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 Regulation 57).

(a) Students canceling their enrollment during the first four weeks of the semester will have their permanent records marked “withdraw (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 “withdraw (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 may 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 who believe that they have extenuating circumstances which prevent their attendance during the first week should notify the Office of Student Affairs or Student Services. That office will notify instructors of the absence and the reason for it. Instructors shall determine whether to accept the excuse, waive the absence, and permit make-up work.

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) MILITARY SERVICE MEMBERS. Students who are members of the National Guard or a reserve branch of a military service are occasionally required to miss class for weekend drills, active duty, and related responsibilities. In such a case, instructors should not penalize the student for the absences and should work with the student to make-up the missed assignment or examination. In each instance, it is the responsibility of the student to inform the instructor of the duty before the absence and complete the missed work as soon as reasonably possible.

(c) 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 recommended that the instructor 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 not 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, tests or examinations that fall on these religious observances require reasonable accommodation. The university will provide reasonable accommodation consistent with the fair, efficient and secure administration of its programs. When tests or examinations fall on one or two days objectionable to a student because of religious beliefs, the student shall provide the instructor written notice 14 calendar days prior to the holiday. The written notice shall specify the date(s) and the reasonable accommodation requested. If the request appears to be made in good conscience, the instructor shall make alternate arrangements for administration of the examination or test, considering the integrity of the testing process and fairness to all the students. The instructor shall inform the student of the decision in writing within 7 calendar days of the receipt of the request. Any student who believes that she or he has not been appropriately accommodated under this policy may seek review of the decision by sending a written request to the chairperson of the department offering the course, as soon as possible and no later than 7 days after learning of the instructor’s decision. After the chair’s decision, the student or the instructor may appeal to the dean’s office. Appeals to the dean’s office must be presented in writing within 7 calendar days of the chair’s decision. The decision of the dean or associate dean shall be made within 7 calendar days and is final. The University Ombudsman is available at any stage for advice or assistance in resolving requests for accommodation. Students should understand that fairness in the examination process is an important consideration in the educational process and that they do 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 following 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. F. 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. All outstanding incomplete work (including grades of I, X, and blank/no grade) must be completed and posted to the official transcript prior to the conferment of the undergraduate or professional degree. 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. Undergraduate or graduate students 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 grade. 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. All outstanding Incomplete work (including grades of I, X, and blank/no grade) must be completed and posted to the official transcript prior to the conferral of the undergraduate or professional degree. An X grade may also be used when no final grade is reported due to instructor’s illness or absence.

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

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F provides no credit or grade points. (Credits attempted are calculated in GPA)

P credit given—grade points not calculated.

S credit given—grade points not calculated.

M credit given—grade points not calculated.

I provides no credit or grade points.

P 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 honorees, 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 decision 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. ADMINISTRATIVE CHANGES TO FINAL GRADES

a.) University Academic Integrity Hearing Board. If an allegation of academic dishonesty is not resolved between the instructor and the student, then the case is referred to the University Academic Integrity Hearing Board. The case must be referred to the Board within one semester (excluding summer term). The University Academic Integrity Hearing Board shall have jurisdiction over decisions of any faculty member on matters of grading related to academic dishonesty cases. The decision of the board is final and not subject to further appeal.

b.) University Grade Appeals Board. If a chair, dean, Graduate School Dean, Academic Vice Chancellor or designee, or ombudsman finds that a change of a final grade is warranted for any reason other than academic dishonesty, 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.

106. APPLICATION FOR UNDERGRADUATE DEGREE (TO-DO LIST). Application for a bachelor’s or DVM degree should be made at the Registrar’s Office near 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
Appendix—Academic Regulations

114. REQUIREMENTS FOR UNDERGRADUATE DEGREES
(a) The four-year degree (B.A., B.S., B.F.A., 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.
   8. 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.

(b) The five-year degree (B.Arch., B.S. in M., B.Pharm.):
   1. Meet requirements 1, 2, 3, 7, 8, 9 and 10 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.
(d) Meet requirements 9 and 10 listed under rule 114 (a) above.

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 non-thesis 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 (45 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.

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.

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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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