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

General Information iv–38

General Education Requirements and Courses 39–46

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

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

Departments, Degree Programs, and Courses 47–262

The information in this section includes the following:

- Listings of faculty, descriptions of academic fields, and departmental requirements, in alphabetical order by department name.
- A complete listing of courses needed to graduate. The degree program requirements are shown in a semester-by-semester sequence to help you plan your schedule. You will find the degree programs organized by department. For instance, the Marketing degree program is found under the Departments of Business. Do note that departmental requirements are set at the time you certify in your major (see page 34 for details).
- 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, and 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 Degree Program Requirements

A degree program is a specific area of study leading to a bachelor's degree. Here is an example and explanation of what you will see when you look at a degree program:

**Freshman Year**

(1) First Semester  Hours

Arts & Humanities [H,G] (GER)  3

Degree Program Course1  3

Foreign Language, if necessary, or Elective  4

(2) Math Proficiency [N] (GER)  3 or 4

Tier 1 Science [Q] (GER)  3

Many degree programs allow you to take the required courses in a different order. Your adviser can tell you how much flexibility you have in rearranging your degree program sequence.

(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 degree program department. So if you plan to be an architecture major, you cannot use Arch 202 [H] (GER) to satisfy your GER requirements, although anyone who is not an architecture major can.

(2) Footnotes are frequently used to provide 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 (see page 38).

Understanding Course Descriptions

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

| Course Prefix: Abbreviation and number. [B] indicates GER course. |
| Credit hours are shown here. This is a 4-credit course, with three hours in lecture and three hours in lab each week. |
| Prerequisites will be listed if there are courses you need to take before you enroll in this class. |
| The number in parentheses is a previous number for this course. |
| The course credit is variable; you choose the amount. |
| You will find the complete description of this course in the animal sciences course description section. |

Use the Index to find whatever you need!

Visit the Registrar’s Office Web site, www.registrar.wsu.edu, to search the on-line catalog or to access time schedule and registration information.
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)
Go to www.wsu.edu, WSU InfoNet, Student Information Center, then Undergraduate Degree Audit Request under Student Academic Information.

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 adviser, 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 adviser to see which requirements are incomplete, the report also shows which courses may be used to satisfy requirements; this will help you choose the best courses to take in future semesters. The report also shows requirements for graduation that are not met by taking courses, such as completing the junior writing portfolio or maintaining a certain grade point average.

You may request Degree Audit reports over the Web by following these links from the WSU homepage: www.wsu.edu, WSU InfoNet, Student Information Center, then Undergraduate Degree Audit Request under Student Academic Information. There is no charge for requesting the report, and it may be sent directly to your e-mail address.

“What If?” Reports: You may also use the DARS system to check how your courses would fit into other degree programs. For instance, if you were majoring in business, you could explore how your course work 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” section of the degree audit Web site.

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

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

FOR PROSPECTIVE TRANSFER STUDENTS

Cougar TRACS (Transfer Credit System)
Go to 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:

• 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

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 that 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.

Contact the Transfer Center for more information:
Student Advising and Learning Center
Washington State University
260 Lighty Student Services Building
P.O. Box 641064
Pullman, WA 99164-1064
509-335-6000 or toll free at 800-978-7252
E-mail: transfer@mail.salc.wsu.edu
Web: salc.wsu.edu/transfer

FOR ALL STUDENTS

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

The Transfer Course Equivalency Web site is an on-line 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
Go to www.it.wsu.edu/AIS/ADM/cgi-bin/ug_majors.cgi.

Students seeking an undergraduate degree at WSU can select a major from more than 150 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 branch campuses, and to information about graduate programs.

WSU’s On-line Catalog
Go to www.registrar.wsu.edu, under WSU Catalog.

WSU’s on-line catalog contains all of the information in the printed catalog as well as additional information about degree programs for students in the Honors College.
### University Graduation Requirements

**IMPORTANT:** Students with Initial Post Secondary Enrollment prior to Fall 1993 should consult with the Graduations Office.

#### 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 Post Secondary Enrollment Fall Semester 2000. Meets both the [D] requirement and another GER course designation.
- choose one  
  3 cr

**Arts and Humanities** [H][G]
- choose one  
  3 cr

**Social Sciences** [S][K]
- choose one  
  3 cr

**Arts and Humanities** [H][G] **or** **Social Sciences** [S][K]
- choose one  
  3 cr

**Intercultural Studies** [I][G][K]
- choose one  
  3 cr

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

- choose one lab science (L)  
  4 cr
- choose one  
  3 or 4 cr
- choose one  
  3 or 4 cr

---

#### Upper-Division Requirements

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

**Tier III Course (GER)**
Effective with Initial Post Secondary Enrollment Fall Semester 1995.

- choose one  
  3 cr

**Junior Writing Portfolio/Qualifying Exam**
Complete before earning 60 credits and taking Writing in the Major.

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

- choose one  
- choose one

**Upper-Division Course Work (300-400-level)**
Complete 40 semester credits.

---

**COLLEGE OF SCIENCES**

**COLLEGE OF LIBERAL ARTS**

#### Additional Graduation Requirements

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

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

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

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

**Additional 2 semester credits of [B,P,Q] and 1 additional lab science (L)**
For a total of 12 semester credits of GER sciences and 2 lab (L) courses.

- choose one [B,P,Q]  
  or
- choose one lab science (L)  

---

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

- “Initial Post Secondary 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.
- University Honors College students do not complete GERs. Contact the Honors College at 335-4505, Bryan Hall 206 for additional information.

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

Past changes are summarized in the chart on the following page. For more detailed information about the General Education Program, see pages 39–46.

General Education Program Requirements

WSU’s General Education Program has been converted from a simple system of distribution requirements into an integrated program that 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. During junior or senior year, students will select an upper-division capstone course, which is intended to assist students’ integration of knowledge from various domains and to permit advanced study and research outside the major.

Please note that students in the College of Sciences or the College of Liberal Arts must fulfill the additional requirements listed on page 38.

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>
<th>Tier II: 22 semester credit hours</th>
<th>Tier III: 3 semester credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Civilizations [A] GenEd 110 and 111 6</td>
<td>Communication Proficiency [W], [C] 3</td>
<td>Capstone Course 3</td>
</tr>
<tr>
<td>Written Communication [W] 3</td>
<td>Arts and Humanities# [H], [G] 3</td>
<td></td>
</tr>
<tr>
<td>Mathematics Proficiency [N] 3</td>
<td>Social Sciences# [S], [K] 3</td>
<td></td>
</tr>
<tr>
<td>Sciences [Q] 3</td>
<td>Arts and Humanities/Social Sciences# [H], [G], [S], [K] 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intercultural [I], [G], [K] 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sciences* [B], [P] 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>total hours 40</td>
<td></td>
</tr>
</tbody>
</table>

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

The following new requirement will be in effect starting fall 2000 for students beginning post-secondary enrollment that term.

American Diversity

[D] 3 Hours

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

This requirement adds no new credit hours to the General Education Requirements as American Diversity courses may be double designated.

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. In some instances, students may be exempted from Engl 101 on the basis of their performance in the Placement Examination.

c. General Education courses require student writing of various kinds, both formal and informal, in order to provide adequate instruction in writing skills and to provide a wide range of student experiences in writing for many purposes and audiences.

2. The University Writing Portfolio—Writing Assessment at Mid-Career

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

For more information, see pages 39 and 40.
## Academic Calendar


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</thead>
<tbody>
<tr>
<td>Labor Day holiday</td>
<td>Sept 3</td>
<td>Sept 2</td>
<td>Sept 1</td>
<td>Sept 6</td>
<td>Sept 5</td>
<td>Sept 4</td>
<td>Sept 3</td>
</tr>
<tr>
<td>Veterans Day holiday</td>
<td>Nov 12</td>
<td>Nov 11</td>
<td>Nov 11</td>
<td>Nov 11</td>
<td>Nov 10</td>
<td>Nov 10</td>
<td>Nov 12</td>
</tr>
<tr>
<td>Commencement</td>
<td>Dec 15</td>
<td>Dec 14</td>
<td>Dec 13</td>
<td>Dec 11</td>
<td>Dec 10</td>
<td>Dec 9</td>
<td>Dec 8</td>
</tr>
<tr>
<td>Final grades due, 4:00 p.m.</td>
<td>Dec 27</td>
<td>Dec 26</td>
<td>Dec 23</td>
<td>Dec 21</td>
<td>Dec 20</td>
<td>Dec 19</td>
<td>Dec 18</td>
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</table>

### Second Semester (Spring)

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</thead>
<tbody>
<tr>
<td>Classes begin</td>
<td>Jan 14</td>
<td>Jan 13</td>
<td>Jan 12</td>
<td>Jan 10</td>
<td>Jan 9</td>
<td>Jan 8</td>
<td>Jan 7</td>
</tr>
<tr>
<td>Martin Luther King, Jr. Day holiday</td>
<td>Jan 21</td>
<td>Jan 20</td>
<td>Jan 19</td>
<td>Jan 17</td>
<td>Jan 16</td>
<td>Jan 15</td>
<td>Jan 21</td>
</tr>
<tr>
<td>Presidents Day holiday</td>
<td>Feb 18</td>
<td>Feb 17</td>
<td>Feb 16</td>
<td>Feb 21</td>
<td>Feb 20</td>
<td>Feb 19</td>
<td>Feb 18</td>
</tr>
<tr>
<td>Midsemester grades due, 8:00 a.m.</td>
<td>Mar 6</td>
<td>Mar 5</td>
<td>Mar 3</td>
<td>Mar 2</td>
<td>Mar 1</td>
<td>Feb 28</td>
<td>Feb 27</td>
</tr>
<tr>
<td>Final Exams, Monday-Friday</td>
<td>May 6–10</td>
<td>May 5–9</td>
<td>May 3–7</td>
<td>May 2–6</td>
<td>May 1–5</td>
<td>Apr 30–May 4</td>
<td>Apr 28–May 2</td>
</tr>
<tr>
<td>Commencement</td>
<td>May 11</td>
<td>May 10</td>
<td>May 8</td>
<td>May 7</td>
<td>May 6</td>
<td>May 5</td>
<td>May 3</td>
</tr>
<tr>
<td>Final grades due, 4:00 p.m.</td>
<td>May 14</td>
<td>May 13</td>
<td>May 11</td>
<td>May 10</td>
<td>May 9</td>
<td>May 8</td>
<td>May 6</td>
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</table>

### Summer Session

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</thead>
<tbody>
<tr>
<td>Early Session begins</td>
<td>May 13</td>
<td>May 12</td>
<td>May 10</td>
<td>May 9</td>
<td>May 8</td>
<td>May 7</td>
<td>May 5</td>
</tr>
<tr>
<td>Memorial Day holiday</td>
<td>May 27</td>
<td>May 26</td>
<td>May 31</td>
<td>May 30</td>
<td>May 29</td>
<td>May 28</td>
<td>May 26</td>
</tr>
<tr>
<td>Eight-Week Session begins</td>
<td>June 10</td>
<td>June 9</td>
<td>June 7</td>
<td>June 6</td>
<td>June 5</td>
<td>June 4</td>
<td>June 2</td>
</tr>
<tr>
<td>Late Six-Week Session begins</td>
<td>June 24</td>
<td>June 23</td>
<td>June 21</td>
<td>June 20</td>
<td>June 19</td>
<td>June 18</td>
<td>June 16</td>
</tr>
<tr>
<td>Independence Day holiday</td>
<td>July 4</td>
<td>July 4</td>
<td>July 5</td>
<td>July 4</td>
<td>July 4</td>
<td>July 4</td>
<td>July 4</td>
</tr>
<tr>
<td>Summer Session ends, Friday</td>
<td>Aug 2</td>
<td>Aug 1</td>
<td>July 30</td>
<td>July 29</td>
<td>July 28</td>
<td>July 27</td>
<td>July 25</td>
</tr>
<tr>
<td>Final grades due, 4:00 p.m.</td>
<td>Aug 6</td>
<td>Aug 5</td>
<td>Aug 3</td>
<td>Aug 2</td>
<td>Aug 1</td>
<td>July 31</td>
<td>July 29</td>
</tr>
</tbody>
</table>

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**Specialized Accreditations**

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 credentialing associations recognized by the Council on Postsecondary Accreditation. This information is included in the introductory material of the various departments and colleges. An abbreviated list is printed below.

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

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

EXECUTIVE OFFICERS
V. Lane Rawlins
President

Ronald H. Hopkins
Interim Provost

Gregory P. Royer
Vice President for Business Affairs

Sally P. Savage
Vice President for University Advancement

Vacant
Vice President for Student Affairs

FINANCIAL OFFICERS
Karl A. Boehmke
Executive Director of Planning and Budgeting

ACADEMIC DEANS AND DIRECTORS
Mary M. Doyle
Libraries

Warwick M. Bayly
College of Veterinary Medicine

Anjan Bose
College of Engineering and Architecture

Barbara Couture
College of Liberal Arts
Harold A. Dengerink
WSU Vancouver

Dorothy M. Detlor
College of Nursing

William E. Fassett
College of Pharmacy

William H. Gray
WSU Spokane

Larry G. James
WSU Tri-Cities

Glenn L. Johnson
College of Business and Economics

Judy N. Mitchell
College of Education

Leon J. Radziemski
College of Sciences

Mary F. Wack
Honors College

James J. Zuiches
College of Agriculture and Home Economics

LEGAL COUNSEL
Antoinette Ursich
Senior Assistant Attorney General
Washington State University

Washington State University is committed to providing an exceptional education in a caring community.

Founded in Pullman in 1890, WSU is the state’s land-grant research university. It has campuses in Spokane, the Tri-Cities, and Vancouver, and offers classes through regional learning centers and the Distance Degree Programs.

One of the top 50 public research universities in the U.S., according to U.S. News & World Report, 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, home economics, and veterinary medicine.

WSU President V. Lane Rawlins says the community of students, nationally and internationally known faculty and researchers, staff, alumni, and friends have made the University what it is and ensure its future successes.

WSU programs in Spokane, about 76 miles to the north of Pullman, play a role in the university’s educational mission. For example, the School of Architecture and Construction Management includes the Interdisciplinary Design Institute at WSU Spokane. The Intercollegiate College of Nursing/WSU College of Nursing is located in Spokane on its own campus. Most Pharm.D. students complete their fourth professional year in either Spokane or Yakima.

There are about 150 fields of study at WSU. 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 expanded writing requirements, is nationally recognized. WSU’s University Honors College is one of the oldest and most respected, all-university programs for academically talented students.

Instructional faculty of approximately 1,500 opens students’ minds to the most recent knowledge and discoveries. The opportunity for students to know and work closely with their instructors is a Washington State University tradition.

About 18,500 undergraduate and graduate students study on campus in Pullman. This figure includes those at the Intercollegiate College of Nursing/WSU College of Nursing and in Distance Degree Programs.

Pullman is one of the largest residential campuses west of the Mississippi with about half of the student body living in residence halls, 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 in Moscow is six miles away.

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.

Pullman is in the beautiful rolling farm land of southeast Washington, where much of the nation’s finest wheat and legumes are produced. Several small but expanding high-tech firms are diversifying Pullman’s economy. Located on College Hill in Pullman, WSU’s 620-acre campus features modern classrooms and libraries, laboratories, museums, student residences, recreational and athletic facilities, a student union building, and a community hospital. Scheduled to be completed in the fall of 2001, the 195,000 square foot four-story Teaching and Learning Center will include state of the art classrooms.

Also on campus is a one-of-a-kind alumni center, a fine arts building with galleries, a state-of-the-art chemistry building, and a performing arts coliseum that is home to Cougar men’s and women’s basketball. Women’s volleyball is played on a national-class court. The football stadium, which seats 40,000, is complemented by modern track and field, women’s soccer, and baseball facilities, all for Pac-10 Conference competition.

A major student life highlight is the new Student Recreation Center, which opened in January 2001. With 160,000 square feet, the center includes lap and leisure pools; a spa; two gyms with seven courts for basketball, indoor soccer, roller hockey, volleyball, badminton, and pickleball; four racquetball/squash courts; an elevated track; multi-purpose rooms for aerobic classes such as spinning and stomp; and, at 17,000 square feet, the largest student weight fitness room in the country. Also on campus are a nine-hole golf course and 16 all-weather tennis courts. Special playing fields accommodate intramural sports. WSU has one of the largest university-sponsored intramural programs in the nation as well as extensive student life programming.

For more information, visit WSU’s Web site, www.wsu.edu.

Degrees Granted

Academic Degrees

Accounting, M Acct
Agribusiness, BS, MA
Agricultural Economics, BS, MA, PhD
Agricultural Molecular Genetics and Cell Biology, BS
Agricultural Technology and Management, BS
Agriculture, BS, MS
American Studies, BA, MA, PhD
Animal Sciences, BS, MS, PhD
Anthropology, BA, MA, PhD
Apparel, Merchandising, and Textiles, BA, MA
Architectural Studies, BS
Architecture, B Arch, MS
Asian Studies, BA
Biochemistry, BS, MS, PhD
Biological Systems Engineering, BS
Biology, BS, MS
Botany, MS, PhD
Business Administration, BA, MBA, PhD
Chemical Engineering, BS, MS, PhD
Chemistry, BS, MS, PhD
Civil Engineering, BS, MS, PhD
Communication, BA, MA
Comparative American Cultures, BA
Computer Engineering, BS
Computer Science, BA, BS, MS, PhD
Construction Management, BS
Criminal Justice, BA, MA
Crop Science, BS, MS, PhD
Economics, BA, MA, PhD
Education, BA, EdM, MA, MIT, EdD, PhD
Electrical and Computer Engineering, PhD
Electrical Engineering, BS, MS, Engineering, MS
Engineering Management, MEng-Mgt
Engineering Science, PhD
English, BA, MA, PhD
Entomology, BS, MS, PhD
Environmental Engineering, MS
Environmental and Natural Resource Sciences, PhD
Environmental Science, BS, MS
Fine Arts, BA, BFA, MFA
Food Science and Human Nutrition, BS
Food Science, MS, PhD
Foreign Languages and Literatures, BA, MA
Genetics and Cell Biology, BS, MS, PhD
Geology, BS, MS, PhD
Health Policy and Administration, MHPA
History, BA, MA, PhD
Home Economics, BS
Horticulture, BS, MS, PhD
Hotel and Restaurant Administration, BA
Human Development, BA, MA
Human Nutrition, MS
Humanities, BA
Individual Interdisciplinary, DA, PhD
Integrated Cropping Systems, BS
Interior Design, BA, MA
Kinesiology, BS, MS
Landscape Architecture, BLA, MS
Liberal Arts, B Lib A
Manufacturing Engineering, BS
Materials Science, PhD
Materials Science and Engineering, BS, MS
Mathematics, BS, MS, PhD
Mechanical Engineering, BS, MS, PhD
Microbiology, BS, MS, PhD
Music, BA, BMus, MA
Natural Resource Management, BS
Natural Resource Sciences, BS, MS
Natural Resources, MS
Neuroscience, BS, MS, PhD
Nursing, BS, MS, PhD
Nutrition, PhD
Pharmacology and Toxicology, MS, PhD
Pharmacy, Pharm.D.
Philosophy, BA
Physics, BS, MS, PhD
Plant Pathology, MS, PhD
Plant Physiology, MS, PhD
Political Science, BA, MA, PhD
Psychology, BS, MS, PhD
Public Affairs, BA, MPA
Regional Planning, MRP
Science, BS
Social Sciences, BA
Social Studies, BA
Sociology, BA, MA, PhD
Soil Science, BS, MS, PhD
Speech and Hearing Sciences, BA, MA
Sport Management, BA
Statistics, MS
Technology Management, MTM
Theatre Arts and Drama, BA
Veterinary Medicine, DVM
Veterinary Science, BS, MS, PhD
Women’s Studies, BA
Zoology, BS, MS, PhD
The Libraries

The Libraries system, with collections of more than six million items, is an integral part of WSU’s educational resources. The Libraries receive more than 28,000 serials 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 WSU Libraries share an on-line catalog, Griffin, with Eastern Washington University. Cascade, a joint catalog that WSU shares with CWU, EWU, WWU, UW, and Evergreen College, provides an online requesting service for book delivery among the six campuses. 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 to users of the electronic and traditional collections, offer instruction to students on use of library resources, work with teaching faculty to develop the collections, and provide access to materials from other libraries.

The Holland/New Library provides extensive collections in the social sciences, business, fine arts, and the humanities, as well as sophisticated service components designed to assist students, faculty, and researchers in utilizing these resources. Manuscripts, Archives, and Special Collections contains 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 & 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. It is conveniently located near most departments served by its collections.

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

The biomedical collections and services offered by the Health Sciences Libraries (formerly the Veterinary Medical/Pharmacy Library), located in Wegner Hall, primarily support the instructional and research needs of the Colleges of Veterinary Medicine and Pharmacy.

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

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

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

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

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

For full and detailed information about the WSU Libraries, visit the homepage: www.wsulibs.wsu.edu.

The Summer Session

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 studies. Emphasis is also placed on a program of advanced work for teachers and school administrators.

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

The Summer Session Bulletin, published annually in March, is available upon request to the Summer Session Office, Washington State University, Pullman, WA 99164-1033. Housing forms with published deadline dates are included in the Summer Session Bulletin.

The summer application and course listing are available on the Summer Session Web site, www.wsu.edu.

WSU Foundation

Private support to Washington State University since the Foundation was created in 1979 has had a tremendous impact on the quality of programs at WSU. The Foundation has raised more than $570 million for WSU’s priorities of furthering great teaching, increasing access and diversity, fostering WSU’s special experience for students, and advancing research to serve Washington and the world. All gifts go in full to the area designated by the donor. The Foundation administers donations in the best interests of both the donor and the University. Inquiries may be addressed to the President, WSU Foundation, Pullman, WA 99164-1042.
**Compton Union Building**

The Compton Union Building is more than a building—it is an educational program of out-of-class activities designed to provide for the student’s personal, social, and cultural development; practice in leadership; and management and enjoyment of leisure activities.

Compton Union is the campus community center. The union has facilities for student activities, conferences, and conversations. Food services include two espresso shops, Taco Bell Express, fast food, international cuisine, and a full-service restaurant. Compton Union also offers meeting rooms, games area, hotel rooms for campus visitors, a movie theater, copy center, outdoor rental shop, art gallery, student legal services, lockers, computer lab, and a variety of shops including a U.S. Post Office, hairstyling salon, travel service, floral shop, credit union, and bank machines.

Other groups within Compton Union include the Office of Student Programs, the Associated Students of Washington State University (ASWSU), Residence Hall Association, Panhellenic/Infrafraternity Council, and Graduate and Professional Students Association (GPSA). The Leadership Center provides WSU students, faculty, staff, and alumni with resources and assistance to develop skills and knowledge relating to leadership. Students can explore community service opportunities at the Community Service Learning Center ranging from one day to semester-long placement. For more information about Compton Union, visit our Web site, cub.wsu.edu.

**Scholastic Societies**

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

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

**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 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 willingness 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 grade point average 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 our Web site, www.odk.org.

**Phi Beta Kappa.** Phi Beta Kappa, the oldest national honorary fraternity in the United States, was established to promote scholarship and friendship among students and graduates of American colleges and universities. The WSU chapter of Phi Beta Kappa, established in 1928, was one of the first chapters founded at a land-grant university. To be considered for selection, students must be majoring in a liberal arts discipline, have 75 percent of their course work in liberal arts, and have earned at least 45 of their total credits from WSU with a minimum 3.45 grade point average. Only about 15 percent of the institutions of higher education in the United States have programs sufficiently strong in the sciences and liberal arts to warrant membership.

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

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

**Phi Zeta Rho.** Alpha Phi Rho is a social fraternity chapter formed in 1943. It is the first national organization whose primary purpose was to bring communication students and professionals together. The WSU Chapter of Phi Zeta Rho is involved in many activities, including sponsoring the end-of-the-year banquet for the School of Communication.

**Scholar.** Scholar is a national honor society for seniors in the department of social sciences. The society recognizes students who have earned a 3.50 cumulative grade point average and have a general interest in the social sciences.

**Scholar’s Society.** The WSU Scholar’s Society was established in 1917 as a chapter of the national organization. Membership is by chapter invitation.

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**Student Clubs, Organizations, and Honoraries**

Participation in departmental clubs and honoraries, service organizations, and campus activities is an important part of student life. More than three-fourths of the student body take part in the activities program. Adequate opportunities are available for every student to pursue extracurricular interests through service, recreation, religious, and other specialized interest groups.

**ASWSU.** WSU and the Activities and Recreational Sports Office coordinate and guide existing student organizations and assist new groups in developing sound programs. A professionally trained staff is prepared to help all students in planning well balanced activity programs adapted to their particular needs and interests.

**Student Government**

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

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

**Student Publications**

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

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

**The Chinook** is the University yearbook issued each August to more than 9,000 buyers.
**Student Services and Facilities**

**Career Services**

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 a one-credit course (University 100) 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 SIGLs) 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 each year.

Through on-campus interviews, students can interview for internship and permanent employment with employers who recruit at WSU. Students registered with Career Services may also take advantage of the Career referral service to access employers who are interested in WSU students but not planning to come to campus. Career Services also maintains extensive current job and internship listings in partnership with JOBTRAK Corporation.

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

To access job and internship listings, register with us, and check services and upcoming events, visit our Web site, www.careers.wsu.edu/. For more information, please visit us at 180 Lighty or call 509-335-2546.

**WSU Children’s Center**

WSU Children’s Center offers part- or full-time child care for six-week- to 12-year-old children of WSU students, staff, and faculty. The center cares for approximately 170 children. Licensed by the Washington Department of Social and Health Services and accredited by the National Academy for Early Childhood Programs, the center is designed to meet child care needs of parents while providing intellectual, social, emotional, and physical growth opportunities for children. Activities vary from quiet to active, group to individual, and structured to unstructured. Children are grouped developmentally by age. Snacks and lunches are provided.

The center is available to students for observation and participation for classes. Work-study jobs also are available. Further information may be obtained by calling 509-335-8847.

**Counseling and Testing Services**

WSU Counseling Services offers specialized individual and group counseling and consultation services without charge to regularly enrolled students. A staff of professionally trained counselors is available to provide confidential assistance to students with personal, social, academic, or relationship concerns. Groups and workshops are provided to help students with personal development and adjustment and to cope with such issues as eating disorders and sexual assault and abuse. Crisis services and consultation are available on a 24-hour basis. Call 509-335-4511 or stop by 280 Lighty Student Services for appointments or information. Visit our Web site, www.counsel.wsu.edu.

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

**The Disability Resource Center**

The Disability Resource Center (DRC) coordinates accommodations for students with disabilities in academic and non-academic programs. Accommodations may include modified test taking, textbooks on tape, sign language interpreters, notetakers, and accessible transportation on campus. Available services include academic advising, learning strategies training, the use of adapted equipment, and referrals.

The center provides disability awareness training for WSU faculty, staff, and students, and works cooperatively with University programs to encourage compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. The DRC promotes self-advocacy for students with disabilities and teaches them self-advocacy skills.

For additional information contact the Disability Resource Center, Room 205 Administration Annex, 509-335-1566, www.wsu.edu/DRC.

**Educational Telecommunications and Technology (ETT)**

Educational Telecommunications and Technology (ETT) is a unit of Extended University Affairs responsible for public broadcasting, interactive video services, Web-based audio and video applications, and other telecommunications services. ETT can trace its history back to a Morse code radio transmitter built by the mechanical engineering faculty more than 90 years ago. Edward R. Murrow 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 three largest such systems in the country.

**Broadcasting:**

WSU operates twelve NPR-member radio stations and two PBS-member television stations serving significant audiences in Washington, Idaho, Oregon and British Columbia (radio only). The public radio stations operate as Northwest Public Radio, eight of them as a “Classics and NPR” network and four 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.npr.org. Northwest Public Radio has studios in Pullman (main), Bellingham, Moscow, and Richland.

WSU has separate PBS memberships for its stations in the Tri-Cities and Pullman. KTNW, Ch. 31, Richland, has a full PBS membership and runs the main PBS program schedule. KWSU-TV, Ch. 10, Pullman, runs an educational schedule with programming primarily from the PBS network. There are studios in Pullman (main) and Richland.

**WHETS:** The Washington Higher Education Telecommunication System (WHETS) operates nearly three dozen interactive video classrooms statewide interconnected with telecommunications facilities provided by the Washington K-20 Education Network. It has dial-up ISDN access to any public university, community college, or school district in-state and out-of-state, and has Internet-based videoconferencing capabilities. WHETS was originally built to interconnect WSU's campuses, and courses originate from each site.

WHETS provides about 13,000 hours per year of usage, 90 percent of it for classes and the remainder for meetings involving about 15,000 participants. There are nearly 8,000 enrollments and about 800 average annual Full Time Equivalent students involved in 270 WHETS courses.

**New Technologies:** ETT is taking a leadership role in several new technology areas. It is the principal partner in two national projects relating to digital television distribution and operations and in the use of Internet for high-quality video. It is also providing a substantial level of video streaming services to the WSU community. It is developing a national video streaming service for public television stations. Additionally, ETT operates the K-20 Education Network Eastern Washington satellite teleport.

**Gay, Lesbian, Bisexual, and Allies Program and Center**

The WSU Gay, Lesbian, Bisexual, and Allies (GLBA) Program and Center assist Washington State University in providing an academic and employment climate that acknowledges, respects, and enhances the quality of life for gay, lesbian, bisexual, and transgendered students, faculty, staff, and their allies. The GLBA Program offers educational programming and a speakers bureau for campus and community organizations. The program actively supports research and curricular developments that integrate GLBA scholarship in the University. The program is also a source of information and resources for the campus and local community. The center has a library of books, magazines, and videos on GLBA issues available for check-out, and a lounge that serves as a gathering place, meeting room, and study area.

For more information about the GLBA Program, contact the program office, Compton Union Building, Room B19A, 509-335-6388.

**Human Relations and Educational Services Program**

Human Relations and Educational Services (HRES) program staff works in partnership with individuals and organizations to build the capacity for effective and diverse communities. HRES provides leadership and services within the following arenas: creating quality learning, living, and working environments; conflict management; and intercultural relations and change. HRES program staff also provide educational opportunities by designing and implementing seminars, workshops, and training tailored to meet your needs around team building, organizational development, conflict management, cultural diversity, and commu-
nification. The office is located in French Administration Building, Room 132, and is open year round. Further information about the program may be obtained by calling 509-335-6648 or on the Internet at www.wsu.edu/~hres.

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

For more information contact the Center for Human Rights, French Administration Building, Room 225, Pullman, WA 99164-1022, 509-335-8288, fax 509-335-5483, rights@mail.wsu.edu, or www.wsu.edu/~chr.

The Office of Multicultural Student Services
The Office of Multicultural Student Services primary purpose is to provide services and programs that recruit, matriculate, and graduate students of color (African American, Asian American and Pacific Islander, Chicano/Latino, and Native American). 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 the Pullman communities.

The unit is comprised of an Administrative area, Community Relations, Retention Services, and includes four multicultural student centers (African American, Asian American and Pacific Islander, Chicano/Latino, and Native American). The recruitment coordinators travel extensively to meet with students of color in high schools and community colleges. The recruiters present information about WSU and guide students through the admissions process. They also work closely with communities to plan early outreach programs and to bring students to campus.

The counselors serve as academic advisers, 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. Each counselor has an office in his or her respective student center. These student centers offer a number of services such as social support, a study area, and a gathering place for student organizations.

For more information, contact The Office of Multicultural Student Services, Lighty Student Services Building, Room 190, 509-335-7852, or www.wsu.edu/multicultural.

Museums and Collections
The Museum of Anthropology
The Museum of Anthropology has permanent exhibits that include human evolution, biological diversity, and prehistoric peoples of the lower Snake River as well as exhibits that focus on cultural similarities and differences in the lifeways of people in past and present societies. Short-term exhibits focus on special topics and report on faculty and graduate student research projects from around the globe.

For both students and visitors, the museum provides an introduction to the study of human culture. It also serves as a repository for artifacts resulting from WSU research projects, including extensive archeological collections from sites in the Columbia Basin and Snake River regions of Washington. As such, it is integral to the teaching, research, and public service functions of WSU’s Department of Anthropology.

The Museum of Anthropology is located on the first floor of College Hall.

Guest speakers and special programs are scheduled throughout the year for those interested in additional exposure to anthropological issues. Group tours may be scheduled two weeks in advance by calling the Museum Curator, Department of Anthropology, 509-335-3936 or 509-335-3441. Visit our Web site, www.wsu.edu/~anthro/museum/museum.html.

The Museum of Art
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 the state of Washington, the museum presents changing exhibitions on the Pullman campus and branch campuses ranging from fine arts and crafts 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, children’s workshops, symposia, films, and other special events.

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

The exhibition gallery of the Museum of Art is open and free to the public seven days a week from mid-August into May. The gallery is closed for university holidays and in order to install new exhibitions. For more information on hours and exhibitions, call 509-335-6607. Docent tours for groups are available with advance reservation and free of charge. An active Friends of the Museum association hosts public receptions and supports museum programs through fundraising events, memberships, and volunteer work. Call 509-335-1910 for details. Visit our Web site, www.wsu.edu/artmuse.

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

The museum also maintains a separate research collection of about 60,000 specimens of birds, mammals, reptiles and amphibians, including skins, skeletons and specimens preserved in alcohol and formalin. These collections are used for teaching and research in anatomy, systematics, evolution, biogeography, ecology and conservation and are loaned throughout the world for research purposes. The collection is located in Science Hall, Room 101, and is available to qualified workers. Tours can be arranged by calling 509-335-3515 or 509-335-1977 well in advance. Visit our Web site, www.sci.wsu.edu/cm.

Culver Memorial and Jacklin Collection
The Culver Memorial, located in the Physical Sciences Building, 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 U.S. It is the largest display of its kind in the western U.S. Also included in the collection is a large selection of cut and polished agate, geodes and dinosaur bone.

The Culver Collection includes over 100 classic rock and mineral specimens from localities throughout the world. Both the Jacklin and Culver Collections may be viewed Monday through Friday, 8:00 a.m. to 5:00 p.m. Group tours may be arranged by calling the Department of Geology, 509-335-3009.

Drucker Collection
The Minnie Barstow Drucker Memorial Collection of Oriental Art consists of oriental furniture, accessories, art, textiles, and costumes. The collection was given to the University in 1944 by the late Arthur Eilert Drucker in memory of his wife, the Chinese, Korean, and Japanese artifacts were collected during the years the Druckers made the Orient their home. The collection may be viewed by contacting the Department of Apparel, Merchandising, and Interior Design in writing or by calling 509-335-3823 for an appointment.

The Historic Textiles and Costume Collection
The Historic Textiles and Costume Collection contains approximately 2,000 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 limited number of ethnic textiles and costumes from around the world. The collection is maintained by the Department of Apparel, Merchandising, and Interior Design. Tours may be arranged by calling 509-335-3823.
James Entomological Collection

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 interpretative presentations for groups can be arranged in advance by calling 509-335-3394. The collection is located in the Food Science and Human Nutrition Building, Room 157. Further information may be obtained at entomology.wsu.edu.

Mycological Herbarium

The Mycological Herbarium of Washington State University is housed in and maintained by the Department of Plant Pathology, third floor, Johnson Hall. The herbarium was founded by Frederick D. Head, the first chairman of the department, in 1915 and now contains more than 68,000 specimens of fungi. Included are representative materials of all the major groups from the slime molds and true molds to the larger, fleshy mushrooms. The parasitic fungi of northwestern North America have been emphasized; however, through exchange and purchase, representative materials of all groups from all over the world have been incorporated. Loans are freely available to individuals associated with recognized botanical institutions anywhere in the world. Specialists wishing to utilize the facilities of the Mycological Herbarium are welcome and are asked only to inform the Department of Plant Pathology, 509-335-9541, of their desires in advance so that members of the department may be of maximum assistance to them. Visit our Web site at mycology.wsu.edu.

Ownbey Herbarium

The Marion Ownbey Herbarium is an internationally recognized resource for research, teaching, and service. Located in Heald Hall, Room G-9, the herbarium houses 358,000 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, www.wsu.edu/~wsherb includes local plant lists and educational programs.

Smith Soil Monolith Collection

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, professor emeritus of soils at Washington State University. The soil monoliths constitute a very valuable resource for both teaching and research within the Department of Crop and Soil Sciences. The collection is located in Johnson Hall, Room 114, and may be viewed from an observation window any time the building is open. Persons or groups interested in touring the collection should contact Alan Busacca at 509-335-1859. Additional information about the Soil Science program can be viewed at css.wsu.edu.

Music and 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.wsu.edu/Music_and_Theatre/calendar.html or by calling 509-335-8525, the SMTA events line.

The Music Program, in addition to the presentations listed above, supports several performance organizations with enrollment open to all WSU students by audition. Students interested in continuing their musical experience through enrollment in one of the ensembles are encouraged to contact the Music Program for further information; call 509-335-7757.

Theatre presents a widely varied year-round program offering many opportunities for participation: eight productions in Daggy Hall theatres, an eight-week Summer Palace repertory season, theatre for children and young people, and many experimental and student-directed productions. Interested students should contact the Theatre Program at 509-335-7447 for information regarding any aspect of the program: performance, technical, or management. Auditions for Summer Palace are open to all members of the university and community. Academic year auditions are open and require enrollment in Applied Theatre Studies.

Jewett Observatory and University Planetarium

The James Richard Jewett Observatory is the gift of Mr. and Mrs. George F. Jewett of Spokane and is named in honor of Mr. Jewett's father, a former professor of ancient languages at Harvard University. The observatory houses a 12-inch refractor with a visual lens and a 25-foot revolving dome. The University Planetarium is located in Sloan Hall, Room 231. Information about open house and group tours of either the observatory or the planetarium can be obtained by contacting the Program in Astronomy, 509-335-6868.

The Ombudsman Office

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 at 509-335-1195 from 8 a.m. to 5 p.m., Wilson Hall, Room 2. Web address: www.wsu.edu/~ombuds.

Speech and Hearing Clinic

The Speech and Hearing Clinic provides complete evaluative and rehabilitative services to students with speech, language, or hearing problems, including communication disorders involving defective articulation, stuttering, voice pitch and quality, and speech and language problems resulting from brain injury or neuromuscular disability. Students with central auditory processing disorders and learning disabilities may receive special help at the clinic. Speechreading and auditory training, as well as evaluations for fitting of hearing aids and assistive listening devices, are conducted. Application may be made to the Speech and Hearing Clinic of the Department of Speech and Hearing Sciences, Daggy Hall, Room 133, 509-335-1509.

Student Advising and Learning Center (SALC)

The Student Advising and Learning Center, located in Lighty Student Services Building, Room 260, provides students 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, reading, writing, test taking, or advising should call the center, 509-335-6000 or 888-978-7252. The center faculty and staff are responsible for:

• Coordination of advising.
• Access to Freshman Seminar Program.
• Operating the Transfer Center and providing assistance to transfer students.
• Assistance with study skills.
• Assistance with writing skills (in cooperation with the Writing Lab).
• Assistance with test-taking skills.
• Access to computer-based learning and multimedia development.
• Tutoring in a wide range of subjects.

SALC provides educational opportunities and retention services for students throughout the University. The center offers academic advising and counseling, individual and group tutoring, assistance to students with special learning needs, and media-based learning skills classes. Tutorial assistance in reading, writing, science, math, and study and test-taking skills is available. Tutorial assistance in most General Education Requirement courses is provided.

Students may be assigned an adviser in the SALC program upon entrance to the university or as a retention condition. Students may also be referred to the SALC at any time by faculty members, counselors, and others for any of the services it provides. Contact SALC by calling 509-335-6000. Visit our Web site, salc.wsu.edu.
Student Computing Services (SCS)
The SCS Student HelpDesk is located in ITB 2091. HelpDesk consultants are available to answer questions about UNIX and Network ID accounts. In addition, the HelpDesk provides support for students, both on and off campus, to connect to the campus network, either through Ethernet or the WSU Dial-up modem pool. You can get help with most Information Technology services as well as access to all SCS Technology Lab services by coming to the HelpDesk in the ITB Lab 2091, or by calling 509-335-HELP.
HelpDesk support is also available in the other SCS Technology Labs located in Gannon Goldworthy S8, Thompson 1, Stephenson Residential Complex 206, Streit Hall 60, Todd Hall 101, and CUB B-25. The SCS Technology Labs offer both IBM and Macintosh computers, Internet, word processing, spreadsheet, multimedia, and other commonly used software are available in the labs. In addition, a variety of special hardware such as laser printers, color printers, scanners, CD-ROM burners, Zip drives, and others are provided. A Student Technology Consultant is always on duty to assist customers with using the computers and more. Semester, year-long, and hourly passes are available at each lab or can be purchased directly from the registration page in METRO.
SCS also offers the ResNet program, which provides Ethernet cards and installations to students living in the residence halls on campus. These installations are performed by Student Technology Consultants who work in the Residence Hall labs, which are located near every residence hall on campus. In addition to performing installations and troubleshooting, the Student Technology Consultants are available for general computing support questions in the labs.

Student Health and Wellness Services
Health and Wellness Services provides primary health care to students, including treatment for acute and chronic illness, injuries, accidents, women’s health, contraception, STDS, food precautions/disorders, pregnancy tests, allergy shots, immunizations, wart treatments, counseling, and information on health and preventive care. Our staff of physicians, physician assistants, nurse practitioners, and registered nurses see patients by appointment, with urgent care for emergencies available as well. A registered nurse is available to students by telephone 24 hours a day. Located in the Pullman Memorial Hospital on the south end of campus, the clinic is open 9 a.m. to 5:45 p.m., Monday through Friday, and 10 a.m. to 2:30 p.m. on Saturday. Call 509-335-3575 for an appointment, information, or to speak with the telephone nurse.
The Health and Wellness Services Pharmacy, located on the first floor of the hospital building, is open from 9 a.m. to 5:30 p.m., Monday through Friday. Call 509-335-5742 for information.
The Health and Wellness Services Wellness Programs are staffed by a substance abuse coordinator, a sexuality education coordinator, a fitness coordinator, and health educators. Located in the center of campus in room 301 of the Administration Annex Building and at the Student Rec Center, the Wellness Programs’ offices are open from 9 a.m. to 5 p.m., Monday through Friday. Call 509-335-9355 for information.
When the Health and Wellness Services clinic is closed, emergency care can be obtained through the hospital’s emergency department. Visit our Web site at www.hws.wsu.edu.

Student Recreation Center
The Student Recreation Center on the Pullman Campus of Washington State University is primarily dedicated to serving the full range of indoor recreational needs and interests of WSU students during their free time. The Center’s facilities and programs are designed and administered to deliver this service to all students regardless of physical ability and experience.
Drop-in, open-time recreation is the primary intended use of the center, which offers 160,000 square feet of state-of-the art recreational and fitness equipment including 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; wellness programs featuring massage therapy, personal trainers, physical assessment profiles, and weight loss program; food bar, indoor lounges with sitting areas, games, fireplace, outdoor sundeck, and other amenities.
The Student Recreation Center is also a fully-accessible gathering place for students, enriching their social life and enhancing the sense of community and wellness at Washington State University. The Center provides areas throughout the facility where students can socialize whether or not they are engaged in recreational activities.
Students taking 7 credits or more are automatic members of the SRC through a fee paid with tuition. Students with less than 7 credits can purchase membership at the SRC during operating hours. For further information, please call 509-335-UREC, or visit cub.wsu.edu/rect-center.

Transfer Center
The Transfer Center, located in Lighty Student Services Building, Room 260, 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 advising prior to and after enrolling that facilitates their enrollment, retention, and progress to graduation.
• Provides preliminary academic advising for transfer students seeking admission to WSU. Connects transfer students entering as certified majors to academic departments. Works with Career Services to assist undecided students in academic major search and selection.
• Oversees academic advising for transfer students enrolled at WSU who have not declared a major.
• Assists transfer students in developing academic goals and plans and realistically evaluating progress toward these goals.
• Conducts outreach workshops on advising, general university requirements, academic regulations, university procedures, learning, and other academic success strategies both on and off campus.
Transfer students may contact the Transfer Center at 509-335-5171, 888-978-7252, transfer@mail.salc.wsu.edu, or at salc.wsu.edu/transfer.

WSU Telephone Service for Students
The Information Technology PhoneDesk provides telephone service to all University residences and administrative offices.
Residence Halls: All residence hall phones come with an easy to use, quality voice mail system and a data connection. While there is no monthly bill for telephones in residence halls, long distance calls are paid for by the resident. Calling cards work in residence halls or students may apply for a Personal Authorization Certificate (PAC) for long distance dialing. PAC numbers work from all residence halls, and most publicly available phones on campus. With a PAC, the resident receives a monthly statement that includes a list of all long distance calls, their destination, duration, and cost. The actual bill comes through the student account and is payable at University Receivables.
University Apartment Options: University Apartment Options: Residents of university apartments, with the exception of Yakama, may select WSU Centranet phone service or contract directly with Verizon. Verizon service is not available in tandem with WSU Centranet service; students must choose one or the other.
WSU Centranet service is billed through the student account and has a lower installation fee than Verizon, but a higher monthly fee. WSU Centranet limits the caller to Sprint service; no other long distance carrier is available. This service is helpful to students sharing an apartment, as the line can be restricted to PAC use. This allows each student to be individually charged for his/her own long distance calls. The monthly charge is billed to only one student. WSU Centranet service comes with several features, such as call waiting, call forward, conference calling, etc.
Verizon service is available by contacting Verizon directly. With Verizon, a resident has his choice of long distance carrier and four different monthly service plans. While Verizon installation fees are higher than WSU Centranet service, the monthly fees are less expensive, before city and state tariffs.
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 available at Yakama apartments. If desired, analog service is also available.

Women’s Resource Center
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, contact the Women’s Resource Center, Wilson Hall, Room 8, 509-335-6849. The Women’s Resource Center is open from 8 a.m.–5 p.m., Monday–Friday. Visit our Web site at www.wsu.edu/~wrc.

Yakama Apartments:
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 available at Yakama apartments. If desired, analog service is also available.
Cooperative Courses with the University of Idaho

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

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

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

Extended University Services (EUS)

Extended University Services (EUS) is a multi-faceted organization involved in the outreach efforts of Washington State University. EUS units work with university departments and administrative units to develop and deliver distance education programs, specialized academic program support, conferencing services and professional training to people throughout the state of Washington and beyond. Visit our Web site at www.eus.wsu.edu.

Distance Degree Programs (DDP): DDP supports WSU colleges and departments in delivering bachelor's and master's degrees, professional certificates, and semester-based credit courses to adult learners in Washington and throughout North America and the world by distance learning technologies. Staff provide course design and delivery, admissions and registration, and advising services. Call 1-800-222-4978 or visit our Web site at www.distance.wsu.edu for more information.

Independent Study: As part of DDP, the Independent Study Program allows highly motivated individuals to study through flexible enrollment courses (correspondence courses). These courses may be used to fulfill requirements for baccalaureate degrees as well as for personal growth and professional development. Up to 25 percent of the credits for a baccalaureate degree may be taken through flexible enrollment courses from WSU. Catalogs are available through DDP.

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

The Central Administrative Office: The EUS Administrative Office provides overall administrative coordination for the organization and has responsibility for accounting, personnel, and travel.

Four-Year Degree Agreement Program (FYDA)

Students at Washington State University follow many diverse paths to complete a bachelor's degree. Some students, however, want to complete their degrees in four years. A Four-Year Degree Agreement (FYDA) is available to any first-time freshman entering WSU who meets the necessary conditions and chooses a participating degree program. For participating students, Washington State University agrees to provide adequate advising, available courses, and options for the timely completion of the degree.

Degree programs offering a Four-Year Degree Agreement are indicated by a FYDA next to the degree program sequence in this catalog. Students who are interested in the program may contact their departmental adviser.

International Programs (IP)

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

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

Education Abroad provides both undergraduate and graduate students with academically relevant overseas study, and exchange programs and internships.

International Students and Scholars assists international students and visiting faculty at WSU in the legal requirements and academic and social adjustments necessary for a successful educational, research, and cultural experience at WSU.

Intensive American Language Center teaches the English language to international students and scholars, many of whom then attend WSU. (See below.)

Development Cooperation has administrative responsibility for the establishment, facilitation and coordination of university research, economic development and inter-institutional coordination in developing and industrialized countries. For more information about International Programs, contact the IP Administration Office, Bryan 206, phone 509-335-2541, fax 509-335-1060, e-mail INTLPROG@wsu.edu, or visit our Web site at www.ip.wsu.edu/.

International Programs/Intensive American Language Center (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 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—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 International Programs (IALC), McAllister Hall, Room 116, phone 509-335-6675, fax 509-335-1141, e-mail ialc@wsu.edu, or visit our Web site at www.ialc.wsu.edu.
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 senior year, students may take advantage of all or part of these learning enrichment courses and services which include:

For Freshmen

Writing Tutorial – Engl 102, a one-credit repeatable course, offers students an opportunity to improve their ability to write in a student-centered group tutorial setting. The tutorial is usually connected to freshman writing courses. Contact: WSU Writing Programs, 509-335-7695, 451 Avery Hall.

The Freshman Seminar – Students who enroll in the two-credit Freshman Seminar, GenEd 104, participate in activities and projects that introduce them to researching, writing, and thinking 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: The Student Advising and Learning Center (SALC), 509-335-7421, 260 Lighty.

The Teniwe Program – Groups of students who participate in this program enroll in several courses together and live in the same residence hall. Students in the Teniwe (Nez Perce for "talk") Program are encouraged to discuss how they learn, including their research and writing processes, and what they learn in the courses they take together. Contact: Department of Residence Life, 509-335-2612, McCarten Administrative Suite, Streit-Perham Hall.

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. This course is generally linked to a second, research project-based course. Contact: University Libraries, 509-335-2691, Holland-New Library.

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: WSU Writing Programs, 509-335-7695, 451 Avery Hall.

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, 451 Avery Hall, on a walk-in basis, as well as through an online Web site, owl.wsu.edu. Contact: WSU Writing Programs, 509-335-7695, 451 Avery Hall.

Research and Writing Tutorials – 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 (SALC). Students should also contact academic departments for possible tutoring assistance. Contact: SALC, 509-335-7421, 260 Lighty.

Service Learning – The Community Service Learning Center (CSLC) provides students with opportunities to learn through thoughtful engagement in community service and to apply knowledge gained in the classroom to the well-being of individuals and their communities. Service learning experiences, such as mentoring children and youth, improving the lives of seniors, and engaging in environmental restoration, inform classroom learning, enhance civic awareness, promote personal growth, and foster skill development. Each year, many academic courses from a wide range of disciplines provide curricular service learning experiences to WSU students. Co-curricular service learning opportunities are also available to students who are not enrolled in a service learning class. Contact: CSLC, 509-335-7708 or visit our Web site, cub.wsu.edu/cslc.
Apache Point Observatory (APO)
The Apache Point Observatory (APO) includes a 3.5-meter telescope operated by the Astrophysical Research Consortium (ARC), of which WSU is a member. The telescope is located in the Sacramento Mountains in southern New Mexico and has state-of-the-art instrumentation for optical and near-infrared observing. The telescope is generally operated remotely with commands and data transferred over the Internet, although observers are required on site in some cases. Additional information about the observatory is maintained on the APO Web site, www.apo.nmsu.edu, or by calling the Program in Astronomy at 509-335-6868.

Laboratory for Atmospheric Research
The Laboratory for Atmospheric Research provides a recognized center of 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 various grant-supported research projects of the laboratory. Since atmospheric research requires an interdisciplinary approach, both the faculty within the laboratory and those who work cooperatively on joint research programs have diverse disciplinary backgrounds. 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. Visit our Web site at www.wsu.edu/NIS/ResearchFacilities.html#Laboratory-for-Atmospheric-Research.

Electron Microscopy Center (EMC)
The Electron Microscopy Center (EMC) is a research and training facility for the study of biological and non-biological materials. The EMC provides electron microscopy and laser microscopy equipment for observation and analysis of a diverse array of specimens. Students, faculty and staff can access the EMC for formal and informal training, and for conducting research through flexible conditions designed to ensure success in acquiring and analyzing specimen images. The center offers courses in electron microscopy for graduate and undergraduate students each semester.

The EMC maintains two TEMs, a STEM, a SEM, a confocal microscope and various light microscopes. Three of the electron microscopes also have EDX analyzers for elemental analysis. All necessary ancillary equipment, computers for image processing and analysis, and three photographic darkrooms are also maintained for student and faculty use. The center provides project consultation and has a skilled staff capable of assisting students and faculty in a wide range of research projects. Faculty and students are welcome to visit the EMC located on the ground floor of Science Hall. Inquiries about services and courses offered or class tours of the facilities can be made by calling 509-335-3025.

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

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

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

GeoAnalytical Laboratory
The GeoAnalytical Laboratory is a Service Center within the Geology Department which provides analytical services, primarily for geological research, but also for research in chemistry, materials science and related fields. The laboratory comprises an automated Cameca electron microprobe for quantitative elemental micro-analysis and elemental mapping, a Siemens X-ray powder diffractometer for phase identification, an automated Rigaku X-ray fluorescence sequential spectrometer and HP inductively coupled plasma mass spectrometer for major, trace and rare earth elemental analysis, and a Finnigan-MAT gas source mass spectrometer for oxygen, carbon and hydrogen isotope ratio determinations. Most of our services and equipment are available to other departments and other institutions for a reasonable fee. For more information, visit our Web site at www.wsu.edu/geo/geoAnalyticalLaboratory.html, or call 509-335-6868.

Information Technology (IT)
Information Technology (IT) is a central organization that provides services and professional expertise in support of computing, networking, voice and video communications at WSU. Many of these services are a crucial part of WSU's research infrastructure. IT provides administrative, academic, and general purpose computing services on several platforms:

- Administrative computing services are primarily on an IBM OS/390 platform. Several UNIX and Intel-based NT Server platforms are used for data warehouse and client/server applications, as well as for Web, authentication, and other network services in support of administrative computing applications.
- Academic computing services, general purpose computing services, and standard network services are on several UNIX and NT Server platforms. Electronic mail, calendar, network fax, USENET news, time, mailing lists, domain name server, Web servers, authentication servers, and some software distribution services are on Digital UNIX, HP-UX, and IBM AIX versions of UNIX or on NT Server platforms.

IT implements and operates campus data networks and wide-area networks that tie WSU sites together:

- IT supports connections to external networks such as the Internet, Internet2 and the Washington State K-20 Educational Telecommunications Network. Continuing efforts include enhancing the capabilities of Washington State University networks through the use of new networking technologies and increasing network capacity to meet growing demands.
- The distributed digital telephone switch network provides telephone and voice mail services for telephones on WSU's four campuses and the Intercollegiate College for Nursing in Spokane.
- A video distribution and switching network provides for advanced multimedia capability in general university classrooms.

For more information about IT, visit www.wsu.edu/IT/ on the Web.

International Marketing Program for Agricultural Commodities and Trade Center (IMPACT)
IMPACT is the acronym for the International Marketing Program for Agricultural Commodities and Trade established in the College of Agriculture and Home Economics in June 1985.

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

The IMPACT Center receives its funding from state, federal and private sources. Its programs are closely integrated with those of the Department of Agriculture and of WSU's College of Agriculture and Home Economics. In carrying out its mission, the IMPACT Center funds faculty and staff for both long- and short-term assignments. Personnel are housed in the appropriate academic department or outlying station. While the IMPACT Center gives assistance to departments in providing graduate-level courses in international agricultural marketing, it does not offer graduate programs. For more information, visit impact.wsu.edu.
Nuclear Radiation Center (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 Ge(Li), LEP or NaI(Tl) detector systems, and isotopic identification are available. Liquid scintillation and alpha-beta counting equipment is available also.

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 509-335-7592.

Social and Economic Sciences Research Center (SESRC)
The Social and Economic Sciences Research Center (SESRC) provides high quality social, economic, and behavioral science research services to the students, faculty, and administration at WSU, and the citizens and agencies of the state. The SESRC has three main goals: (1) to conduct research in the social, behavioral, and economic sciences that is responsive to the needs and concerns of the state, region, and local communities; (2) to provide telephone, mail, Internet, and face-to-face survey capabilities to university faculty for conducting research; and (3) to provide research training for both undergraduate and graduate students in the social sciences.

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

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

For further information about SESRC, contact us by calling 509-335-1511, sending an e-mail to sesrc@wsu.edu or by visiting our Web site at www.wsu.edu/swwrc.

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

(1) support of research in multi-disciplinary and interdisciplinary water-related studies;

(2) assistance in the education and training of undergraduate and graduate students toward degrees in water-related professions through active participation in research projects; and

(3) dissemination of results of research and other current information on water-related issues through the distribution of technical and popular publications and through the sponsorship of conferences, seminars, workshops, and other outreach activities.

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

The center has fostered extensive research on Washington state's water-related problems. Much of this research is also of regional and/or national significance. By 2000, over 420 projects had 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, P.O. Box 643002, Pullman, WA 99164-3002, or by calling 509-335-5531. Visit our Web site at www.wsu.edu/swwrc.
Admission and Financial Aid

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 the tenth day of classes for each semester.

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

It is the policy of Washington State University to admit all applicants if the total evidence (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. Students who fail to meet the published admission requirements should contact the Office of Admissions for further information. Exceptions to the admission requirements may be made only by the Admissions Subcommittee.

Application forms are available in the high schools and community colleges of Washington and from the Office of Admissions, P.O. Box 641067, Pullman, WA 99164-1067, by calling 509-335-5586, or at www.wsu.edu/admissions.

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

Retention of Students

The median grade point average for freshmen entering from high school in the fall semester 1999 was 3.41. Of the 2,487 freshmen who entered in the fall semester 1999, 2,330 were enrolled in the spring of 2000, and 2,081 continued their enrollment in the fall semester 2000.

Freshman Admission Requirements

Freshman applicants will be considered for admission on the basis of an Admissions Index (AI) which will be calculated using the high school grade point average and test information taken from the results of the Washington Pre-College Test (WPCT) if taken prior to June 1, 1989, the Scholastic Aptitude Test (SAT) or the American College Test (ACT). The AI is calculated on the official transcript information provided at the time of application. In addition, freshman applicants will be required to submit a high school transcript showing 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).
- **Science:** Two years (including at least one year of laboratory science: biology, chemistry or physics).
- **Social Science:** Three years (including at least one year of history).
- **Foreign Language:** Two years of a single foreign language (or approved sign language).
- **Fine Arts:** One year of fine, visual, or performing arts, or one additional year of academic elective.

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

Applicants who have not graduated from high school at the time of application must maintain a satisfactory record, complete all required courses specified for admission to WSU, and provide evidence of graduation prior to enrollment. Freshman applicants over 25 years of age should contact the Office of Admissions concerning requirements for re-entry students. Graduates of unaccredited high schools may be required to pass special validating examinations and should write to the Director of Admissions for further information.

Preference will be given to qualified freshman applications received by May 1. Applications for spring semester admission are accepted from September 15 to December 1 (or until the class is filled).

A complete application includes the application form, the official high school transcript, the Washington Pre-College Test Data Sheet or the score report of the SAT or ACT, and a $35 nonrefundable application fee.

Transfer Admission Requirements

Transfer students with 27 semester (40 quarter) hours of transferable college credit at time of application will normally be admitted as space allows if they show evidence of a 2.0 cumulative (C) or higher cumulative grade point average in transferable work completed at a regionally accredited post-secondary institution.

Transfer applicants with fewer than 27 semester hours of credit must also meet the admission requirements for freshmen, including meeting the current admission index (based on high school grade point average and standardized test scores) and course requirements. Students with fewer than 27 semester hours of credit should refer to the Freshman Admission section in this bulletin for details on admission requirements. In all cases, students must maintain a cumulative college grade point average of at least 2.0 in transferable work to remain eligible for admission.

For fall semester, qualified students will be offered admission on a first-come, first-served basis from September 1 to December 1 (or until the class is filled). For spring semester, qualified students will be offered admission on a first-come first-served basis from September 15 to December 1 (or until the class is filled).

Eligible transfer students who hold the approved Direct Transfer Associate Degree from a Washington or Oregon community college who apply before May 1 for fall or December 1 for spring, but after the class is filled, will be assigned a priority number to ensure priority consideration for the next available term.

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 a $35 nonrefundable application fee. Final and complete official transcripts must be submitted prior to the student's initial enrollment. Students must maintain a minimum 2.0 cumulative grade point average in all transferable credits to remain eligible for admission. Students whose cumulative grade point average falls below 2.0 in all transferable college work will not be allowed to enroll.

Transfer Credit Policy

College-level work completed at institutions which are regionally accredited is given appropriate credit upon transfer to Washington State University. The maximum transfer credit allowed from accredited two-year community or junior colleges, or from CLEP, AP, IB, or military credit shall be 60 semester (90 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. 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.

Associate Degree Transfer

Students who have completed a Direct Transfer Associate (AA) 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 GERs for graduation. The Associate of Arts - Oregon transfer degree from an Oregon community college guarantees completion of the lower-division GERs, 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 GERs as well as any departmental and college graduation requirements.

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 foreign language requirements, as re-
quired by Washington State University, must be met prior to the completion of a
baccalaureate degree. Students are responsible for checking specific major re-
quirements in the year prior to transferring.

Washington State University recognizes academic credits earned at other col-
legiate institutions which are essentially equivalent in academic level and content
to work offered at WSU. Toward this end, the university subscribes to the “Poli-
cy on Inter-College Transfer and Articulation Among Washington Public Colleges
and Universities” endorsed by the public colleges and universities of Washing-
ton 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 comple-
tion of an approved AA degree may complete the Direct Transfer Associate (AA)
degrees from a Washington or Oregon two-year college after their initial enroll-
ment at WSU.

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

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 con-
sidered for admission on the basis of alternative criteria. Students are encouraged
to contact the Office of Admissions for details.

Admission to WSU Spokane, WSU Tri-Cities, WSU Vancouver
The WSU branch campuses, located in Spokane, Tri-Cities, and Vancouver, offer
a variety of undergraduate and graduate degree programs. All three branches have
graduate education; WSU Tri-Cities and WSU Vancouver also offer baccalaure-
ate degrees.

WSU Tri-Cities and WSU Vancouver provide upper-division undergraduate ed-
ucation for individuals in those urban areas. Students need to complete their lower-
division coursework before enrolling at a branch campus. In some instances,
students are allowed to attend a local community college and a WSU branch cam-
pus concurrently. Contact the branch campus directly for more information
about this policy as well as specific admission requirements.

Academic programs offered and branch campus addresses are listed under "Branch Campuses" this catalog. Applications can be obtained from the branch
campuses or the Pullman Office of Admissions. A complete application includes
the application form, an official transcript sent directly from each college or uni-
versity attended showing work completed at the time of application, and a $35
nonrefundable application fee. Applications will not be considered or processed
after the tenth day of classes for any semester. Final and complete transcripts
must be submitted prior to the student’s initial enrollment.

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

Former Students Returning (FSR) Not Enrolled the Previous Academic Semester
Students formerly enrolled at Washington State University and who have been
absent for only one semester (excluding summer sessions), may enroll without
reapplying for admission.

Students absent for more than one semester are required to submit a FSR Ap-
plication prior to enrollment. Preference will be given to applications received
by May 1 for fall semester and December 1 for spring semester. Applications sub-
mitted after the tenth day of classes will not be considered.

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

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

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

Foreign Student Admission Requirements
Washington State University encourages the application of qualified students
from other nations to complement its cosmopolitan student community. Applic-
ants must submit TOEFL scores, evidence of adequate financial resources to meet
the costs of the proposed study, an International Undergraduate Application for
Admission, and the Educational Credential Evaluators application for secondary
and post-secondary course work completed outside of the United States. Please
contact the Office of Admissions at 509-335-5586 or at www.wsu.edu/admissions
for further information.

High School Cooperative Program
High school students may enroll as part-time students at Washington State Uni-
versity provided they are admitted to the university as space allows and pay the
appropriate fees. Such enrollment is for high school credit only.

Limited Enrollment Programs
Since academic departments may establish additional requirements for admis-
sion or certification to specific programs, eligibility for admission to Washin-
gton 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, communi-
cation, computer science, construction management, economics, education, en-
gineering, fine arts, hotel and restaurant administration, interior design, land-
scape architecture, mathematics, music, nursing, psychology, pharmacy, and
veterinary medicine are unable to accept all interested students. In these situa-
tions, and others which may arise in the future, the most highly qualified stu-
dents will be selected up to the enrollment limits in the specific programs. Stu-
dents applying for admission to selective programs should contact the Office of
Admissions regarding special requirements and application deadlines. For in-
stance, applicants for veterinary medicine must apply by October 31; pharmacy
by March 1; nursing by February 15 for fall and September 1 for spring. Dead-
lines are subject to change.

Selection of a Major
Students seeking a university degree must organize their efforts in a particular
department or group of related courses. This is the student’s major interest area.
Some academic majors have specific requirements which must be met before a
student is allowed to certify a major. These requirements are listed in the depart-
mental section of this catalog.
If an entering freshman knows with reasonable certainty what the major interest is to be, that interest may be specified on the application for admission. Students may, if they choose, defer this selection until, but not beyond, the end of the sophomore year. Each freshman is assigned an adviser in the major interest area by the Student Advising and Learning Center. This adviser 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 adviser.

Students who have met departmental certification requirements may be eligible to certify a major after the completion of 24 semester hours and a 2.0 cumulative grade point average. The chair of the major department then becomes the adviser of record.

Students with advanced standing who transfer more than 24 semester hours normally are 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 advisers in their areas of interest by the Student Advising and Learning Center.

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

Credit by Examination

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

Credit for College Board Advanced Placement (AP) examinations will be granted in an amount equal to the 100-200-level course or courses in the particular discipline tested, as approved by the specific academic department. The acceptable score for receiving credit is published in the appendix of the catalog under rule 15 for the year in which the AP examination is taken. The College Board College Level Examination Program (CLEP) may also yield credit. General and Subject Examinations will be granted credit as determined by the appropriate department. Credit will be granted for scores at the 50th percentile or above. CLEP credit will not be granted if the examination repeats previously earned college credit. No CLEP or AP credit will be granted to students with 60 or more semester hours of credit.

If a student exceeds 60 semester hours of total credit, we will still allow for completion of any GERs that have been met through the CLEP examinations. No additional numerical credit will be awarded for these courses.

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If a student exceeds 60 semester hours of total credit, we will still allow for completion of any GERs that have been met through the CLEP examinations. No additional numerical credit will be awarded for these courses.

Matriculated students 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 GERs for graduation. For further information contact the Registrar’s Office or see academic regulations printed in the Fall Time Schedule.

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 $30 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.

Estimated 2000-2001 Undergraduate Yearly Expenses

<table>
<thead>
<tr>
<th>Direct Costs</th>
<th>Resident</th>
<th>Nonresident</th>
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<tbody>
<tr>
<td>Tuition</td>
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<tr>
<td>Room and Board</td>
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<td>Indirect Costs</td>
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<td>Books/Required Fees</td>
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<tr>
<td>Transportation and Miscellaneous</td>
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</table>

Note: The above costs are subject to change by the Board of Regents or through state legislative actions.

Other Costs

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

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

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

Note: Your registration for courses at Washington State University constitutes a legal obligation to pay tuition and fees, subject to the University’s Refund Policy if you officially withdraw. You will be charged a $15 processing fee for any dishonored check drawn by you or others for your account.
Student Financial Assistance/Scholarships

Federal assistance programs include Perkins Loans, Stafford Loans, 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 on-line, you must mail the signature page to the federal processor for your application to be processed fully. Please allow 7-10 days for mail time for either the signature page and the paper FAFSA. If you miss the priority deadline, we still encourage you to apply as soon as possible. After the March 1 deadline, processing and awarding is done on a date-received basis. Loans are available to all students. Questions should be directed to the Office of Student Financial Aid, Lighty Student Services Building, Room 380, P.O. Box 641068, Pullman WA 99164-1068, 509-335-9711, fax 509-335-1385, e-mail finaid@wsu.edu, and on the Web at www.finaid.wsu.edu.

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, Lighty Student Services Building, Room 380 H, P.O. Box 641069, Pullman, WA 99164-1069, 509-335-1059, fax 509-335-6831, e-mail scholarship@wsu.edu, and on the Web at www.finaid.wsu.edu/scholar.

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 six to eleven credit hours. For graduate students, full-time enrollment is 10 credit hours and half-time enrollment is considered to be five to nine credit hours. Certain financial aid programs or policies, 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 cumulative grade point average (GPA). The complete SAP policy regarding credit hour completion, GPA, and degree completion time frame, is available at www.finaid.wsu.edu and the WSU Time Schedule each semester.

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

Students with Disabilities

The state of Washington administers several programs of assistance to 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, Olympia, WA 98504, 800-637-5627.

Federal Veterans Benefits

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. 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. Students receiving benefits may be eligible for tutorial assistance or for Veteran's 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 509-335-1857.

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 exempted from the payment of full tuition. 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.

Waiver of Fees for Persons Age 60 and Over

Applicants must be admitted to the university and obtain the fee waiver form from the Registrar’s Office, prior to registration.

Persons age 60 or over who are residents of the state of Washington may enroll under the tuition and fee waiver. Applicants will be asked to sign a statement that courses taken under the fee waiver will not be used toward credentials, salary schedule increases or degrees. Tuition-exempt students will be admitted to class on a space-available basis. All students enrolling under the fee waiver are responsible for paying a $5 nonrefundable registration fee plus any special course fees or other fees as appropriate.

Individualized instruction such as independent study, thesis, dissertation, research, internships, tutorials, private lessons, practica, or self-sustaining courses (including summer session) may not be taken under the fee waiver.

Credit Enrollments: Enrollment for credit under the fee waiver is limited to six hours per semester. Detailed procedures for credit enrollments under the fee waiver are listed in the Time Schedule.

Audit Enrollments: Auditing under the fee waiver is limited to two courses per semester. Laboratory courses may not be audited. Applicants wishing to audit should report to the Registrar’s Office during the first week of classes to obtain the permission to audit form. The instructor’s signature is required for auditing and cannot be obtained prior to the first day of classes.

Waiver of Fees for WSU Staff/Faculty

A fee waiver option is available to full-time classified staff, faculty, and exempt employees who wish to enroll for up to six credits per semester or four credits in summer session. Employees enrolling for more than the credit limit pay full fees based on residency status for all credits over the limit. Qualified personnel who wish to enroll under this program must follow regular admission procedures and present a completed staff/faculty registration authorization form at the time of enrollment. Complete information on this fee waiver program is listed in the Time Schedule or at www.registrar.wsu.edu.

Waiver of Fees for State of Washington Classified Employees

A fee waiver option is available to full-time permanent classified employees of a state agency or higher education institutions who have been certified as eligible. The state employee must be admitted to the university and submit an approved tuition waiver request form to the Registrar’s Office five working days before the beginning of each semester. Participants will be assessed a $5 nonrefundable fee and are subject to the same limitations as fee waiver students age 60 and over, listed above. Contact the branch campus registration office or the Pullman Registrar’s Office for forms, or visit our Web site at www.registrar.wsu.edu.
Housing

Twenty residence halls, including co-educational, single-sex and age-restricted halls, provide space for 4,000 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 a Scholars Hall; Wellness Hall; and a Science, Engineering, and Math Hall; as well as an International House and halls designed specifically for the success of new students. Twenty-two (Inter)National Fraternities and 15 (Inter)National Sororities currently maintain chapters ranging in size from 40 to 110 people. Most sororities and fraternities maintain chapter houses. Facilities for physically challenged students are also provided.

Students living in residence halls, fraternities and sororities elect their own officers, and each community affords many opportunities for leadership experience. The Residence Hall Association acts on behalf of the residence halls, as well as coordinates university-wide hall programming. Panhellenic and Interfraternity Council are the governing bodies for the Greek system and work together to promote scholarship and other programming activities. Residence hall information may be obtained 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, Streit-Perham Administrative Office, P.O. Box 641724, Pullman, WA 99164-1724, or visit our Web site at www.wsu.edu/hdrl/.

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, married brother or sister, aunt or uncle, and grandparents qualify as immediate family), (3) they have secured a statement from a physician that residence in a living group would have detrimental effects on the student’s physical health or emotional well-being, or (4) they would experience undue financial hardship.

Residence Halls and Dining Centers

Washington State University can normally provide space in its residence halls for most beginning students who request it. The estimated cost of room and board per person, double occupancy with a level-two dining account for the 2001–2002 academic year is $5,044. This amount is to be paid prior to registration or on an arranged installment basis. A security deposit and a signed housing and dining contract are required before space can be reserved.

A student desiring to cancel an advance room reservation and receive a partial refund of the security room deposit must notify Housing Reservations for Residence Halls, Streit-Perham Administrative Office. Once the applicant has been assigned to a hall, the security deposit is initially 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 centers. The dining centers 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, for the loss of or damage to any resident’s property, or for 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 595 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, P.O. Box 41726, Pullman, WA 99164-1726.

Single Student Apartments

The university operates 316 apartments that are available to unmarried students desiring apartment-type living. Sophomores and above are eligible for this type of housing. Apartments are rented only to groups of the same sex. Units are two-, three-, and four-bedroom and are completely furnished except for linen, kitchen utensils, cleaning equipment, and study lamps. Assignments are made from a waiting list based on the date a completed group application is received. Information and applications may be requested by calling Housing Reservations at 509-335-4577. Written requests may be mailed to: Housing Reservations, WSU Housing Services, P.O. Box 641726, Pullman, WA 99164-1726.
Tuition and Fees

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

Tuition, fees, and other charges are subject to change and are effective when established by the legislature of the state of Washington and adopted by the WSU Board of Regents. The amounts listed below were estimated at the time of publication and are for advisory purposes only. Pending legislation may result in changes following publication of this catalog.

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

#### ESTIMATED 2001-2002 REGISTRATION FEES

<table>
<thead>
<tr>
<th></th>
<th>Undergraduate</th>
<th>Graduate</th>
<th>DVM</th>
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</thead>
<tbody>
<tr>
<td><strong>FULL-TIME FEES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resident (10–18hrs)$</td>
<td>$1,902.00</td>
<td>$2,943.00</td>
<td>$4,815.00</td>
</tr>
<tr>
<td>Resident (19 hrs and above)$</td>
<td>1,902.00+</td>
<td>2,943.00+</td>
<td>4,815.00+</td>
</tr>
<tr>
<td>Resident–WAMI</td>
<td>4,737.00</td>
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<td></td>
</tr>
<tr>
<td>Nonresident (10–18 hrs)$</td>
<td>5,498.00</td>
<td>7,213.00</td>
<td>11,939.00</td>
</tr>
<tr>
<td>Nonresident (19 hrs and above)$</td>
<td>5,498.00+</td>
<td>7,213.00+</td>
<td>11,939.00+</td>
</tr>
<tr>
<td><strong>PART-TIME FEES</strong> per credit hour</td>
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<td></td>
<td></td>
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<tr>
<td>(per credit hour; minimum charge: 2 credit hours)</td>
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</tr>
<tr>
<td>Resident$</td>
<td>$190.00</td>
<td>$294.00</td>
<td>$482.00</td>
</tr>
<tr>
<td>Nonresident$</td>
<td>550.00</td>
<td>721.00</td>
<td>1,194.00</td>
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</tbody>
</table>

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**IMPORTANT NOTE:** The credit hours listed in this table are for fee purposes only. Full-time enrollment for academic purposes (including financial aid, private health insurance, etc.) is 12 graded credit hours per semester. Math 100 does not count. Tuition for students enrolled in 10-18 credit hours is capped at $1,902.00. Students enrolling in more than 18 credit hours pay an additional $175.00 per credit hour.

**ADVANCE PAYMENT** (See page 15) $50.00

**SPECIAL REGISTRATION FEES**

- High School Cooperative Program $259.00
- V M 601P and 602P $2,233.00
- Graduate Leave Status $25.00
- Auditing a Course charge for each audit hour $58.00
- (does not apply to full-fee-paying students)
- Challenging a Course charge for each challenge examination petition $179.00

(See Rule 15)

**Consult Time Schedule for additional fees related to specific courses.**

### OTHER FEES AND CHARGES

- Admission application, undergraduate (nonrefundable) $35.00
- Basic Skills Proficiency Test $35.00
- Copyright 45.00
- Cougar card, charge for replacement 5.00
- Course withdrawal (after 30th day of the semester, per class) 5.00
- Dishonored checks, service charge 15.00
- Entrance qualifying graduates of unaccredited high schools test 10.00
- Foreign language reading examination 10.00
- Foreign Student Orientation (required of all new foreign students) 25.00
- Graduate School application 35.00
- Graduate School certificates 25.00
- Graduation application, Bachelor’s degree 31.70
- Graduation application, Master’s and Doctor’s degrees 50.00
- Late payment fee 50.00
- Late payment service charge 100.00
- Late registration on or after the first day of the semester 25.00
- Late registration after 10th day of semester 100.00
- Medical expense insurance (estimated annual cost) (optional for all but foreign students) 375.00
- Microfiling (applicable to PhD and EdD degree candidates only) 75.00
- Placement Bureau Credential Service (fee assessed after graduation for each set of credentials) 3.00
- Re-enrollment fee (charged to students who pay tuition and fees after disenrollment for nonpayment) 100.00
- Replacement Diploma 50.00
- Sponsored Foreign Student Administrative Charge (each term) 225.00
- Sports Pass (optional) Fall and Spring Semester All-Sports Pass 70.00
- Fall Semester Sports Pass 60.00
- Spring Semester Sports Pass 35.00
- Student Petitions for Exceptions to Academic Calendar Deadlines 10.00
- Student Rec Center Fee (per semester) 100.00
- WSU Health and Wellness Services Fee (per semester) 69.00
- (fee assessed to every student registered for 7 credits or more)
- Teacher’s Statutory Certification 25.00
- Transcript (per copy) Regular 4.07
- Emergency/24 hrs and FAX 10.00
- Undergraduate certificates 50.00
- Veterinary Medicine application 25.00
- Washington Student Lobby (optional) 2.00

**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.

### Resident Status

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

The administration of resident status shall be the responsibility of the Board of Regents. The Office of Student Affairs is assigned the responsibility to represent the Board of Regents on questions of resident status.

A resident student is one who is either financially dependent upon a parent or legal guardian who maintains a bona fide domicile in the state of Washington or a financially independent student who maintains a bona fide domicile in the state of Washington for other than educational purposes. Financial dependence or independence shall be determined by the amount and source of student 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 includes 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 extant 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 realty, lease agreement or monthly rental receipt.
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.
Tuition and Fees

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

Applications for change in resident status and all supporting evidence must be submitted to the Office of Student Affairs 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 resident 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, institutions 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 valid driver's license or identification card; (2) is a Washington state income tax payer, and has not been a resident of Washington for more than 5 years; (3) is a graduate student enrolled in a graduate program and has been continuously enrolled for at least 4 quarters; or (4) is an immigrant having refugee classification from the U.S. Immigration and Naturalization Service or the spouse or dependent child of such a person; (5) is classified a nonresident for tuition purposes by the University, and has not been in other state(s) for at least 12 months; or (6) is a following the first day of instruction of the semester (after the 5th day of the start of instruction for special block courses). A request for refund is required on special block courses. Refunds given as an exception to this policy may be requested through the academic department which provides the course(s).

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

Optional Student Medication Insurance
Students who have optional student medical insurance and want a refund or other change must contact the Benefits Office, 232 French Administration Building (335-1759) or be liable for the premium. To request a refund, go to the Benefits & Payroll Services Office, French Administration Building, Room 232, and request that the insurance be taken off your account and that you be issued a refund.

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 and fees.

Sports Pass
Refunds, when applicable, may be obtained by applying in person by the deadline date at the Athletic Ticket Office. This refund, if approved, is then processed through Student Accounts in French Administration.

Sports Pass
For students who have not paid their tuition, 50% of the charges for tuition, operating, and student services and activities fees will be refunded in full if students officially withdraw from the University prior to the sixth day of classes during a given semester. Students who cancel their enrollment after classes have started will have those charges reduced based upon the week of cancellation as follows:

Week 2: 80% reduction  Week 7: 50% reduction
Week 3: 80% reduction  Week 8: 50% reduction
Week 4: 70% reduction  Week 9: 40% reduction
Week 5: 60% reduction  Week 10: 0% reduction
Week 6: 60% 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.

For students who have not paid their tuition, 50% of the charges for tuition, operating, and student service and activity fees will be cancelled in the last week of the semester. Students who cancel their enrollment after classes have started will have those charges reduced based upon the week of cancellation as follows:

Course Withdrawals After the 30th Day
No tuition adjustment for 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 the one credit over 18 credits.

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

Special Course Fees and Activity Fees
A full refund of special tuition and course fees will be granted to students who withdraw within the first 10 days of instruction of the semester (first five days of

REFUND POLICY

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

Week 2: 80% reduction  Week 7: 50% reduction
Week 3: 80% reduction  Week 8: 50% reduction
Week 4: 70% reduction  Week 9: 40% reduction
Week 5: 60% reduction  Week 10: 0% reduction
Week 6: 60% 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.

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

Special Course Fees and Activity Fees
A full refund of special tuition and course fees will be granted to students who withdraw within the first 10 days of instruction of the semester (first five days of

The start of instruction for second block courses) from a course requiring a Special Course Fee. There is no refund of special tuition and course fees after the 10th day of instruction of the semester (after the 5th day of the start of instruction for special block courses). A request for refund is required on special block courses. Refunds given as an exception to this policy may be requested through the academic department which provides the course(s).

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

Optional Student Medication Insurance
Students who have optional student medical insurance and want a refund or other change must contact the Benefits Office, 232 French Administration Building (335-1759) or be liable for the premium. To request a refund, go to the Benefits & Payroll Services Office, French Administration Building, Room 232, and request that the insurance be taken off your account and that you be issued a refund.

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 and fees.

Sports Pass
Refunds, when applicable, may be obtained by applying in person by the deadline date at the Athletic Ticket Office. This refund, if approved, is then processed through Student Accounts in French Administration.

Sports Pass
All Seasons Sports Pass - Full refund upon request through September 7, 2001. Partial refunds of $10.00 are available upon request through January 14, 2002.


Failure to cancel your sports pass through the Athletic Ticket Office by the stated deadlines will result in your obligation to pay whether or not you have picked up 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, Gannon/Goldsworthy 58, Thompson Hall 1, Stephenson Residential Complex 206, CUB B-25, Todd Hall 101 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 Branch Campus Students
Students may cancel their enrollment on METRO until the day prior to start of classes. To cancel enrollment after classes have started, Pullman undergraduate students must contact the Office of Student Affairs, 360 Lighty Student Services Building. Graduate students must contact the Graduate School, French Administration 364. Branch campus students must contact their appropriate Branch Campus Student Services 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 Office of Student Affairs regarding these procedures.

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

College degrees prepare professionals for careers in food production, processing, and distribution and in areas of individual and family health and well-being. 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.

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 offers an increasing number of job opportunities. Programs in agriculture and natural resource sciences prepare students for a wide variety of careers including food processing, pest management, natural resource management, business and finance, and sales and distribution of food products. Graduates are qualified to be agriculture teachers, media specialists, engineers, landscape architects, or industry representatives for agriculture or natural resources. Students who earn graduate degrees are prepared to follow scientific careers in research, college teaching, cooperative extension, and highly technical pursuits in industry and government. The College of Agriculture and Home Economics offers unique opportunities to prepare students interested in pursuing a career in veterinary medicine. Many departments, including Animal Sciences, Biological Systems Engineering, Entomology, and Natural Resource Sciences, have programs that allow students to prepare for graduation from WSU in developing an appropriate background of high school courses in biological, physical, and social sciences, mathematics, and other elective areas.

College programs in home economics (also known as human sciences) prepare students for positions as dietitians, pre-school/third grade educators, teachers for family and consumer sciences, human science agency managers, and directors of aging programs. Students may wish to prepare for careers in apparel, merchandising, interior design, consumer services, commercial food service, community health, or journalism. Graduates are prepared to teach in public schools or community colleges, to work in adult education, and to administer and supervise preschool and child care centers. Those who earn master's degrees are educationally qualified to fill positions in research, cooperative extension, governmental agencies, foreign service, college teaching, and business.

Admission

The requirements for admission to the College of Agriculture and Home Economics 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 may 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 Agriculture and Home Economics at Washington State University should concentrate as much as possible on general education and departmental requirements normally scheduled during the freshman and sophomore years, with particular attention to those subjects required for the intended majors. Students should also contact a College of Agriculture and Home Economics adviser in their area of interest.

Requirements for Graduation

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

Agriculture Degrees

Degree Department

Bachelor of Science in Agriculture

Agricultural Communications Biological Systems Engineering
Agricultural Education Biological Systems Engineering
General Agriculture Biological Systems Engineering

Bachelor of Science

Agribusiness Agricultural Economics
Agricultural Economics Agricultural Economics
(Accounting and Finance; and Food and Resource Economics)
Agricultural and Molecular Genetics and Cell Biology Molecular Biosciences
Agricultural Technology and Management Biological Systems Engineering
Animal Sciences Animal Sciences
Biological Systems Engineering Biological Systems Engineering
Crop Science Crop and Soil Sciences
Entomology Entomology
(Accounting and Finance; and Food and Resource Economics)
Environmental Science Environmental Science and Regional Planning
Food Science and Human Nutrition Food Science and Human Nutrition
Horticulture Horticulture and Landscape Architecture
Natural Resource Sciences (including tree fruit and vegetable production and ornamental horticulture)
Forestry Natural Resource Science
Natural Resources
Range Management
Wildlife Ecology
Wildland Recreation Management
Soil Science Crop and Soil Sciences
(including environmental, soil management, and sustainable agriculture)

Bachelor of Landscape Architecture

Landscape Architecture Horticulture and Landscape Architecture

Master of Arts

Agribusiness Agricultural Economics
Agricultural Economics Agricultural Economics

Master of Regional Planning

Regional Planning Environmental Science and Regional Planning
## Master of Science

<table>
<thead>
<tr>
<th>Program</th>
<th>Department</th>
<th>Program</th>
<th>Department</th>
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<td>Agriculture</td>
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<td>Animal Sciences</td>
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<td>Animal Sciences</td>
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## Doctor of Philosophy

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## Home Economics Degrees

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<td>Textiles</td>
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<td>Human Development</td>
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<td>family, family and consumer</td>
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<td>science education, and</td>
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<td>preschool-third grade education)</td>
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<td>Interior Design</td>
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<td>Master of Arts</td>
<td>Apparel, Merchandising, and</td>
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<td>Human Development</td>
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<td>Interior Design</td>
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<td>Master of Science</td>
<td>Food Science and Human Nutrition</td>
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<tr>
<td>Doctor of Philosophy</td>
<td>Nutrition</td>
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## COLLEGE OF BUSINESS AND ECONOMICS

Glenn L. Johnson, Interim Dean

The programs of the College of Business and Economics provide instruction, research, and public service. The Vision, Mission and Goals statements below guide these activities:

### Vision:

The vision of the College of Business and Economics is to be recognized and valued as an innovative leader in business education and research. We will offer the best undergraduate programs in the Northwest, provide high-quality graduate programs, produce useful research, and expand educational access.

### Mission:

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

### Goals:

To have the best undergraduate programs offered in the Northwest, expand access for both traditional and non-traditional students, and be recognized by our stakeholders as having a rigorous and high quality learning environment that produces graduates with outstanding intellectual abilities and valuable skills.

To have selected high quality graduate programs designed to satisfy market needs. To produce scholarly work that is useful in the application and creation of knowledge, enhances the educational experience of our students, is valuable to business and government, and adds to the reputation of the College of Business and Economics.

To strengthen our ties with business and government for the purposes of being responsive to their needs, securing placement and internship opportunities for our graduates, and gaining support for our core activities.

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

### Areas of Study

The college departments—the school of accounting, information systems, and business law; economics; finance; insurance and real estate; international business; marketing; and management and decision sciences—offer the following majors for the Bachelor of Arts in Business Administration degree:

- Accounting
- Accounting and Information Systems
- Business Administration
- Business Economics
- Business Law
- Decision Sciences
- Electronic Commerce
- Entrepreneurship
- Finance

Within the college a specialized Bachelor of Arts degree is offered in the area of Hotel and Restaurant Administration.

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

- Economics of Financial Markets
- Economics of Public Policy
- Economics of Regulation
- Industrial Organization, and Law

Graduate work may be taken in business administration, economics, and accounting leading to Master and Doctor of Philosophy degrees.
Minors
Minors are available in the following business administration fields: accounting, business administration, business law, decision sciences, entrepreneurship, finance, human resource/personnel, international business, management, management information systems, marketing, real estate, and risk management and insurance. Minors in economics, sustainable development, and hotel and restaurant administration are also available. For specific information regarding minor requirements, see the Business Administration, Economics, and Hotel and Restaurant Administration sections of this catalog.

Admission
All students interested in pursuing the Bachelor of Arts degree in business or hotel and restaurant administration should certify as PreBA/PreHA majors upon completion of 24 semester hours, 6 of which must be in business or economics core courses, and have a 2.0 cumulative/major grade point average. Students should certify into hotel and restaurant administration or a particular business major upon completion of 60 hours of credit and specific course and grade point average requirements (see the certification requirements in the Business Administration section of this catalog). To be eligible to enroll in 300-400-level business or hotel courses, business and hotel and restaurant students must have certified in their respective majors upon completion of 60 hours of course work. Students interested in pursuing the Bachelor of Arts in Economics may apply for certification upon completion of 30 semester hours, 6 of which must be in economics core courses.

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

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

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

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

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

Degrees: Spokane Campus
Bachelor of Arts
Master of Technology Management

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

Degrees: Vancouver Campus
Bachelor of Arts
Master of Business Administration
Master of Technology Management

Department or Area
Business Administration
Economics
Hotel and Restaurant Administration
Accounting and Business Law

Degrees: Pullman Campus
Bachelor of Arts
Master of Accounting
Master of Business Administration
Master of Technology Management

Department or Area
Business Administration
Real Estate major
Business Administration

Degrees: Spokane Campus
Bachelor of Arts
Master of Technology Management

Department or Area
Business Administration
Business Administration

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

Department or Area
Business Administration
Business Administration

Degrees: Vancouver Campus
Bachelor of Arts
Master of Business Administration
Master of Technology Management

Department or Area
Business Administration
Business Administration

SCHOOL OF ACCOUNTING, INFORMATION SYSTEMS, AND BUSINESS LAW

Robert R. Greenberg, Director

Mission:
The mission of the School of Accounting, Information Systems, and Business Law is to produce graduates who have the intellectual capabilities and skills necessary for successful careers in accounting, information systems, and business law; to critically examine, expand, and disseminate business knowledge; and to provide an educational environment that promotes the development of decision-making skills, professionalism, interaction and application of information technology, teamwork in a diverse environment, global awareness, and lifelong learning. The School recognizes that graduates need technical and conceptual accounting, information systems, and business law knowledge; decision-making skills including critical thinking, problem solving, and ethical awareness; and interpersonal skills such as effective communication, teamwork, and leadership.

Goals:
The goals of the School of Accounting, Information Systems, and Business Law are as follows:
- To have the best undergraduate accounting, information systems, and business law programs in the Northwest, which are the result of high quality faculty, curricula, and job placement.
- To have small, high quality graduate programs at the master's and doctoral levels that produce graduates who are in demand.
- To produce scholarly research that advances accounting, information systems, and business law knowledge; addresses questions relevant to the professions; enhances business education; and enhances the reputation of the School, College, and University.
- To strengthen our ties with the professions, business, and government by being responsive to their needs, especially with regard to internships and job placement.

COLLEGE OF EDUCATION

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

The college has both degree and certification programs. The College of Education offers degree programs which prepare teachers for elementary school, secondary school, and college instruction; specialists in a variety of educational fields; administrators for schools, colleges, and universities; and sport and recreation 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 coursework 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. Visit our Web site at education.wsu.edu/.
Degrees

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

Degree
Bachelor of Arts in Education
Bachelor of Arts in Sport Management
Bachelor of Science in Kinesiology

Department or Area
Teaching and Learning
Educational Leadership and Counseling Psychology
Educational Leadership and Counseling Psychology (Athletic Training and Movement Studies)
Teaching and Learning (Health and Fitness Education)

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

Degree
Master of Education
Master of Arts in Education
Master in Teaching

Areas of Specialization
Administration
Counseling
Curriculum and Instruction
Diverse Learners
Educational Psychology
Elementary Education
Literacy
Secondary Education

Bachelor of Science in Kinesiology

Exercise Science

Doctor of Education

Administration
Curriculum and Instruction
Educational Psychology
Elementary Education
Literacy

Doctor of Philosophy

Administration
Counseling Psychology
Educational Psychology
Teaching and Learning

Additional information on the College of Education and Architecture is available at www.cea.wsu.edu.

Degrees

Degrees offered in the College of Engineering and Architecture are listed below:

Degree
Bachelor of Architecture
Bachelor of Arts
Bachelor of Science

Department or Area
Architecture
Computer Science
Architectural Studies
Biological Systems Engineering
Chemical Engineering
Civil Engineering
Computer Engineering
Computer Science
Construction Management
Electrical Engineering
Manufacturing Engineering (Vancouver)
Materials Science and Engineering
Mechanical Engineering

Engineering Practice Management

Master of Science

Bachelor of Science in Kinesiology

Exercise Science

Master in Teaching

Secondary Education

Doctor of Education

Administration
Curriculum and Instruction
Educational Psychology
Elementary Education
Literacy

Doctor of Philosophy

Administration
Counseling Psychology
Educational Psychology
Teaching and Learning

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 at www.cea.wsu.edu.

College of Engineering and Architecture

Anjan Bose, Dean

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, civil and environmental engineering, electrical engineering and computer science, and mechanical and materials engineering. The biological systems engineering degree is offered by the Department of Biological Systems Engineering, which is administratively housed in the College of Agriculture and Home Economics. 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 fields of interest through employment on college research projects or internships in industry.
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 Accreditation Board for Engineering and Technology (ABET). Accreditation for the manufacturing engineering and computer engineering degrees will be sought after their first graduating classes.

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, Information Technology, Spectrographic Laboratory, the Electron Microscopy Center, Erosion Research and Outdoor Irrigation Laboratories, Food Engineering Pilot Plant, the National Science Foundation Center for Design of Analog/Digital Integrated Circuits, and the Materials Research Center.

Computer Science

Computer science has its principal bases in the engineering sciences and mathematics. Computer science encompasses the theory and techniques by which information is encoded, stored, communicated, transformed, and analyzed. It deals particularly with the theory of algorithms, the step-by-step procedures for solving a problem or accomplishing 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 Sciences Accreditation Board (CSAB). Curricular specializations available include artificial intelligence, communications, computer engineering, computer graphics, mathematics, management information systems, scientific computation, and software engineering. Students use WSU's central computers and 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. This new program will be submitted for accreditation after the first graduates have been produced.

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 studies in the school as outlined in the different curricula lead to the following degrees: Bachelor of Science in Architectural Studies (a four-year degree program); Bachelor of Science in Construction Management (a five-year professional degree program) accredited by the American Council for Construction Education (ACCE); Bachelor of Architecture (a five-year professional degree program) accredited by the National Architectural Accreditation Board (NAAB); and Master of Science in Architecture with emphasis on energy and resource 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 advisers in their indicated major for the period prior to their being certified in a major. Students may certify into a major after they have completed at least 24 semester credit hours and a prerequisite set of courses for the specific major.

Prospective students in engineering or computer science may apply for certification into the major of their choice upon completion of the applicable program requirements. Prospective students should contact the department or school administering their choice of majors to determine specific courses to be completed, application procedures, and application deadlines for certification. Factors considered in certification decisions include grades in science and math courses, grades in the major, overall grade point average, course repeats, professional experience and goals, and other indicators of the student's potential for successful completion of the curriculum. Students denied certification into an engineering program may appeal to the Dean of the College of Engineering and Architecture for a review to ensure that departmental procedures were followed. Prospective students in architecture are assigned to an architecture adviser and go through a step-by-step screening process scheduled at the end of the first and second years of their studies. Prospective students in construction management are assigned to a construction management adviser and go through a step-by-step screening process scheduled at the end of their second year of studies.

THE GRADUATE SCHOOL

Karen P. DePauw, Dean

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 such Graduate School rules and procedures as outlined on the following pages and in the Graduate School Policies and Procedures.

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

The graduate faculty consists of the President of Washington State University, the deans of the various academic units, the chairs of the academic departments and programs in which advanced degree programs are offered, and selected other members

Colleges and the Graduate School
of the faculty. Members of the graduate faculty have the responsibility of offering courses limited to graduate students, guiding graduate seminars, serving as thesis advisers and members of thesis committees, administering Graduate School examinations (master's, preliminary, and doctoral) and, from time to time, serving as members of the Graduate Studies Committee. Graduate students have opportunities for studying and working in a close professional relationship with the members of the graduate faculty who have been selected because of their special competence and interest.

**Degrees Granted**

**Doctor of Philosophy**

Programs leading to this degree are available in the following fields of study: agricultural economics, American studies, animal sciences, anthropology, biochemistry, botany, business administration, chemical engineering, chemistry, civil engineering, computer science, 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, neuroscience, nutrition, pharmacology and toxicology, physics, plant pathology, plant physiology, political science, psychology, sociology, soil science, veterinary science, and zoology.

**Doctor of Arts**

The program of study leading to the degree Doctor of Arts is offered in individual interdisciplinary studies and in mathematics.

**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.)

**Other 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 Business Administration, Master of Engineering Management, Master of Fine Arts, Master of Health Policy and Administration, Master of Nursing, Master of Public Affairs, Master of Regional Planning, Master of Technology Management, or Master of Teaching.

**Admission**

Graduates of Washington State University and other colleges and universities whose degrees are recognized by this institution and who meet the requirements for admission to the Graduate School may be admitted to the Graduate School. For necessary interpretations, inquiries should be directed to the Dean of the Graduate School. Prospective graduate students who have established superior academic records and whose degree interests are compatible with the programs offered at Washington State University are invited to apply for admission to the Graduate School. 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. 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.wsu.edu/gradsch. 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. Foreign students who have undertaken graduate study in other institutions will be admitted only after evaluation of their undergraduate records, their performance in graduate study, and the minimum criteria, as described above.

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 Continuing Education**

Credit earned in graduate-level courses taken through the WSU Office of Extended University Services 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 six 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 for undergraduate credit must obtain approval of the major adviser and the chair of the department or program in which the course is offered.

**Registration**

All graduate students must maintain continuous enrollment in the Graduate School, registering for each semester and summer session from the time of first enrollment until all requirements for the degree are completed. Continuous enrollment may be maintained by registering in one of the following categories: 1) full-time enrollment; 2) part-time enrollment; 3) graduate leave status enrollment. Students on graduate leave status may discontinue enrollment for credit for a period of 12 months without penalty. After that time, graduate leave status students will be assessed a fee of $25. Students on graduate leave status will be considered by the Graduate School to be in good standing for up to four consecutive years. Graduate leave status enrollments 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 credits 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 C grade or less may be dropped from a program, nor can a course be repeated for a higher grade if the final grade is C or higher. Any course listed on the program in which a grade of C-, D, or F is earned must be repeated.

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

**Requirements for a Graduate Degree**

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

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

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

**Time Limit**

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

Each program for a doctor's degree is considered individually. In all cases, work for the degree must be completed within three years of the date of the satisfactory completion of the preliminary examination. At least four months must elapse between preliminary and final examinations for doctoral degrees.

**Assistantships, Fellowships, and Scholarships**

Teaching and research assistantships are available in most departments offering advanced degrees, and research fellowships are granted in some departments. For the student personnel program, staff assistants are appointed each year. The *Graduate Study Bulletin* 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 enrollment in Graduate School for the duration of their appointments. Stipends vary according to the amount of required service, the extent of the student's training, and other factors. Graduate students appointed to assistantships of half-time service or more by the Board of Regents and who reside in the state of Washington while attending WSU may receive waivers of the resident operating fees and the nonresident portion of the tuition. Forms for assistantship or fellowship applications are included as part of the general application for admission to Graduate School.

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

The University Honors College (UHC) at Washington State University is one of the oldest and most well-known honors colleges in the nation. The mission of the Honors College is to offer students of high ability and initiative an enriched, four-year core curriculum that satisfies university graduation requirements. The Honors curriculum offers students the opportunity to challenge themselves in an engaged academic community in order to develop their full potential to lead and serve their local, national, and global communities. Through small classes taught by experienced and enthusiastic faculty dedicated to scholarship and learning, the Honors College helps students to develop genuine intellectual curiosity and a life-long love of learning, as well as skills in critical thinking, writing, public presentation, and information literacy. By completing an enriched series of small classes, seminars, and independent work, students admitted into the UHC 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. The UHC offers a number of advantageous opportunities for education abroad.

About 1200 students are enrolled in the University Honors College. They come from all departments and colleges of the university. The academic program of an Honors student falls into three areas: Honors requirements; major requirements; and electives. The Honors requirements provide the foundational knowledge and breadth of learning that other students acquire through the General Education Requirements. Honors students and regular students fulfill approximately the same number of required general education hours, but they do so in a different curricular sequence and different classes. Honors courses are small and taught by outstanding instructors. Highly interactive and writing intensive, Honors courses offer students the opportunity to establish close intellectual relationships with their instructors and peers.

**Admission to the University Honors College**

Each year approximately 10 percent of entering first-year students are invited to join the University Honors College. Incoming freshmen at WSU Pullman are selected on the basis of high school grade point average, scores from college and pre-college testing programs, and in some cases information obtained from the student and from high school advisers. During the spring preceding their first year, eligible students will receive letters inviting them to join the University Honors College. The eligibility of transfer and international students is evaluated on a case-by-case basis. Students who are not admitted in the initial selection may petition to enter the University Honors College at any time after the end of their first semester but no later than the beginning of their junior year. To continue participation in the UHC a student must maintain an overall B+ average (3.2). Students in the University Honors College are not required to complete the General Education Requirements. For more information on the University Honors College, please refer to the departmental section of this catalog. Visit our Web site at www.wsu.edu/~honors/.

**COLLEGE OF LIBERAL ARTS**

Barbara Couture, Dean

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

The college has the responsibility to provide course work in the arts, humanities, and social sciences for students who major in the other colleges at WSU. In this respect, an important service function is fulfilled.

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

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

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

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

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 on page 37 and 38 of this catalog.

Departmental units include anthropology, communication, comparative American cultures, English, fine arts, foreign languages and literatures, history, philosophy, political science, psychology, sociology, speech and hearing sciences, music and theatre arts and drama. In addition, several special curricula are offered and are listed alphabetically in this catalog as follows: alcohol studies, American studies, Asia program, general studies (classics, electronic media and communication, humanities, liberal arts, linguistics, religious studies, social science), Latin American studies, Russian area studies, Scandinavian area studies, social studies, social work, and women's studies.

The Prelaw Advising Center is located in the Department of Political Science. Other prelaw curricula are offered through such departments and programs as comparative American cultures, English, history, philosophy, and sociology.

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

Degree Bachelor of Arts

Department or Area
American Studies
Anthropology
Asian Studies
Communication
Comparative American Cultures
Criminal Justice
Electronic Media and Culture
English
Fine Arts
Foreign Languages and Literatures
General Studies
humanities
social sciences

Bachelor of Fine Arts
Bachelor of Music
Bachelor of Science
Master of Arts

Master of Fine Arts
Master of Science
Doctor of Philosophy

Bachelor of Science

Psychology
Political Science
Sociology
Speech and Hearing Sciences

Fine Arts
Music
American Studies
Anthropology
Communication
Criminal Justice
English
Foreign Languages and Literatures
History

History

Psychology
American Studies
Anthropology
English
History
Political Science
Psychology
Sociology

COLLEGE OF NURSING
INTERCOLLEGIATE COLLEGE OF NURSING

Dorothy M. Detlor, Dean
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 Quality Assurance Commission, is accredited by the National League for Nursing, and is approved by the American Association of Colleges of Nursing. Approximately 300 generic and registered nurse students are enrolled in the baccalaureate nursing program at Spokane, the outreach site in Yakima, and the branch campuses in Tri-Cities and Vancouver.

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

The curriculum, 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.

The Prelaw Advising Center is located in the Department of Political Science. Other prelaw curricula are offered through such departments and programs as comparative American cultures, English, history, philosophy, and sociology.
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. Application must be completed by February 15 for fall admission and September 15 for spring admission.

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

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

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

Graduate Program
Established in 1983, the Master of Nursing program prepares nurses for leadership in psychiatric/mental health nursing, community-based population focused nursing, and family nurse practitioner positions. The program is accredited by the 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 15 for spring admission.

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

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

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

COLLEGE OF PHARMACY
William E. Fassett, Dean

Admission
The College of Pharmacy offers a course of study leading to a Doctor of Pharmacy (Pharm.D.) degree. The Pharm.D. schedule of studies involves a six year commitment, consisting of two pre-pharmacy years, and four professional years. The fourth professional year of the Pharm.D. curriculum consists of experiential training, and is conducted away from the Pullman campus of Washington State University. The majority of students will complete their fourth professional year in either Spokane or Yakima. Students will gain experience in a variety of health care environments, including community, institutional, and long-term care settings. Seventy-two students are enrolled annually in the first professional year of the Pharm.D. program. Pre-pharmacy requirements are listed under Pharmacy in this catalog.

The application period each academic year is from December 1 to March 1. Because the number of applicants to the professional program exceeds the number that can be admitted, no assurance can be given that those who successfully complete the pre-pharmacy requirements will be admitted to the Doctor of Pharmacy program. 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 (Pharm.D.), Master of Science (Pharmacology and Toxicology), and Doctor of Philosophy (Pharmacology and Toxicology).

COLLEGE OF SCIENCES
Leon J. Radziewski, Dean

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

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

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


Requirements for Graduation
Graduation requirements for a bachelor’s degree include the university General Education Requirements plus additional College of Sciences requirements in arts and humanities, social sciences, and sciences. Refer to the graduation requirements on pages 37 and 38 of this catalog. 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></td>
<td>Chemistry</td>
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<td>Environmental Science</td>
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<td>General Studies</td>
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<td>biological sciences</td>
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<td>mathematics</td>
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<td>physical sciences</td>
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<td></td>
<td>Genetics and Cell Biology</td>
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<td></td>
<td>Geology</td>
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<td></td>
<td>Mathematics</td>
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<td></td>
<td>Microbiology</td>
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<tr>
<td>Master of Arts</td>
<td>Physics</td>
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<td>Master of Science</td>
<td>Zoology</td>
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<td></td>
<td>Chemistry</td>
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<td>Biology</td>
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<td>Botany</td>
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<tr>
<td></td>
<td>Environmental Science</td>
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<tr>
<td></td>
<td>Genetics and Cell Biology</td>
</tr>
<tr>
<td></td>
<td>Geological Engineering</td>
</tr>
<tr>
<td>Master of Regional Planning</td>
<td>Regional Planning</td>
</tr>
<tr>
<td>Doctor of Arts</td>
<td>Mathematics</td>
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<tr>
<td>Doctor of Philosophy</td>
<td>Biochemistry</td>
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<td>Botany</td>
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<tr>
<td></td>
<td>Chemistry</td>
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<tr>
<td></td>
<td>Genetics and Cell Biology</td>
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<tr>
<td></td>
<td>Environmental and Natural Resource Sciences</td>
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<td></td>
<td>Geology</td>
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<td></td>
<td>Materials Science</td>
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<tr>
<td></td>
<td>Mathematics</td>
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<td></td>
<td>Microbiology</td>
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<td>Physics</td>
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<td></td>
<td>Plant Physiology</td>
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<td></td>
<td>Zoology</td>
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<td>Biology</td>
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<td>Plant Physiology</td>
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<td>Zoology</td>
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Some of the graduate degree programs are jointly supported by the Colleges of Agriculture and Home Economics, Engineering and Architecture, and Veterinary Medicine, thus providing a broad base for graduate training.

COLLEGE OF VETERINARY MEDICINE
Terry F. McElwain, Interim Dean
The curriculum of the College of Veterinary Medicine prepares students for positions in the many fields of veterinary medicine, e.g., private practice, US Public Health Service, federal and state disease regulatory programs, industry, teaching, research, and military medicine. Areas studied 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 American Veterinary Medical Association.

Admission
A minimum of six years is required to obtain the degree of Doctor of Veterinary Medicine. The first two 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; and electives. All courses except biochemistry and genetics can be taken at a community college.

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

Courses designed to fit these requirements are offered by Washington State, and the number of students admitted to preveterinary 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 preveterinary curriculum will be admitted. WSU does not grant a BS in preveterinary medicine. Students taking preveterinary course work may declare a major in any subject, but are encouraged to major in animal science, biology, chemistry, microbiology, wildlife, or zoology.

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

A student seeking to enter the four-year program must fill out a VMCAS (veterinary medical college application service) application. VMCAS applications can be obtained from the Office of Student Services, College of Veterinary Medicine, Pullman, WA 99164-7012 and must be completed and returned to the VMCAS office by October 1 of the year preceding the fall semester in which the applicant wishes to enroll. Records of all applicants will be forwarded by VMCAS to the Washington Idaho (WOI) Admissions committee. The committee, 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 or denial 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:
1. To qualified students coming from homes in the states of Washington, Idaho, and Oregon.
2. To qualified students certified and financed by the Western Interstate Commission for Higher Education (WICHE) Compact states.
3. To all other qualified students.

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

Students must apply to their home state for certification in addition to 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, P.O. Drawer P, Boulder, CO 80302, 303-541-0214, www.wiche.edu.

WOI 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 and Oregon State University. The regional program involves instruction on the WSU campus, at the Caine Center (UI), and on the Oregon State University campus. Specific quotas of students from Idaho and Oregon have been established under the terms of this agreement.

Degrees
The College of Veterinary Medicine offers courses of study leading to the degrees of Doctor of Veterinary Medicine, Bachelor of Science in Veterinary Science, Bachelor of Science in Neuroscience, Master of Science in Veterinary Science, Master of Science in Neuroscience, and Doctor of Philosophy (Neuroscience and Veterinary Science).
WASHINGTON STATE UNIVERSITY SPOKANE

William H. Gray, Campus Executive Officer and Dean
Washington State University Spokane is Spokane's research university, offering graduate programs and upper-division course work, research, and service programs that give students hands-on opportunities for academic growth and professional excellence in the context of an urban land-grant campus. The university is building out the 50-acre Riverpoint campus adjacent to downtown, which has been designated a "magnet campus" by the Washington state Higher Education Coordinating Board. The Spokane Intercollegiate Research and Technology Institute (SIRTI) is also located at Riverpoint, and houses WSU courses in computer science, electrical engineering, engineering management, and a new baccalaureate completion program in computer engineering.

WSU Spokane's first specially designed facility at Spokane's Riverpoint Higher Education Park is the Phase I Classroom Building. It houses the Interdisciplinary Design Institute, a unique collaboration among the design disciplines at WSU.

A new 144,000-square-foot Health Sciences Building opened fall semester 2001. The Health Sciences Building is designed to foster research and innovation in biotechnology and the health sciences, as well as community service and teaching. It houses research laboratories, clinical space, and graduate programs in pharmacy, human nutrition, and health policy and administration. It also houses University Programs in Communication Disorders (UPCD), the joint program offered by the WSU Speech and Hearing Sciences Department and Eastern Washington University's Communication Disorders Department, and other selected EWU programs. The UPCD clinic provides a training center for graduate students, as well as a service to the community, with diagnostic and rehabilitative services for individuals of all ages with a variety of speech, language, and hearing problems.

WSU Spokane provides a unique educational environment and access to clinical populations for WSU graduate students and researchers. Student internships and clinical placements, as well as research projects with practicing clinicians, are made possible by campus partnerships with the Spokane-area medical community, including Eastern State Hospital, Deaconess Medical Center, Sacred Heart Medical Center, Veterans Hospital, Kootenai Medical Center, and Shriners Hospital. WSU Spokane's research and service roles are further achieved through other programs, institutes, and projects, including the following.

Health Research and Education Center (HREC) fosters the development of clinical and applied research in biomedical and social health arenas. The center contributes to the improvement of human health and facilitates economic development of the region by fostering innovation, technology transfer, and applied research. It serves as a link between researchers from the university, the Spokane health care community, and funding sources. HREC activities encompass the basic health sciences as well as diverse specialized areas including: patient outcome research, clinical pharmacology, neurosciences and mental health, cardiology, oncology, organ transplantation and immunity, diabetes, reproductive physiology, and radiation biology and health physics. A special feature of the HREC is a biomedical research laboratory system in conjunction with major health care institutions in Spokane, and a director of biomedical sciences development who facilitates a growing biotech sector and the commercialization of research.

The Washington Institute for Mental Illness Research and Training (WIMIRT) was established to facilitate collaboration between state government and state colleges and universities with the goal of conducting research, training, and clinical program development of direct benefit to mentally ill persons in Washington state. The eastern branch of the institute is co-located at Washington State University Spokane and Eastern State Hospital. Research activities are intended to improve the care and treatment of mentally ill individuals by determining the effectiveness of new treatment methods and evaluating the impact of changes in public policy. Education and training activities are directed toward improving the quality and competence of persons providing care and treatment to mentally ill persons. Institute staff conduct research and training in a variety of settings with both providers and consumers of mental health care.

Washington State Institute for Community Oriented Policing (WSICOP), housed at WSU Spokane, is a partnership between WSU, the Washington Associations of Sheriffs and Police Chiefs, and the Washington Criminal Justice Train-

WSICOP helps further the mission of community policing by providing training to police officials and community members, by giving technical assistance to law enforcement agencies, and by conducting research on the implementation and effects of community-oriented policing. In addition, WSICOP provides a centralized forum for information sharing and problem solving among community-oriented policing agencies and for dissemination of research findings at state and federal levels.

Western Regional Institute for Community Oriented Public Safety (WRICOPS) is a five-state partnership of Idaho, Montana, South Dakota, Washington, and Wyoming involving Peace Officer Standards and Training organizations, police and sheriffs associations, and universities. WRICOPS provides regional training, develops training curriculum, and conducts on-site assessments by utilizing a training and leadership cadre.

Area Health Education Center (AHEC) provides education and training programs for rural health professionals. Located at WSU Spokane, AHEC works with community health care providers and the university to address such issues as recruitment and retention of physicians, nurses, and other health care professionals in rural and underserved areas. WSU Spokane is further committed to assisting rural communities in maintaining high-quality health care through applied research, consultation, and the development of a clearinghouse under the auspices of the Office of Rural Health.

Small Business Development Center (SBDC) employs business development specialists from both WSU and the Community Colleges of Spokane, a combination that provides business clients with access to a broad range of resources, including long-term management and technical assistance and workshops covering vital areas of business operation. Offices of the Spokane Unit are located at SIRTI. The statewide office of the SBDC is headquartered at WSU Spokane's downtown location.

Before WSU Spokane include serving placebound students as well as full-time, traditional students; enhancing the economic development of the region; and utilizing the urban environment to provide internships and conduct research within the community. To meet these goals, courses are scheduled at convenient times for both part-time working adults and full-time students. In addition to classes taught by resident faculty, many courses delivered to WSU Spokane via the Washington Higher Education Telecommunications System (WHETS) are taught by experts on other WSU campuses.

Graduate programs and courses currently are available in these areas: architecture, computer science, criminal justice, design-build management, electrical engineering, engineering management, exercise science/kinesiology, health policy and administration, human nutrition, interior design, landscape architecture, speech and hearing sciences, and technology management. Course work and internships for student teachers and for experienced educators seeking the superintendent's credential, principal's certification, and school psychology certification also are offered at WSU Spokane. The Spokane campus is the site of the final stages of professional education for all students enrolled in pharmacy, and for many students enrolled in architecture, construction management, interior design, and landscape architecture.

The Doctor of Pharmacy at WSU Spokane is the only doctoral degree offered at a branch campus in the state. Course work also is available in a variety of other disciplines, including graduate certificate programs in aging and other specialty areas for professional development. Baccalaureate completion programs are offered or under development in a number of disciplines, including computer engineering, interior design, real estate, risk management/insurance, and hotel/restaurant administration.

For details, contact:

Enrollment Services, WSU Spokane
601 West First Avenue
Spokane, Washington 99201-3899
(509) 358-7500
enroll@wsu.edu
www.spokane.wsu.edu
WASHINGTON STATE UNIVERSITY TRICITIES
Larry James, Campus Executive Officer and Dean

WSU Tri-Cities in Richland delivers upper-division undergraduate and graduate education to the citizens of the Mid-Columbia Basin region and the neighboring counties. Students may earn advanced degrees in biology, business administration, chemistry, chemical engineering, civil engineering, communication, computer science, education, electrical engineering, engineering management, environmental engineering, environmental science, materials science and engineering, and mechanical engineering. Undergraduate degrees may be earned in agriculture, business, computer science, education, electrical engineering, environmental science, general studies (humanities, physical sciences, and social sciences), mechanical engineering, nursing, and technology management.

The majority of courses leading to a bachelor's degree in chemical engineering can be taken, as well as courses in mathematics, statistics, counseling psychology, and educational administration and supervision, among others. Certification programs in education are also offered, as well as a Master in Teaching program. Anticipated additions include a baccalaureate program in biology and course work in enology and viticulture.

Research provided through WSU Tri-Cities responds to the unique needs of the region. Major efforts include the Electronic Materials Laboratory, investigating solar cell production; and eddy current research, applying numerical modeling for non-destructive testing applications. The administrative offices for the United States Transuranium and Uranium Registries are also housed on this campus. In addition, WSU Tri-Cities provides cooperative research and internship opportunities with the U.S. Department of Energy and Hanford contractors who afford exceptional opportunities for research, providing expertise, facilities, and equipment not available at most universities.

The Food and Environmental Quality Laboratory is part of WSU's College of Agriculture and Home Economics, the USDA, the Tri-State (Washington, Oregon, Idaho) Pesticide Research Program and the federal IN-4 Program. It assists farmers, orchardists, and other pesticide users with residue analysis and risk/benefit assessment and is active in sustainable agriculture programs.

Public services also reflect the requirements of the citizens in the Mid-Columbia Basin region. WSU Radio and Television Services programming and development for KFAE-FM and KTNW-TV are facilitated through offices and studios on the Tri-Cities campus. The University Center for Professional Education provides non-credit courses and seminars. Cooperative Extension regional offices and faculty expertise are also housed on this campus. The Yakima Valley/Tri-Cities Mathematics, Engineering, Science Achievement (MESA) program prepares youth in underrepresented groups to pursue education and careers in these fields. Finally, WSU Business LINKS provides counseling, training, and mentoring to emerging and expanding businesses. It also coordinates the Business Information Center.

The Consolidated Information Center merged the WSU Tri-Cities Library with the Hanford Technical Library and provides access to the entire WSU library system. It also houses the U.S. Department of Energy-Reading Room, Business LINKS, the University Center for Professional Education, and classroom and exhibit space.

For details, contact:
Office of Student Affairs, WSU Tri-Cities
2710 University Drive
Richland, WA 99352-1671
(509) 372-7250
http://www.tricity.wsu.edu

WASHINGTON STATE UNIVERSITY VANCOUVER
Harold Dengerink, Campus Executive Officer and Dean

Located on 351 scenic acres about ten miles north of the Portland-Vancouver metropolitan area, Washington State University Vancouver provides quality education to residents of local southwest Washington and Oregon communities. With a student population of less than 2,000, WSU Vancouver offers a small college atmosphere with public university access. Since its establishment in 1989, WSU Vancouver has graduated more than 3,000 alumni who currently live and work in the region.

Degree Programs—Thirteen bachelor's and eight master's degrees are attainable through junior, senior, and graduate-level courses in more than 35 fields of study. Bachelor's degrees include biology, business administration, computer science, education, electronic media and culture, English, human development, humanities, manufacturing engineering, nursing, psychology, public affairs, and social science. 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), education (Ed.M.), engineering management (MEM), mechanical engineering (MSME), nursing (MSN), public affairs (MPA), technology management (MTM), and teaching (MT).

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

Campus and Student Life—The campus features five academic buildings, as well as a bookstore, gallery, food court, and a system of biking and pedestrian trails. Facilities also include computer, engineering, nursing, psychology, and social science laboratories, and a library carrying more than 700 journals in hardcopy and 1,100 full text online journals and newspapers, a core collection of 14,000 books, and access to more than 60 major bibliographic databases.

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

Faculty and Research—More than 80 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, eating disorders, criminal justice, child psychology, education, public affairs, and genetics among others. Quality instruction and an emphasis on individual attention also characterize the WSU Vancouver student experience, with a faculty student ratio of approximately 14 to one.

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

- The CAT Program: Partnered with Clark College in Vancouver and Lower Columbia College in Longview, the Cooperative Agreement for Transfer (CAT) program is designed to provide a smooth transition from community college lower-division studies to upper-division course work at WSU Vancouver. This approach to seamless education provides students with a long-term blueprint of their college career, and allows them to receive priority registration and university-level academic advising.

- 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.

- The Environmental Information Center (EIC): Located in the WSU Vancouver Library, the EIC is one of the largest collections of environmental information in the region. A cooperative effort among many local agencies, the EIC is a community clearinghouse for information on such topics as water resource management, natural resource protection, waste reduction and recycling, as well as energy, air, and land conservation.

For more information contact:
Office of Admissions, WSU Vancouver
14294 NE Salmon Creek Avenue
Vancouver, WA 98686
(360) 546-WSUV
www.vancouver.wsu.edu
Summary of Academic Policies

Registration
Instructions for registration and policies and procedures for dropping and adding classes are included in the Time Schedule, available in the Registrar's Office and the Student Book Corporation. 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 22 or more hours (10 hours for summer session) without written overload approval from their major department chair or Student Advising and Learning Center adviser. (See Tuition and Fees for additional credit hour charge over 18 hours.)

Cougar Cards
Cougar cards (student photo ID cards) are required for library privileges, admission to events and activities, obtaining and cashing checks, and general university use. New students will have their photos taken during orientation. The cougar card and the athletic sports pass are required for all WSU athletic events. The cougar card with validated food service privileges will be required for service in all university dining halls.

Credit
Washington State University operates on the semester calendar. Each semester is of 15-weeks duration 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 contact hour per week for each credit hour (two hours outside preparation implied); (2) studio—two contact hours per week for each credit hour (one hour of outside preparation implied); (3) laboratory—three contact hours per week for each credit hour; (4) independent study—three hours of work per week for each credit hour; (5) ensemble—four contact hours per week for each credit hour. The proportion of time in each course assigned to lecture, studio, laboratory, independent study, 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; 5 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 page 19 of this catalog.

Financial Aid: For financial aid purposes, full-time enrollment for an undergraduate student is 12 credit hours and half-time enrollment is considered to be 6-11 credit hours. For graduate students, full-time enrollment is 10 credit hours and half-time enrollment is considered to be 5-9 credit hours. Certain financial aid programs or policies such as State Need Grant, State Workstudy, 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 cumulative grade point average (g.p.a.). The complete SAP policy regarding credit hour completion, g.p.a., and degree completion time frame, is available at faoserv.finaid.wsu.edu and the WSU Time Schedule each semester.

Loan Deferments: Deferments 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 deferments, after a break in enrollment, require full-time enrollment (12 credit hours for undergraduates; 10 for graduate students). For this purpose, ten credit hours constitute full-time for a graduate student on half-time assistantship.

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

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

Foreign Students Holding F-1 Visas: The Immigration and Naturalization Service requires that nonimmigrant F-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.

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 adviser and the instructor is required. Only regularly 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-fee-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 Office of Student Affairs. Dropping all courses constitutes withdrawal from the university. 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.

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. Students are encouraged to bring to campus skills in word processing, use of spreadsheets and data bases, some ability to search the world wide web, and a preliminary understanding of information retrieval library systems.

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 prerequisite of Precalculus Algebra (Math 107), meaning that the student may not enroll for Math 171 until successfully completing Math 107. Prereqs may also be general: as one semester of chemistry or concurrent enrollment. (See Biol 103.) 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 until achieving senior standing in the major. Recommended prerequisites are listed, as well, preceded by the abbreviation: rec. Questions concerning prerequisites should be referred to the instructor of the course. Students who have not met all prerequisites may be excluded from the course, or the instructor may waive prerequisites based on demonstrated competence or equivalent academic experience.

Field Trip Guidelines
For classes or other instances in which students are expected to participate in field trips, this expectation should be included in the catalog and/or course syllabus. For classes, the reference to the field trip listed in the course syllabus should include any required fees, how travel would be accomplished, alternatives (if any), and the consequences of not participating in the required field trip.
When travel is required, the responsible faculty or staff member should arrange for the transportation. If classes are to be missed, the responsible faculty or staff member should also provide the student participants with a statement concerning absence from classes that can be given to the students' instructors. Transportation can be scheduled through the university motor pool in accordance with section 95.35, Business Policies and Procedures Manual. The university's liability coverage is provided by Chapter 4.92 of the Revised Code of Washington (RCW). In those instances where students are permitted to drive their own cars and other students are permitted to ride with them, the responsible faculty or staff member, acting as the university's representative, should request the student drivers to verify that:
1. They have valid driver's licenses.
2. They have minimum liability insurance required by the state of Washington ($25,000 bodily injury per person, $50,000 per accident, $10,000 property damage).
3. The student drivers' vehicles meet the state's standard safety requirements.
4. The passenger capacity of the vehicles will not be exceeded.
The supervising university representative should also ensure that participants are appropriately dressed and properly advised as to safety requirements for the activity involved.

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

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, hotel and restaurant administration, interior design, landscape architecture, mathematics, music, nursing, pharmacy, psychology, and veterinary medicine are unable to accept all qualified students. In these situations, and others which may arise in the future, the most highly qualified students will be selected up to the enrollment limits in the specific program.

Departments and programs designated as impacted or those units directed to raise certification standards by external or certifying agencies may require more than the minimum 24 hours for certification and a g.p.a. 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 may certify a second major or a minor with the approval of the department concerned. The student should consult with the department concerning hours and grade point requirements and an approved schedule of studies to meet such requirements.
A second major requires completion of departmental requirements for the major exclusive of General Education Requirements. A minor requires a minimum of 16 semester hours, half of which must be in upper-division course work. Upon completion of the requirements, the department will notify the Registrar's Office, and the minor or second major will be posted on the student's permanent record (transcript). A list of approved minors is published in the Time Schedule.
A student who desires to complete a second baccalaureate degree shall satisfy the second degree program and college requirements and present not less than 150 semester hours of credit. The first bachelor's degree, whether at WSU or at another accredited institution, is understood to fulfill all university 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.
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 g.p.a.) Fail.
S (Satisfactory)—no grade points. (Credit not calculated in g.p.a.) 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 midsemester indicating satisfactory progress.
P (Passing)—no grade points. (Credit not calculated in g.p.a.) A satisfactory grade for a course taken under the pass, fail grading option. (See below.) 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 for whom reasons beyond their control are unable to complete their work on time. Undergraduates or graduates who receive an I grade in an undergraduate course (100-499) have up to the end of the ensuing year to complete the course, unless a shorter interval is specified by the instructor. If the incomplete is not made up during the specified time or if the student repeats the course, the I is changed to an F. (See Rule 34.)

Faculty are required to submit an instructor's Incomplete Grade Report (IGR) to the departmental office for every I given. The IGR must specify conditions and requirements for completing the incomplete, as well as any time limitations less than one year.

W (Withdrawal Passing)—no credit or grade points. Used if the student has filed, in the Registrar’s Office, official notice of withdrawal from the course prior to the end of the 9th week, withdrew passing in accordance with Rule 69, or withdrew from the university prior to the last day of instruction. For undergraduates who enter WSU in fall 1998 or later, the maximum number of WSU withdrawals is 6, not counting withdrawals that result from the cancellation of enrollment. After the 6th withdrawal, a student may in exceptional circumstances submit a petition through the student’s major department (usually through the adviser) for additional withdrawals to be exempted from the limit of 6 withdrawals. See Appendix, Rule 68, 69.
Summary of Academic Policies

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 grades earned by pass, fail enrollees will not be included in computing the g.p.a.; however, F grades earned by pass, fail enrollees will be included in g.p.a. computations. Courses approved for S, F grading (Rule 90) 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 class. After the third week and through the last day of instruction in a semester (end of the 15th week), a pass, fail enrollment can be changed to a letter-graded 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. One course is the limit for summer session. Students in the College of Veterinary Medicine with adviser approval may enroll for a total of six courses in the professional curriculum on a pass, fail basis, subject to the regulations listed above. Allowances for transfer students are as follows:

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

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

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

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

Graduate Pass, Fail Option: Class 5 (except those working on a second baccalaureate degree) and Class 6 (graduate) students are eligible to take courses on a pass, fail basis, but such work cannot be in the student's official degree program or used for removal of a specific undergraduate deficiency. Credit hours earned under 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 and 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 their 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 g.p.a. 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

Undergraduate students are expected to maintain at least a 2.00 cumulative grade point average during their academic careers at WSU. A student who falls below a 2.00 cumulative g.p.a. or who falls below a 2.00 semester g.p.a. for two consecutive semesters is considered academically deficient.

Students in the Advisory Program of the Student Advising and Learning Center who are deficient must apply to the Student Advising and Learning Center for reinstatement. For certified majors the Student Advising and Learning Center grants to the student's academic department the decision on reinstatement. If denied reinstatement by the academic department, a student may appeal to the Student Advising and Learning Center for continued enrollment in another department.

A student whose cumulative g.p.a. is deficient for two consecutive semesters is normally dropped. A student who feels there are important extenuating circumstances can appeal to the Student Advising and Learning Center. A student whose work is improving (semester g.p.a. of 2.00 or better), even though the cumulative g.p.a. is below a 2.00 for two semesters, is usually reinstated.

All students reinstated under any of the above provisions will be on academic probation and must abide by specific probationary conditions or be subject to denial of registration in succeeding semesters.

Decertification

Once certified, a student cannot be decertified by the department unless the student becomes academically deficient under Academic Regulations, Rules 37, 38, or 39. Students decertified under these rules must meet the approved additional criteria for recertification, if any. Some departments and programs may decertify students who fall below the g.p.a. required for certification. See Appendix, Rules 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; and

5. Obtain a copy of the Washington State University policy regarding student records showing how the university meets 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, telephone numbers, 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 including number of hours enrolled, 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 Registrar's Office or in the Office of Payroll Services by the tenth day of the semester.

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.

Application for a bachelor's or DVM degree should be made at the Registrar's Office near the end of the junior year and at least 60 days prior to the expected graduation date. 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, has earned a minimum of 150 semester hours of credit, and has met the implied requirements in the paragraphs above may become a candidate for the bachelor's degree in that field of study.

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

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

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

Catalog Options and Limitations

The university requirements for graduation as published in the catalog in effect at the time of the student's initial enrollment are those which must be met for completion of an undergraduate degree program. University requirements for graduation include the General Education Requirements listed on page 39. 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 elapse between certification and graduation, the major and specific college requirements in place four years prior to graduation will apply.

Students who initiated their post-secondary education prior to fall 1991 (fall 1993 for transfer students) may, if they wish, fulfill the general university requirements for graduation as published in the 1989-91 catalog. Official name changes in degree titles will go into effect automatically for all students according to the effective date approved by the Faculty Senate. Students currently enrolled and certified in a degree program at the time of a name change will have the privilege of graduating with either the old or the new degree title. The option of selecting the old degree title will originate with the student, and it will be the responsibility of the department, in signing the degree application, to determine whether or not the student is eligible (i.e., when the student certified).

Statement of Institutional Responsibility

As a general rule, undergraduate students who are certified majors or graduate degree candidates can assume that a degree will be granted if they maintain continuous enrollment and meet all requirements as listed in Academic Regulations, Rules 114-118. However, because of serious reductions in financial support, loss of faculty, or for other significant reasons, the university may from time to time find it necessary to discontinue a degree program. When this occurs, further admission into the degree program will be frozen effective with the official action dropping the degree, and every effort will be made to allow currently enrolled majors and graduate degree candidates to complete their degrees within a reasonable period of time. To facilitate this process, department and program chairs (or the appropriate dean) have the obligation to provide for the individual needs of these students: e.g., (1) students may be encouraged to complete their requirements in similar or related degree tracks; (2) although University Requirements for Graduation and the minimum total hours for the degree may never be waived, the student's major department may waive or substitute departmental degree requirements (approval of the Graduate School required for graduate students); (3) undergraduates may be allowed to complete remaining requirements at another institution under Rule 114(a) 5. 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. While the greater part of students' courses of study will be devoted to their major field or specialization, the foundation of the undergraduate curriculum is the General Education Program. General Education is, in fact, an attempt to accommodate the increasing specialization of the university within the broader, traditional objectives of higher education while encouraging students to develop themselves to the fullest extent possible. The role of General Education in the modern higher educational curriculum is to address
needs and objectives not adequately served by academic specialization. It encompasses the following aims:

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

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

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

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

These four goals of General Education promote not only awareness of the world, but self-awareness within the students' expanding knowledge. They also encourage integration of the students' anticipated economic roles within the whole of their experience. Toward the attainment of those goals, the faculty has established minimum standards in terms of credit hours, grade points, and distribution requirements within the General Education Program. See Appendix, Rules 106-137.

Requirements for Graduation

1. Hours and grade points - a minimum of 120 semester hours with a grade point average of 2.0 or better.
2. Upper-Division (300-400 level) - a minimum of 40 semester hours
3. The University Junior Writing Portfolio—Writing Assessment at Mid-Career - Successful performance with the University's Junior Writing Portfolio is a requirement for graduation at WSU. Students may satisfy this requirement at any time between completing the Engl 101 requirement (or equivalent) and earning their sixty-first credit. Completing the Junior Portfolio involves submitting three papers from previously assigned class work plus two timed and proctored writing exercises. Students must complete the portfolio no later than the end of the first semester of upper-division standing (upon completion of 60 hours). Transfer students may elect to postpone the portfolio until they have completed at least one semester of work at WSU. The Writing Portfolio must be completed before a student enrolls in a course which satisfies the Writing in the Major requirement (see below). For details, consult the Writing Portfolio Office, (509) 335-7959, or visit http://juniorportfolio.wsu.edu.
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 require-
The General Education Program

WSU's General Education requirements are designed to complement and support students' courses of study in the major field or career area. They are also aimed at values apart from the career. realizing potentials in the individual, preparation for membership in one's community, and citizenship. WSU faculty have identified the following specific learning goals for students, which are infused into the program and curriculum:

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.

These six goals represent in abbreviated form the University's definition of an educated person. Given the uncertain nature of the future and the anticipated career changes which may occur over a lifetime, WSU aims at graduating "life-long learners" - people capable of adapting to new situations as they arise because they understand how information is gathered and organized and how knowledge is constructed in more than one specialty area.

For that reason, students are required to devote approximately a third of their coursework to subjects and disciplines outside their majors. The distribution or "breadth" requirements represent the main scholarly disciplines in which knowledge is organized. WSU's General Education Program is also organized vertically, allowing sequential study in some depth from the freshman year to the junior or senior year. Distribution requirements in the Arts and Humanities, Social Sciences, and Sciences, etc., are organized in three tiers, indicating in broad terms the academic level of the courses and the order in which they should be taken. After completing the lower-division requirements, students select an upper-division "Tier III" course which is intended to assist integration of knowledge from various knowledge domains and to permit advanced study and research outside the major. Writing instruction and writing experiences are integrated in course work throughout the three tiers.

The Structure of the General Education Program

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

Tier I: 15 semester credit hours

World Civilizations [A] GenEd 110 and 111 6
Written Communication [W] 3
Mathematics Proficiency [N] 3
Sciences [Q] 3

Tier II: 22 semester credit hours

Communication Proficiency [W], [C] 3
Arts and Humanities [H], [G] 3
Social Sciences [S], [K] 3
Arts and Humanities/Social Sciences [H], [G], [S], [K] 3
Intercultural Studies [I], [G], [K] 3
Sciences [B], [P] 7

Tier III: 3 semester credit hours

Tier III Course 3
American Diversity course [D] 3

Total hours 40

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

The Tiers in the General Education Program

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

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

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

Tier III provides the final component of sequential 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 represent an opportunity for students to integrate portions of their previous academic experience or to pursue interests at a more advanced level. They are intended to engage students in significant writing and research projects outside of their majors.

General Education and Graduation Requirements

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

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

1. American Diversity [D] — The American Diversity requirement will be met by passing a designated [D] course which also meets a GER requirement in another area at the same time. Note: This requirement is in effect for students beginning post-secondary enrollment starting fall 2000.
2. World Civilizations [A] — 6 hours (GenEd 110 and 111).
3. Communication Proficiency [C] — 6 hours including at least 3 in written communication [W] at Tier I, and 3 of [W] or [C] at Tier II. Prior to enrollment in freshman writing courses, all students must 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 the 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 Lab, Avery Hall, (509) 335-4072.
4. **Mathematics Proficiency [N]** — This requirement can be satisfied by passing a designated course or courses in mathematics (see below), through satisfactory performance on an Advanced Placement examination, or by passing a calculus course beyond Math 171.

5. **Arts and Humanities [H], [G]** — 3 hours minimum; a total of 9 hours at Tier II must be satisfied within Arts and Humanities and Social Sciences.

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

7. **Intercultural Studies [I], [G], [K]** — 3 hours at Tier II.

8. **Sciences [B], [P], [Q]** — 10 hours including at least 3 hours in Biological Sciences and 3 hours in Physical Sciences, plus 1 credit for three clock hours of laboratory. Students may elect to fulfill the science requirement by taking all 10 credits in Tier II; non-science majors are encouraged to take a Tier I science course as an elective.

9. **The University Writing Portfolio** — Successful performance with the University Writing Portfolio is a requirement for graduation at WSU. Students may satisfy this requirement, which involves submitting three papers from previously assigned class work plus two timed and proctored writing exercises, any time after successfully completing Engl 101 (or equivalent). Students must complete the portfolio no later than the end of the first semester of upper-division standing (upon completion of 60 hours). Transfer students may elect to postpone the portfolio until they have completed at least a semester of work at WSU. For details, consult the Portfolio Office, (509) 335-7959.

10. **Tier III course** — 3 hours of upper-division work. Tier III courses are 400-level and function as summations of the General Education curriculum. Please note the following:

    1. Tier III courses for General Education credit may not be taken within a student's own major.
    2. Students may take Tier III courses only after completion of the required Tier I and II courses and after earning approximately 60 total hours.
    3. Students may select a course fitting their own interests and previous academic experience.

**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** who have completed an approved Associate of Arts (AA) or Associate of Science (AS) degree at a Washington community college or an Associate of Arts—Oregon Transfer degree from an Oregon community college, including a course pattern which approximates the General Education Requirements for Graduation of Washington State University, as determined by the WSU Office of Admissions, will be 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 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.

**Total hours of General Education:** 40

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**Courses Satisfying General Education Requirements**

**AMERICAN DIVERSITY**

[D] Please Note: The American Diversity requirement will be in effect for students beginning post-secondary enrollment fall 2000 and adds no credit hours to the General Education Requirements as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course.

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

<table>
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Distribution</th>
<th>Notes</th>
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<tbody>
<tr>
<td>AMT 417</td>
<td>[T] Social and Psychological Aspects of Dress</td>
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<tr>
<td>Anth/W St 214</td>
<td>[S] Gender and Culture in America</td>
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<td>Anth 327/CAC 378</td>
<td>[H] Contemporary Native Peoples of the Americas</td>
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<td>CAC 111</td>
<td>[S] Introduction to Asian/Pacific American Studies</td>
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<td>CAC 131</td>
<td>[S] Introduction to Black Studies</td>
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<td>CAC/W St 235/Hist 205</td>
<td>[H] African American History</td>
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<td>CAC/Eng 220</td>
<td>[S] Introduction to Multicultural Literature</td>
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<td>CAC 254</td>
<td>[S] Comparative Latino/a Cultures</td>
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<td>[S] Chicana/o History</td>
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<td>[S] Race and Law in American History</td>
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<td>CAC 302</td>
<td>[S] Social Psychology of Prejudice</td>
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<td>CAC 336</td>
<td>[H] African American Folklore</td>
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<td>CAC 337</td>
<td>[S] Black Social Psychology</td>
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<td>CAC 338</td>
<td>[H] African American Cinema</td>
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<td>CAC/W St 372/Anth 312</td>
<td>[S] Native American Women in Traditional and Contemporary Societies</td>
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<td>CAC 380</td>
<td>[S] Immigration and Citizenship in the Global Economy</td>
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<td>CAC 453</td>
<td>[T] Health Issues for Chicanos/as</td>
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<td>[T] Chicano/Latino Psychology</td>
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<td>[T] Indians of the Northwest</td>
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<td>[T] Stereotypes and The Media</td>
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<td>[S] Realizing Justice in a Multi-Cultural Society</td>
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<td>[S] Peoples of the United States</td>
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<td>[S] History of Women in American Society</td>
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<td>[H] U.S. Popular Culture, 1800-1930</td>
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<td>[H] U.S. Popular Culture Since 1930</td>
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<td>[H] History of Women in the American West</td>
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<td>[H] Philosophy and Feminism</td>
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<td>[S] Cultural Diversity in Organizations</td>
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<td>[S] Psychology of Women</td>
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<td>R S 431</td>
<td>[T] The Demographics of American Diversity</td>
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<td>SHS 250</td>
<td>[S] Perspectives on Disability</td>
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<td>[T] Disability and Society</td>
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The General Education Program

Soc 101 [S] Introduction to Sociology
Soc 102 [S] Social Problems
Soc/W St 150 [S] Marital and Sexual Life Styles
Soc 340 [S] Social Inequality
Soc 343 [S] Sociology of Professions and Occupations
Soc 345 [S] Sociology of Sport
Soc/W St 351 [S] The Family
Soc 362 [S] Juvenile Delinquency
Soc 373 [S] Media, Culture, and Society
Soc/W St 384 [S] Sociology of Gender

W St/Soc 302 [S] Contemporary Masculinity and Men’s Issues
W St/Soc 484 [S] Lesbian and Gay Studies

**WORLD CIVILIZATIONS**

[A] (6 hours)
The World Civilizations Tier I core courses provide an overview of the human past and an introduction to the academic culture of the university. The course work is designed to provide integrated study of the social, political, philosophical, and religious systems of the major world civilizations, along with an introduction to their distinctive art forms. Students may explore the various offerings of World Civilizations by visiting www.wsu.edu:8080/~wldciv/.

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

**Tier I**

GenEd 110 World Civilizations I
GenEd 111 World Civilizations II

**COMMUNICATION PROFICIENCY**

[W, C] (6 hours)
Requirements in Communication Proficiency may be satisfied by courses (see below) emphasizing the improvement of communication skills in the English language in both oral and written performances. Courses designed to improve writing and speaking skills primarily in a specific discipline or profession are not eligible for GER status.

**W WRITTEN COMMUNICATION PROFICIENCY**

**Tier I**

Engl 101 Introductory Writing
Engl 105 Composition for ESL Students
Engl 198 English Composition Honors

**Tier II**

Engl 200 Expository Writing
Engl 201 Writing and Research
Engl 301 Writing and Rhetorical Conventions
Engl 302 Writing About Literature
Engl 402 Technical and Professional Writing
Engl 403 Technical and Professional Writing ESL
Phil 102 Writing and Reasoning

**C COMMUNICATION PROFICIENCY**

**Tier II**

ComSt 102 Public Speaking: Theory, Models, and Practice
ComSt 235 Principles of Group Communication
ComSt 302 Advanced Public Speaking
ComSt 324 Argumentation
H D 205 Communication in Human Relations

**MATHEMATICS PROFICIENCY**

[N] (0-6 hours)
The objectives of the Mathematics Proficiency requirement are to establish a foundation of understanding of mathematics beyond arithmetic and algebraic manipulations and to establish a foundation of understanding of the uses of mathematics in applications to real-world problems. This requirement can be satisfied by passing a designated course or courses in mathematics (see below), through satisfactory performance on an Advanced Placement examination, or by passing a calculus course beyond Math 171.

**Tier I**

Math 140 Mathematics for Life Scientists
Math 171 Calculus I
Math 202 Introduction to Mathematical Analysis
Math/Stat 205 Statistical Thinking
Math 206 Mathematical Analysis for Architects
Math 210 Introduction to Mathematics
Math 251 Mathematics for Elementary School Teachers I and
Math 252 Mathematics for Elementary School Teachers II
Stat/Math 212 Introduction to Statistical Methods

**ARTS AND HUMANITIES**

[H, G*] (3-6 hours)
Requirements in the Arts and Humanities may be satisfied by courses (see below) which study human culture as manifested in literature, languages, history, philosophy, art, music, or theatre. These courses should introduce the student to the record of human creativity and provide a basis for assessing its value and significance in human development.

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

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

**Tier II**

**Arts and Humanities [H]**

Arch I/D/L A 202 The Built Environment
Arch 220 Architectural History I
Arch 221 Architectural History II
CAC/Engl 220 [D] Introduction to Multicultural Literature
CAC 235/Hist 205/W St 235 [D] African American History
CAC 336 [D] African American Folklore
CAC 338 [D] African American Cinema
Engl 108 Introduction to Literature
Engl 199 English Composition and Literature Honors
Engl 209 Readings in English Literature
Engl 210 Readings in American Literature
Engl/Am St/Hist/W St 216 American Culture
Engl 261 Literary Masterpieces
Engl 305 Shakespeare
Engl 306 Shakespeare
Engl 308/W St 306 Introduction to Literary Criticism
Engl/W St 309 Women Writers
Engl/Hum 335 The Bible as Literature
Engl 366 The English Novel to 1900
Engl 368 The American Novel to 1900

F A 101 Introduction to Art
F A 201 World Art History
F A 202 World Art History
F A 303 Modern Art—19th Century
F A 304 Modern Art—20th Century
F A/W St 308 Women Artists I, Middle Ages-1900
F A/W St 310 Women Artists II, Twentieth Century

Fren 315 French Civilization and Culture
Fren 320 Topics in French Literature to 1700
Fren 322 Survey of French Literature after 1700
## Tier II Arts and Humanities [H] (continued)

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Hist 101</td>
<td>Classical and Christian Europe</td>
</tr>
<tr>
<td>Hist 102</td>
<td>Modern Europe</td>
</tr>
<tr>
<td>Hist 314/CAC 304</td>
<td>[D] American Roots: Immigration, Migration, and Ethnic Identity</td>
</tr>
<tr>
<td>Hist 321</td>
<td>[D] U.S. Popular Culture, 1800-1930</td>
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<tr>
<td>Hist 322</td>
<td>[D] U.S. Popular Culture Since 1930</td>
</tr>
<tr>
<td>Hist/W St 337</td>
<td>Women in the Ancient World</td>
</tr>
<tr>
<td>Hist 340</td>
<td>Ancient Greece</td>
</tr>
<tr>
<td>Hist 341</td>
<td>Rome: Republic and Empire</td>
</tr>
<tr>
<td>Hist 342</td>
<td>History of England to 1485</td>
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<tr>
<td>Hist 343</td>
<td>History of England Since 1485</td>
</tr>
<tr>
<td>Hist/CAC/W St 398</td>
<td>[D] History of Women in the American West</td>
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<table>
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<tr>
<th>Course Code</th>
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<td>Humanities in the Ancient World</td>
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<tr>
<td>Hum 103</td>
<td>Mythology</td>
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<td>Hum 198</td>
<td>Humanities in the Ancient World: Honors</td>
</tr>
<tr>
<td>Hum 302</td>
<td>Humanities in the Middle Ages and Renaissance</td>
</tr>
<tr>
<td>Hum 303</td>
<td>Reason, Romanticism, and Revolution</td>
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<td>Hum 304</td>
<td>Humanities in the Modern World</td>
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<tr>
<td>Hum 340</td>
<td>American Foundings</td>
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<tr>
<td>I D 202</td>
<td>History of Interiors I</td>
</tr>
<tr>
<td>I D 250</td>
<td>History of Interiors II</td>
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<tr>
<td>Mus 153</td>
<td>Musical Style in Composition</td>
</tr>
<tr>
<td>Mus 160</td>
<td>Survey of Music Literature</td>
</tr>
<tr>
<td>Mus 262</td>
<td>Rock Music: History and Social Analysis</td>
</tr>
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<td>Mus 362</td>
<td>History of Jazz</td>
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<td>Phil 101</td>
<td>Introduction to Philosophy</td>
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<td>Phil 198</td>
<td>Philosophy Honors</td>
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<td>Elementary Logic</td>
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<td>Philosophy of Religion</td>
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<td>Phil 220</td>
<td>Aesthetics</td>
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<td>Phil 260</td>
<td>Introduction to Ethics</td>
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<td>Phil 290</td>
<td>History of Ancient and Medieval Philosophy</td>
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<td>Phil 305</td>
<td>History of Modern Philosophy</td>
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<td>Phil 310</td>
<td>Nineteenth-century Philosophy</td>
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<td>Phil/W St 312</td>
<td>[D] Philosophy and Feminism</td>
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<td>Phil 350</td>
<td>Philosophy of Science</td>
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<td>Phil 360</td>
<td>Business Ethics</td>
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<td>Phil 365</td>
<td>Biomedical Ethics</td>
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<td>Environmental Ethics</td>
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<td>Rus 323</td>
<td>Masterpieces of Russian Literature in Translation</td>
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<td>Rus 360</td>
<td>Russian Film</td>
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<td>Scand 323</td>
<td>Masterpieces of Scandinavian Literature in Translation</td>
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<tr>
<td>Span 315</td>
<td>Hispanic Civilization</td>
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<td>Theat 160</td>
<td>Introduction to Theatre</td>
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<tr>
<td>Theat 365</td>
<td>Theatre History I: Beginnings to 1700</td>
</tr>
<tr>
<td>Theat 366</td>
<td>Theatre History II: 1700 to 1900</td>
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<tr>
<td>Theat 367</td>
<td>Musical Theatre</td>
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</table>

## Tier II Social Sciences [S, K#]

<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>
</tr>
<tr>
<td>Anth 198</td>
<td>Anthropology Honors</td>
</tr>
<tr>
<td>Anth/W St 214</td>
<td>[D] Gender and Culture in America</td>
</tr>
<tr>
<td>Anth 327/CAC 378</td>
<td>[D] Contemporary Native Peoples of the Americas</td>
</tr>
<tr>
<td>Anth 330</td>
<td>Origins of Culture and Civilization</td>
</tr>
<tr>
<td>Anth/For L 350</td>
<td>Speech, Thought and Culture</td>
</tr>
<tr>
<td>CAC 111</td>
<td>[D] Introduction to Asian/Pacific American Studies</td>
</tr>
<tr>
<td>CAC 131</td>
<td>[D] Introduction to Black Studies</td>
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<tr>
<td>CAC 254</td>
<td>[D] Comparative Latino/a Cultures</td>
</tr>
<tr>
<td>CAC/Hist/W St 255</td>
<td>[D] Chicana/o History</td>
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<tr>
<td>CAC/Hist 280</td>
<td>[D] Race and the Law in American History</td>
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<tr>
<td>CAC 302</td>
<td>[D] Social Psychology of Prejudice</td>
</tr>
<tr>
<td>CAC 335/Hist 313</td>
<td>Civil Rights Movement in America</td>
</tr>
<tr>
<td>CAC 337</td>
<td>[D] Black Social Psychology</td>
</tr>
<tr>
<td>CAC/W St 372/Anh 312</td>
<td>[D] Native American Women in Traditional and Contemporary Societies</td>
</tr>
<tr>
<td>CAC 380</td>
<td>[D] Immigration and Citizenship in the Global Economy</td>
</tr>
<tr>
<td>Com 101</td>
<td>Mass Communications and Society</td>
</tr>
</tbody>
</table>

## Tier II Social Sciences [S, K#] (3-6 hours)

Requirements in Social Sciences may be satisfied by courses (see below) with primary emphasis on the social, political, economic, and religious institutions of human society. These courses expose students to data used by the various disciplines to test, explain, or create the concepts, theories, principles, and laws underlying those institutions. These courses may focus upon how social sciences use these constructs to evaluate issues and how such knowledge enhances the understanding of human behavior within society's institutions. #[K] designates courses which meet General Education Requirements in either Social Sciences or Intercultural Studies. [D] designates courses which also fulfill the American Diversity Requirement.

## Tier II Arts and Humanities or Intercultural Studies [G]

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Anth 201</td>
<td>Art and Society</td>
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<tr>
<td>CAC 151</td>
<td>Introduction to Chicano Studies</td>
</tr>
<tr>
<td>CAC 171</td>
<td>Introduction to Native American Studies</td>
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<tr>
<td>CAC 313/Engl 311</td>
<td>Asian Pacific/American Literature</td>
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<tr>
<td>CAC 331/Engl 321</td>
<td>African American Literature</td>
</tr>
<tr>
<td>CAC 335/Engl 345</td>
<td>Chicano/Chicana Literature</td>
</tr>
<tr>
<td>CAC 373/Engl 341</td>
<td>Native American Literature</td>
</tr>
<tr>
<td>Engl 222</td>
<td>World Literature in English</td>
</tr>
<tr>
<td>FA 301</td>
<td>The Art of Africa, Native America, and the Pacific</td>
</tr>
<tr>
<td>FA/Asia 302</td>
<td>The Arts of Asia</td>
</tr>
<tr>
<td>GenEd 200</td>
<td>Studying World Civilizations Abroad</td>
</tr>
<tr>
<td>Hist/Asia 273</td>
<td>Foundations of Islamic Civilization</td>
</tr>
<tr>
<td>Hist/Asia 370</td>
<td>Civilization of Classical India</td>
</tr>
<tr>
<td>Hist/Asia 373</td>
<td>Chinese Civilization</td>
</tr>
<tr>
<td>Hist/Asia 374</td>
<td>Japanese Civilization</td>
</tr>
<tr>
<td>Mus 163</td>
<td>World Music</td>
</tr>
<tr>
<td>Mus 265/CAC 271</td>
<td>Native Music of North America</td>
</tr>
<tr>
<td>Mus/W St 363</td>
<td>Women and Music</td>
</tr>
<tr>
<td>Phil/Asia 314</td>
<td>Philosophies and Religions of India</td>
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<tr>
<td>Phil/Asia 315</td>
<td>Philosophies and Religions of China and Japan</td>
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<tr>
<td>Rus 317</td>
<td>Contemporary Russian Culture and Society</td>
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<tr>
<td>Span 316</td>
<td>Hispanic American Culture</td>
</tr>
<tr>
<td>Span 361</td>
<td>Latin American Film</td>
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<tr>
<td>Theat 145</td>
<td>Contemporary World Theatre</td>
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</tbody>
</table>

The General Education Program
### Tier II Social Sciences [S] (continued)

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Econ 101</td>
<td>Fundamentals of Microeconomics</td>
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<td>Econ 102</td>
<td>Fundamentals of Macroeconomics</td>
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<td>Econ 198</td>
<td>Economics Honors</td>
</tr>
<tr>
<td>Ger 317</td>
<td>Contemporary German Culture and Society</td>
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<tr>
<td>H D 101</td>
<td>Human Development Across the Lifespan</td>
</tr>
<tr>
<td>H D 204</td>
<td>Family Systems: Understanding Family Interaction</td>
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<tr>
<td>H D 350</td>
<td>[D] Diversity in Contemporary Families</td>
</tr>
<tr>
<td>Hist 110</td>
<td>American History to 1877</td>
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<tr>
<td>Hist 111</td>
<td>American History Since 1877</td>
</tr>
<tr>
<td>Hist 150</td>
<td>[D] Peoples of the United States</td>
</tr>
<tr>
<td>Hist 198</td>
<td>History Honors</td>
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<tr>
<td>Hist/CAC/W St 298</td>
<td>[D] History of Women in American Society</td>
</tr>
<tr>
<td>Hist 325</td>
<td>[D] Food in the United States</td>
</tr>
<tr>
<td>Hist/W St 350</td>
<td>European Women's History, 1400-1800</td>
</tr>
<tr>
<td>Hist/W St 380</td>
<td>History of Medicine</td>
</tr>
<tr>
<td>Hist 381</td>
<td>Science in Western Civilization Through Newton</td>
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<tr>
<td>Hist 382</td>
<td>Science in Western Civilization from Newton to Einstein</td>
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<tr>
<td>Phar/P/W St 250</td>
<td>The American Health Care System</td>
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</table>

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Anth 101</td>
<td>General Anthropology</td>
</tr>
<tr>
<td>Anth 203/CAC 212</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>
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<tr>
<td>Anth/W St 316</td>
<td>Gender in Cross Cultural Perspective</td>
</tr>
<tr>
<td>Anth 320/CAC 377</td>
<td>Native Peoples of North America</td>
</tr>
<tr>
<td>Anth 331/CAC 376</td>
<td>America Before Columbus</td>
</tr>
<tr>
<td>CAC 211/Hist 201</td>
<td>Asian Pacific/American History</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>
</tr>
<tr>
<td>Hist/Asia 270</td>
<td>Introduction to South Asian Culture</td>
</tr>
<tr>
<td>Hist 275/Asia 275/CAC 217</td>
<td>Introduction to East Asian Culture</td>
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<tr>
<td>Hist 308/CAC 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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<tr>
<td>Hist/W St 335</td>
<td>Women in Latin American History</td>
</tr>
<tr>
<td>R S 335</td>
<td>Cross-National Perspectives on Community</td>
</tr>
<tr>
<td>W St 220</td>
<td>Women, Science, and Culture</td>
</tr>
</tbody>
</table>

### INTERCULTURAL STUDIES

[Int, G*, K#] (3 hours)

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

In regard to substitutions by transfer students or students in approved study abroad programs, only equivalent, formal academic course work which focuses on the study of non-Western cultures or the experiences of American ethnic minorities may satisfy the Intercultural Studies requirement. That is, culture, non-Western culture, must be the formal subject of the academic course. Non-academic work, or 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 Intercultural Studies [I,G,K]

<table>
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<tr>
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<td>Anth 130</td>
<td>Great Discoveries in Archaeology</td>
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<td>Anth 201</td>
<td>Art and Society</td>
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<td>Anth 203/CAC 212</td>
<td>Peoples of the World</td>
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<td>Anth 302</td>
<td>Childhood and Culture</td>
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<td>Anth/Asia/Hist 306</td>
<td>Cultures and Peoples of the Middle East</td>
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<tr>
<td>Anth 307</td>
<td>Contemporary Cultures and Peoples of Africa</td>
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<td>Anth 309</td>
<td>Cultural Ecology</td>
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<td>Gender in Cross Cultural Perspective</td>
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<td>Anth 320/CAC 377</td>
<td>Native Peoples of North America</td>
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<td>Anth 331/CAC 376</td>
<td>America Before Columbus</td>
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<tr>
<td>CAC 101</td>
<td>Introduction to Comparative American Cultures</td>
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<td>CAC 151</td>
<td>Introduction to Chicano Studies</td>
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<td>CAC 171</td>
<td>Introduction to Native American Studies</td>
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<td>CAC 198</td>
<td>Introduction to Comparative American Cultures - Honors</td>
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<td>CAC 211/Hist 201</td>
<td>Asian Pacific/American History</td>
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<tr>
<td>CAC 227</td>
<td>Introduction to African Studies</td>
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<td>CAC 313/Engl 311</td>
<td>Asian Pacific/American Literature</td>
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<td>African American Literature</td>
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</table>
Tier II  Intercultural Studies [I,G,K] (continued)

CAC 353/Engl 345  [G] Chicano/Chicana Literature
CAC 373/Engl 341  [G] Native American Literature
Com 321  Intercultural Communication
CropS/SoilS 360  World Agricultural Systems
Engl 222  [G] World Literature in English
F A 301  [G] The Art of Africa, Native America, and the Pacific
F A/Asia 302  [G] The Arts of Asia
Fren 316  French Civilization and the Francophone World
GenEd 200  [G] Studying World Civilizations Abroad
Hist 230  [K] Latin America, The Colonial Period
Hist 231  [K] Latin America, The National Period
Hist/Asia 270  [K] Introduction to South Asian Culture
Hist/Asia 272  Introduction to Middle Eastern History
Hist/Asia 273  [G] Foundations of Islamic Civilization
Hist 275/Asia 275/CAC 217  [K] Introduction to East Asian Culture
Hist 331  [K] Cultural History in Latin America
Hist/W St 335  [K] Women in Latin American History
Hist/Asia 370  [G] Civilization of Classical India
Hist/Asia 373  [G] Chinese Civilization
Hist/Asia 374  [G] Japanese Civilization
Mus 265/CAC 271  [G] Native Music of North America
Mus/W St 363  [G] Women and Music
Phil/Asia 314  [G] Philosophies and Religions of India
Phil/Asia 315  [G] Philosophies and Religions of China and Japan
Pol S 324/CAC 339  Black Politics
RS 335  [K] Cross-National Perspectives on Community
Rus 317  [G] Contemporary Russian Culture and Society
Span 316  [G] Hispanic American Culture
Span 361  [G] Latin American Film
Theat 145  [G] Contemporary World Theatre
W St 220  [K] Women, Science, and Culture
W St 332/Anth 317  Global Feminisms

SCIENCES

[Q, B, P] (10 hours)

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

(QL) designates courses which include lab work.

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

Tier I [Q]

Astr 150  Science and the Universe
Biol 150  Genetics and Society
Chem 150  Molecules and Science
ES/RP 150  Natural Science in the Environment
Hort 150  Plants and Society
Geol 150  Conflict and Debate in Geological Sciences
Phys 150  Physics and Your World
Zool 150  Evolution

B  BIOLOGICAL SCIENCES (Tier II)

Anth 260  Introduction to Physical Anthropology
Biol 101  Direction in Biological Sciences
Biol 102 (L)  General Biology
Biol 103 (L)  Introductory Biology
Biol 104 (L)  Introductory Biology
Biol 105 (L)  Biological Science Laboratory
Biol 201  Contemporary Biology
Biol 298 (L)  Biological Science Honors
Bot 120 (L)  Introduction to Botany
Entom 101  Insects and People: A Perspective
ES/RP 101  The Environment and Human Life
FSHN 130  Nutrition for Living
MBioS 101 (L)  Introductory Microbiology
MBioS 105 (L)  Introductory Microbiology Laboratory
MBioS 320  DNA and Society
NATRS 303  Conservation of Renewable Resources
Psych 372  Introduction to Physiological Psychology
SoilS 201  Soil: A Living System
Zool 135  Animal Natural History
Zool 330  Principles of Conservation

P  PHYSICAL SCIENCES (Tier II)

Astr 135  Descriptive Astronomy
Astro/Phys 345  Principles of Astronomy
Astr 390 (L)  The Night Sky
Chem 101 (L)  Introduction to Chemistry
Chem 102 (L)  Chemistry Related to Life Sciences
Chem 105 (L)  Principles of Chemistry I
Chem 106 (L)  Principles of Chemistry II
Tier II  Physical Sciences [P] (continued)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 115 (L)</td>
<td>Chemical Principles Honors I</td>
</tr>
<tr>
<td>Chem 116 (L)</td>
<td>Chemical Principles Honors II</td>
</tr>
<tr>
<td>Chem 350 (L)</td>
<td>Chemistry in Contemporary Society</td>
</tr>
<tr>
<td>Geol 101 (L)</td>
<td>Introduction to Geology</td>
</tr>
<tr>
<td>Geol 102 (L)</td>
<td>Physical Geology</td>
</tr>
<tr>
<td>Geol 180 (L)</td>
<td>Honors Geology</td>
</tr>
<tr>
<td>Geol 210 (L)</td>
<td>Evolution and Earth History</td>
</tr>
<tr>
<td>Geol 322</td>
<td>Geology of the Pacific Northwest</td>
</tr>
<tr>
<td>Geol 323 (L)</td>
<td>Geology of the Pacific Northwest</td>
</tr>
<tr>
<td>Geol 390</td>
<td>Living on the Edge: Global Climate Change</td>
</tr>
<tr>
<td></td>
<td>and Earth History</td>
</tr>
<tr>
<td>Phys 101 (L)</td>
<td>General Physics</td>
</tr>
<tr>
<td>Phys 102 (L)</td>
<td>General Physics</td>
</tr>
<tr>
<td>Phys 201 (L)</td>
<td>Physics for Scientists and Engineers</td>
</tr>
<tr>
<td>Phys 202 (L)</td>
<td>Physics for Scientists and Engineers</td>
</tr>
<tr>
<td>Phys 205 (L)</td>
<td>Physics for Scientists and Engineers I -</td>
</tr>
<tr>
<td></td>
<td>Honors</td>
</tr>
<tr>
<td>Phys 206 (L)</td>
<td>Physics for Scientists and Engineers II -</td>
</tr>
<tr>
<td></td>
<td>Honors</td>
</tr>
<tr>
<td>Phys 380</td>
<td>Physics and Society</td>
</tr>
</tbody>
</table>

TIER III COURSES

[T] (3 hours)

Tier III courses provide the final component of sequential study in general education. The Tier III course is designed to assist students in integrating course work at a more advanced (upper-division) level. The Tier III course, taken in the junior or senior year, is intended to permit focused study within a body of related course work. All Tier III courses are 400 level and are normally designated by the [T] GER indicators. They have as a general prerequisite 60 hours of course work and completion of one Tier I and three Tier II courses. Additional prerequisites for specific courses are listed below when applicable.

Many of the Tier III courses employ an interdisciplinary approach to topical issues or other subject matter. Other courses may be grounded in the methodologies of the sciences, the social sciences, or the arts and humanities.

[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—especially the study of living systems and their interactions with the environment (ecology)—as well as a solid background in mathematics. Familiarity with intellectual history or the history of science—including theories of the development and nature of the universe; the history of planet earth and the solar system—is also useful. Students are expected to bring an understanding of the fundamental structures of matter and the principles governing the transformations of matter and energy to these capstones. The capstones typically examine the process by which human beings have developed their understanding of the universe over time.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astr 450</td>
<td>The Search for Extraterrestrial Life</td>
</tr>
<tr>
<td>Biol 401</td>
<td>Plants and People (Prereq Biol 102, 104, or Bot 120)</td>
</tr>
<tr>
<td>C E 401</td>
<td>Global Climate Change</td>
</tr>
<tr>
<td>Entom 401</td>
<td>Invertebrates in Biological Thought (Prereq Biol 104; Rec Zool 150)</td>
</tr>
<tr>
<td>FSHN 444</td>
<td>Applied Nutrition in Health Science (Prereq biol, chem, soc, or psych)</td>
</tr>
<tr>
<td>MBioS 425</td>
<td>Origins of Life</td>
</tr>
<tr>
<td>MSE 440</td>
<td>Materials: The Foundation of Society and Technology</td>
</tr>
</tbody>
</table>

PharP 483  Human Body Systems  (Prereq FSHN 130 or Micro 101; introductory biology)

Zool/W St 407  Biology of Women  (Prereq Biol 102, 103, or 298; junior standing)

TIER III COURSES USING SOCIAL SCIENCE METHODS

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>Ag Ec 420</td>
<td>Growth and Change in the American West</td>
</tr>
<tr>
<td></td>
<td>(Prereq Ag Ec 201 or Econ 101)</td>
</tr>
<tr>
<td>AMT 417</td>
<td>[D] Social and Psychological Aspects of Dress</td>
</tr>
<tr>
<td>Anth 404</td>
<td>The Self in Culture</td>
</tr>
<tr>
<td></td>
<td>(Prereq 100-level Anth, Psych, or Soc)</td>
</tr>
<tr>
<td>Anth 405</td>
<td>Medical Anthropology</td>
</tr>
<tr>
<td>Anth 417</td>
<td>Anthropology and World Problems</td>
</tr>
<tr>
<td></td>
<td>(Prereq 3 hours Anth)</td>
</tr>
<tr>
<td>Anth 468</td>
<td>Sex, Evolution, and Human Nature</td>
</tr>
<tr>
<td></td>
<td>(Prereq 3 hours Anth or Bio 5)</td>
</tr>
<tr>
<td>CAC 405/Engl 410</td>
<td>Cultural Criticism and Theory</td>
</tr>
<tr>
<td>CAC 439/Pol S 474</td>
<td>African Politics</td>
</tr>
<tr>
<td>CAC 440</td>
<td>Social Justice and American Culture</td>
</tr>
<tr>
<td>CAC 453</td>
<td>[D] Health Issues for Chicano/as</td>
</tr>
<tr>
<td>CAC/W St 454</td>
<td>La Chicana in US Society (Prereq junior standing)</td>
</tr>
<tr>
<td>CAC/CoPsy 457</td>
<td>[D] Chicano/Latino Psychology</td>
</tr>
<tr>
<td></td>
<td>(Psych 105, EdPsy 401, Soc 101, H D 101, or interview with instructor)</td>
</tr>
<tr>
<td>CAC 470</td>
<td>Federal Native American Resource Settlement Models</td>
</tr>
<tr>
<td>CAC 475/Hist 408</td>
<td>[D] Indians of the Northwest</td>
</tr>
<tr>
<td>Com 471/CAC 404</td>
<td>[D] Stereotypes and The Media</td>
</tr>
<tr>
<td>Cpt S 401</td>
<td>Computers and Society</td>
</tr>
<tr>
<td></td>
<td>(Prereq Cpt S 105, 150, 153, 203, 241, or 251; Phil 260 or Soc 101)</td>
</tr>
<tr>
<td>Crm J/W St 403</td>
<td>Violence Toward Women</td>
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<tr>
<td></td>
<td>(Prereq Crm J 101 or W St 200)</td>
</tr>
<tr>
<td>Econ 418</td>
<td>Global Capitalism Today: Perspectives and</td>
</tr>
<tr>
<td></td>
<td>Issues</td>
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<tr>
<td></td>
<td>(Prereq GenEd 111; Econ 101 or 102)</td>
</tr>
<tr>
<td>H D 403</td>
<td>Families in Poverty</td>
</tr>
<tr>
<td></td>
<td>(Prereq H D 101, 204 or 6 hours in H D or social sciences)</td>
</tr>
</tbody>
</table>

Hist 409  American Environmental History

Hist 425  The City in History

Hist 435  European Expansion Overseas, 1400-1800

Hist 436  Imperialism in the Modern World

Hist 444  The Renaissance

Hist/Bus 466  History of the Cold War, 1944-present

Hist/Asia 470  Gandhi: India and the United States

Hist/Asia 473  The Middle East and the West

Hist 483  Technology and Social Change to 1950

Hist 491  History of World Trade

Hist 492  Cultural Appetites: Food in World History

Hist 495  Space, Place, and Power in History: Historical Geography in Global Perspective
The General Education Program

**Tier III Courses Using Social Science Methodologies (continued)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jour 405</td>
<td>The Costs of Free Speech</td>
<td>(Prereq junior standing)</td>
</tr>
<tr>
<td>Pol S 428</td>
<td>Issues in Political Psychology</td>
<td>(Prereq Pol S 101 or Psych 105)</td>
</tr>
<tr>
<td>Pol S 430</td>
<td>The Politics of Natural Resource and Environmental Policy</td>
<td></td>
</tr>
<tr>
<td>Psych 492</td>
<td>Psychology of Language</td>
<td>(Prereq Psych 105)</td>
</tr>
<tr>
<td>RS 431</td>
<td>[D] The Demographics of American Diversity</td>
<td>(Prereq junior standing)</td>
</tr>
<tr>
<td>SHS 489</td>
<td>[D] Disability and Society</td>
<td></td>
</tr>
<tr>
<td>Soc 415</td>
<td>Ecology of Human Societies</td>
<td>(Prereq Anth 101 or Soc 101; ES/RP 101)</td>
</tr>
<tr>
<td>Soc 430</td>
<td>Society and Technology</td>
<td></td>
</tr>
<tr>
<td>Soc 433</td>
<td>Urbanization and Community Organization</td>
<td>(Prereq 3 credits 300-400-level social science)</td>
</tr>
<tr>
<td>Soc 442</td>
<td>Political Sociology</td>
<td></td>
</tr>
<tr>
<td>Soc 455</td>
<td>Human Values</td>
<td>(Prereq Psych 105 or Soc 101; Psych 350)</td>
</tr>
<tr>
<td>Soc 474</td>
<td>Collective Behavior and Social Movements</td>
<td>(Prereq three 300-400-level Soc or Pol S courses)</td>
</tr>
<tr>
<td>W St 406</td>
<td>Women and Work</td>
<td>(Prereq W St 200)</td>
</tr>
<tr>
<td>W St 460</td>
<td>Gender, Race, and Nature in America</td>
<td>(Prereq W St 200 or 300)</td>
</tr>
<tr>
<td>W St/Soc 484</td>
<td>[D] Lesbian and Gay Studies</td>
<td>(Prereq Soc 101, 102, or W St 200)</td>
</tr>
</tbody>
</table>

**TIER III COURSES EMPLOYING THE METHODS OF THE ARTS AND HUMANITIES**

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>Am St 410</td>
<td>Cities in Fiction</td>
</tr>
<tr>
<td>Am St/Engl 471</td>
<td>Cultural Politics Since World War II</td>
</tr>
<tr>
<td>Am St/Engl 472</td>
<td>Ecological Issues and American Nature</td>
</tr>
<tr>
<td>Arch 428</td>
<td>Writing</td>
</tr>
<tr>
<td>Eng/W St 409</td>
<td>Women Writers in the American West</td>
</tr>
<tr>
<td>Eng 415</td>
<td>Traditions of Comedy and Tragedy</td>
</tr>
<tr>
<td>Eng 419</td>
<td>The Twentieth Century Novel</td>
</tr>
<tr>
<td>Eng/Am St 470</td>
<td>Literature and Culture of the American West</td>
</tr>
<tr>
<td>For L 422</td>
<td>Twentieth-Century Issues in German and Latin American Film and Literature</td>
</tr>
<tr>
<td>Hum 410</td>
<td>Love in the Arts</td>
</tr>
<tr>
<td>Phil 430</td>
<td>Philosophy of Art</td>
</tr>
<tr>
<td>Phil 435</td>
<td>East/West Philosophy of Architecture</td>
</tr>
<tr>
<td>Phil 440</td>
<td>Mind of God and the Book of Nature: Science and Religion</td>
</tr>
<tr>
<td>(Prereq completion of science GERs)</td>
<td></td>
</tr>
<tr>
<td>Rus 430</td>
<td>St. Petersburg</td>
</tr>
<tr>
<td>Rus 460</td>
<td>Russian Film</td>
</tr>
</tbody>
</table>

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

101 The Air Force Today I 2 (1-2) Introduces students to the Air Force and AFROTC. Leadership Laboratory is mandatory for AFROTC. (Aero 102 complements 101).

102 The Air Force Today II 2 (1-2) Introduces students to the Air Force and AFROTC. Leadership Laboratory is mandatory for AFROTC. (Aero 102 complements 101).

201 The Air Force Way I 2 (1-2) Examines general aspects of air and space power through a historical perspective. Leadership Laboratory is mandatory for AFROTC.

202 The Air Force Way II 2 (1-2) Examines general aspects of air and space power through a historical perspective. Leadership Laboratory is mandatory for AFROTC.

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

474 General Military Procedure 4 (3-2) Examines national security, regional studies, advanced leadership ethics, professional knowledge, Air Force personnel and evaluation systems, and leadership ethics. Leadership Laboratory is mandatory for AFROTC.

475 Air Force Management and Leadership I 4 (3-2) Examines leadership, management, professional knowledge, Air Force personnel and evaluation systems, and leadership ethics. Leadership Laboratory is mandatory for AFROTC.

482 Air Force Management and Leadership II 4 (3-2) Examines leadership, management, professional knowledge, Air Force personnel and evaluation systems, and leadership ethics. Leadership Laboratory is mandatory for AFROTC.

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

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

411 National Security Affairs/Preparation for Active Duty I 4 (3-2) Examines national security, regional studies, advanced leadership ethics, and Air Force doctrine. A mandatory Leadership Laboratory complements this course.

412 National Security Affairs/Preparation for Active Duty II 4 (3-2) Examines national security, regional studies, advanced leadership ethics, and Air Force doctrine. A mandatory Leadership Laboratory complements this course.

499 Special Problems 3 Same as S W 499.

Program in Aging

Interim 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
4. To further university and societal goals of equity for persons of all ages.

The program offers a minor in aging. The minor requires a minimum of 18 hours of credit including H D 203 or 305; FSHN 130; Psych/Aging 363; Soc 356 or S W/Aging 396, and approved aging-related courses (6 hours) to be selected from a list of recommended courses available from the program chair. Students must obtain approval of their course selection from the program chair. To register for the Program in Aging, students need to contact the program chair, M. Young at (509) 335-9203.

A certificate in aging is granted to students who complete the minor in aging with a G.P.A. of at least 2.5 and an internship experience. The internship with a focus on aging must be completed either in human development or alcohol studies and may require additional prerequisites. All internships must be approved by the chair of the program prior to their initiation.

Description of Courses

Aging

305 Gerontology 3 Same as H D 305.

363 Psychology of Aging 3 Same as Psych 363.

396 Social Work with the Aging 3 Same as S W 396.

412 Environment and Aging 3 Exploration of the relationship between the processes of aging and the physical environment within an environmental and behavior perspective. Cooperative course taught by UI (Arch 412), open to WSU students.

Financial Aid and Scholarships. Air Force ROTC offers enrollment 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 $200 per month stipend during fall and spring semesters. Two-year program applicants can compete for a two-year scholarship. All Air Force ROTC students contracted in the POC receive a $200 per month stipend during fall and spring semesters. All 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 two-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 two-year student attends a special six-week summer field training (Aero 292) and then completes the Professional Officer Course. The two-year program is designed for any student having at least two years left in the university, but who has no previous AFROTC or military service.

General Military Course (GMC). This sequence of courses consists of four 2-credit courses normally taken during the freshman and sophomore years. The GMC sequence prepares the student for field training and the Profession 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 4-credit 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.

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
4. To further university and societal goals of equity for persons of all ages.

The program offers a minor in aging. The minor requires a minimum of 18 hours of credit including H D 203 or 305; FSHN 130; Psych/Aging 363; Soc 356 or S W/Aging 396, and approved aging-related courses (6 hours) to be selected from a list of recommended courses available from the program chair. Students must obtain approval of their course selection from the program chair. To register for the Program in Aging, students need to contact the program chair, M. Young at (509) 335-9203.

A certificate in aging is granted to students who complete the minor in aging with a G.P.A. of at least 2.5 and an internship experience. The internship with a focus on aging must be completed either in human development or alcohol studies and may require additional prerequisites. All internships must be approved by the chair of the program prior to their initiation.

Description of Courses

Aging

305 Gerontology 3 Same as H D 305.

363 Psychology of Aging 3 Same as Psych 363.

396 Social Work with the Aging 3 Same as S W 396.

412 Environment and Aging 3 Exploration of the relationship between the processes of aging and the physical environment within an environmental and behavior perspective. Cooperative course taught by UI (Arch 412), open to WSU students.

Laboratory is mandatory for AFROTC. (Aero 102 complements 101).

Financial Aid and Scholarships. Air Force ROTC offers enrollment 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 $200 per month stipend during fall and spring semesters. Two-year program applicants can compete for a two-year scholarship. All Air Force ROTC students contracted in the POC receive a $200 per month stipend. Contracted POC, not already awarded a stipend. Contracted POC, not already awarded a stipend. Contracted POC, not already awarded a stipend. Contracted POC, not already awarded a stipend. Contracted POC, not already awarded a stipend.
Department of Agricultural Economics


The department offers programs leading to the degrees of Bachelor of Science in Agribusiness, Bachelor of Science in Agricultural Economics, Master of Arts in Agribusiness, Master of Arts in Agricultural Economics, and Doctor of Philosophy (Agricultural Economics).

Bachelor’s Program

The undergraduate programs are designed to provide the basic knowledge and tools necessary to secure professional positions in agriculture and agribusiness. The various curricula are structured to lead to different professional careers. Agricultural economics deals with economic issues related to food and fiber supply and demand and the natural resource base that supports agricultural production and other needs of society. 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 agricultural economics, 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 relevant to solving broader economic and social problems facing production agriculture and society in general.

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.

Major fields of emphasis and courses leading to degrees in agribusiness and agricultural economics include farm and ranch management, agribusiness management, agricultural marketing, resource economics, economic development, agricultural policy, and quantitative methods.

Students majoring in agricultural economics may emphasize one or more of the fields within agricultural economics, or may obtain a general background in agricultural economics. Students majoring in agribusiness emphasize agricultural economics courses in agribusiness, marketing and prices, finance, and other courses which provide a background for an understanding of production agriculture. Agribusiness majors complement their courses in agricultural economics with business and accounting courses.

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 agricultural economics or agribusiness.

Employment Opportunities

Majors in agricultural economics and agribusiness find employment in private industry, in government agencies, and with universities. Opportunities to work in foreign countries are also available. Graduates find a wide variety of career opportunities such as farm operators, professional farm or agribusiness managers, county agricultural agents, agricultural representatives for financial institutions, market analysts, field representatives and managers in agribusiness firms, economists for state and federal agencies, foreign agricultural specialists, and as private consultants. A number of students take graduate work to broaden their career opportunities.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

The following schedules set forth the general requirements for the two Bachelor of Science degrees: Bachelor of Science in Agricultural Economics and Bachelor of Science in Agribusiness. Under the agricultural economics degree there are two options: agricultural production and resource management, and food and resource economics. General Education Requirements are met in the department requirements listed for all curricula. Students should consult their advisers for the appropriate sequencing of courses as well as for the selection of electives that best suit their needs and interests. Illustrative programs are available from the department.

At least 40 of the total hours required for the bachelor’s degree in these programs must be in 300-400-level courses.

FIRST YEAR REQUIREMENTS

The first year requirements are common to all agricultural economics and agribusiness degree programs:

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 201 [S] (GER)</td>
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<td>3</td>
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<tr>
<td>Econ 102 [S] (GER)</td>
<td></td>
<td>3</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)&lt;sup&gt;1&lt;/sup&gt;</td>
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Second Semester

<table>
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<tr>
<td>Ag Ec 210</td>
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<td>Biological Sciences [B] (GER)&lt;sup&gt;1&lt;/sup&gt;</td>
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<td>ComSt 102 [C], 235 [C], 302 [C], or 324 [C] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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Sophomore Year

First Semester

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</thead>
<tbody>
<tr>
<td>Ag Ec 340</td>
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Agricultural Economics and Management Degree Program (120 Hours)

The Bachelor of Science in Agribusiness degree 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.

Sophomore Year

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Hours</th>
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<tbody>
<tr>
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<td>Ag Ec 340</td>
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<tr>
<td>Arts &amp; Humanities [H, G] (GER)</td>
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<td>Intercultural [I, G, K] (GER)</td>
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<tr>
<td>Physical Sciences (GER)&lt;sup&gt;2&lt;/sup&gt;</td>
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Second Semester

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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Busin Elective</td>
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<tr>
<td>Math 201</td>
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<td>Stat 212A [N] (GER)</td>
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Junior Year

First Semester

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<th>Course Code</th>
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<tr>
<td>Ag Ec 370, 450 [M], or 453</td>
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<td>Ag Ec 435 or B Law 210</td>
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<td>Communication Skills Elective</td>
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<tr>
<td>Math 202 [N] (GER)</td>
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<td>Mgt, Mtkg, or 1 Bus Elective</td>
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<td>Complete Writing Portfolio</td>
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Second Semester

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<td>Econ 302</td>
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<td>Technical/Career Elective&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>Technical/Career Elective&lt;sup&gt;2&lt;/sup&gt;</td>
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Senior Year

First Semester

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<td>Ag Ec 460 [M]</td>
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<tr>
<td>Ag Ec Elective</td>
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<td>Econ 320</td>
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Second Semester

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<th>Hours</th>
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<tr>
<td>Ag Ec 409 or 411</td>
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<tr>
<td>Ag Ec 370, 450 [M], or 453</td>
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<td>Engl 402 [W] (GER)</td>
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<tr>
<td>Tier III Course (GER)</td>
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</table>

<sup>1</sup> All three science GER courses must total 10 credits.
<sup>2</sup> Consult adviser.

Agricultural Economics and Management Degree Program (120 Hours)

This option is designed for the student who wants to obtain a broad background, with emphasis on the application of economics to agriculture. Of the three curricula, this offers the greatest flexibility and, as a result, a wide variety of programs of study can be developed to meet the specific interest of the student.

Sophomore Year

First Semester

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 340</td>
<td></td>
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</table>
### Description of Courses

#### Agricultural Economics

**Ag Ec**

201 [S] Economics in Agriculture 3 General introduction to economics appropriate for production, consumption and ecological issues in the agricultural and rural sector of the economy.

210 Management Applications of Microcomputers in Agriculture and Home Economics 3 (1-6) Microcomputer systems and software including database management, graphics, spreadsheets, and word processing.

260 Introduction to Environmental and Resource Law 1 American law and legal systems; relationships among legal processes, economic principles, and environmental concerns. Course available only by distance education. Course equivalent to OSU’s AREC 260.

311 Natural Resource Economics 3 Rec Ag Ec 201 or Econ 101. The role of economics in natural resource management and policy. Course equivalent to OSU’s AREC 351.


325 (425) Economic Analysis of Environmental Policies 3 Prereq Ag Ec 201 or Econ 101. Economic base, cost-effectiveness, benefit-cost analysis, economic indicators, and social capital measures will be used in economic and environmental policy analysis.

330 (430) Agribusiness Finance 3 Prereq Acctg 230, Ag Ec 201, Math 201, Stat 212. Financial management, decision making, and analysis in the agribusiness sector; capital market institutions and valuation processes.

340 Introduction to Farm and Ranch Management 3 Rec Ag Ec 201 or Econ 101. Analysis of related types of farms and ranches.

350 Introduction to Agricultural Marketing 3 Rec Ag Ec 201 or Econ 101. Problems of marketing farm products; functions and institutions surrounding market operations.

360 Introduction to Agribusiness Management 3 Rec Ag Ec 201 or Econ 101. Product combinations, resource allocation, personnel, finance, and related problems in the operations of small and large agribusiness firms. Cooperative course taught jointly by WSU and UI (Ag Ec 391).

361 Farm and Natural Resources Appraisal 3 Rec Ag Ec 340, Econ 101, 102. Factors affecting value of land; valuation for loans, sales, assessment, and condemnation. Field trips required. Cooperative course taught by UI (AgEc 361), open to WSU students.

370 Agricultural Prices 3 Rec Ag Ec 201 or Econ 101; Stat course. Factors determining levels and movements of prices in agricultural commodities.

408 Mathematics for Economists 3 Same as Math 408.

409 Applied Statistical Methods in Agricultural Economics 3 Rec Math 201, 202, Stat course. Application of sampling techniques, linear regression and analysis of variance and covariance to agricultural economics research problems. Credit not granted for both Ag Ec 409 and 509.
411 Decision Analysis for Agricultural Economists 3 Prereq Math 201, 202. Linear programming, transportation models, simulation, and inventory models.

420 [T] Growth and Change in the American West 3 Prereq Ag Ec 201 or Econ 101. American West development showing how the geography and culture of the West have interacted with technical, economic, and institutional change to shape the western economy.

435 Natural Resource Law 3 Rec Ag Ec 201. Analysis of federal and state courts resolution of real-world conflicts in land and water use. Cooperative course taught by WSU, open to UI students (Ag Ec 435). Course equivalent to OSU’s AREC 453.

440 [M] Advanced Farm and Ranch Management 3 Rec Ag Ec 340. Economic principles applied to organization and operation of farms and ranches.

450 [M] Advanced Agricultural Marketing 3 Rec Ag Ec 350 or 370; Econ 301 or 302, Math 202, Stat course. Institutions, practices, policies, and problems in agricultural input and output marketing.

453 International Marketing of Food and Fiber 3 Prereq Econ 301 or 302. Application of economic theory and marketing techniques to the analysis of food and fiber trade.


467 The Economics of Rural Community Development 3 Economic theory, analytical models, and literature relevant to the study of development of rural areas. Cooperative course taught by UI (Ag Ec 467), open to WSU students.


490 [M] Policies Affecting American Agriculture 3 Rec Ag Ec 201 or Econ 101. Public policy issues related to agriculture and rural areas. Course equivalent to OSU’s AREC 461.

495 Instructional Practicum V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq by interview only. Academic experience in teaching and tutoring undergraduate courses in agricultural economics. S, F grading.

497 Agribusiness Internship V 2-4 May be repeated for credit. By interview only. Off-campus work-study in the agribusiness industry. S, F grading.

498 Seminar 1 May be repeated for credit. For seniors. Current problems. S, F grading.

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

500 Economic Theory I 3 Same as Econ 500.

501 Economic Theory II Same as Econ 501.

502 Economic Theory III Same as Econ 502.

503 Economic Theory IV 3 Same as Econ 503.

504 Economic Theory V 3 Prereq Ag Ec 502 and 503. Advanced duality topics, demand and supply system modeling, financial economics and risk.

509 Applied Statistical Methods in Agricultural Economics 3 Graduate-level counterpart of Ag Ec 460 and additional requirements. Credit not granted for both Ag Ec 499 and 509.

510 Statistics for Economists 4 Prereq college calculus and matrix algebra. Statistical theory underlying econometric techniques utilized in quantitative analysis of problems in economics and finance.

511 Econometrics I 3 Same as Econ 511.

512 Econometrics II 3 Prereq Ag Econ 501 and Econ 511. Econometric methods for systems estimation; simultaneous equations, discrete and limited dependent variable, panel data, and time series data.

521 Advanced Topics in Agricultural Economics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Current topics in agricultural development, marketing, farm management, and agricultural policy.

522 Topics in Agricultural Economics V 1-4 Current topics in agricultural economics.

540 Agricultural Production Economics 3 Rec calculus, intermediate microeconomic theory. Theoretical economic concepts applied to analysis of agricultural problems, production intensity, factor and production combinations, uncertainty and technological change.

550 Topics in Agricultural Marketing 3 Rec graduate microeconomic theory. Application of economic theory to topics in agricultural marketing and price analysis.

560 Agribusiness Management and Marketing 3 Rec Ag Ec 460. Management and marketing problem situations in agribusiness; alternative policies, strategies, and decisions.

580 Advanced Resource Economics 3 Rec Econ 501. Economic analysis of the allocation and use of environmental and natural resources. Cooperative course taught jointly by WSU and UI (Ag Ec 551).

590 Advanced Topics in Mathematical and Quantitative Methods V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Ag Ec 500 and 501 or permission of instructor. Topics may include advanced econometrics, dynamic optimizations, computer applications, methodology.

591 Advanced Topics in Monetary and Public Economics V 1-6 Same as Econ 591.

592 Advanced Topics in International and Development Economics V 1-6 Same as Econ 592.

593 Advanced Topics in Health, Education, Labor, and Demographic Economics V 1-6 Same as Econ 593.

594 Advanced Topics in Markets and Industrial Organization V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Ag Ec 500 and 501 or permission of instructor. Topics may include industrial organization of agricultural and sports markets, price analysis, market structure, economic growth, rational regulation.

595 Advanced Topics in Resource and Production Economics V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Ag Ec 500 and 501 or permission of instructor. Topics may include resource scarcity, decision making under risk, bioeconomics, production applications, welfare analysis.

596 Advanced Topics in Financial Economics V 1-6 Same as Fin 596.

597 Agribusiness Internship V 2-4 May be repeated for credit; cumulative maximum 4 hours. Off-campus student work-study in the agribusiness industry.

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.

Agriculture

- Agricultural Technology and Management, BS
- Agriculture, BS (with majors in the following)
  - Agricultural Education
  - Agricultural Communications
  - General Agriculture
  - Agriculture, extended degree

See Biological Systems Engineering.

Program in American Studies


The American Studies Program offers the Bachelor of Arts, Master of Arts, and Doctor of Philosophy degrees in American Studies. American Studies plays a unique role in the college of Liberal Arts and in the University by bringing together faculty and students from a variety of disciplines to compare knowledge and gain perspectives on United States culture. The major offers a rich, rigorous interdisciplinary approach combining the best intellectual insights from literature, historical studies, women's studies, ethnic studies, the fine arts, environmental studies, and the social sciences. The program applies interdisciplinary methods to the cultural study of the U.S. as a multiracial, multiethnic, and multicultural society, that is also part of a global system. Established in 1962, the program, like most American Studies programs, has its roots in History and English. Currently, we have in addition strong ties to the Department of Women's Studies and the Department of Comparative American Cultures. We also draw faculty from Anthropology, Communications, Fine Arts, Environmental Science, Political Science, and Sociology. American Studies majors are encouraged to reinforce their studies with minors in one of these related fields, and the minor in American Studies may be especially appropriate for students with majors in one of these departments.

In addition to the above, students design their own coordinated track appropriate for students with majors in one of these interdisciplinary concentrations. Students (Ag Ec 435). Course equivalent to OSU's AREC 461.

Instructi
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 further information, visit www.wsu.edu/~amerstu.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

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 216, W St/CAC/Soc 300; Engl 380, 381, or 382, 300-400-level American history; 300-400-level CAC or W St; Am St/Engl 470, 471 or 472.

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. Nationalisms and American Identities
4. Popular Culture, Film, and Mass Media
5. Science, Technology, and Culture
6. 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.

AMERICAN STUDIES DEGREE PROGRAM (120 HOURS)  

Freshman Year

First Semester

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<th>Course</th>
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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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Second Semester

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<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<td>Science Elective (GER)</td>
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Sophomore Year

First Semester

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<td>Biological Sciences [B] (GER)</td>
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<td>Hist 110</td>
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Second Semester

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<td>Arts &amp; Humanities [H,L,G], Intercultural [I,L,G,K], or Social Sciences [S,K] (GER)</td>
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<td>Foreign Language or Elective¹</td>
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<td>Hist 111</td>
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<td>Physical Sciences [P] (GER)</td>
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Junior Year

First Semester

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<tbody>
<tr>
<td>Am St 216</td>
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<td>Engl 380, 381, or 382</td>
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<td>W St 300</td>
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<td>Electives</td>
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<td>Complete Writing Portfolio</td>
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Second Semester

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<td>Engl 380, 381, or 382</td>
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<td>Electives</td>
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Senior Year

First Semester

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<th>Hours</th>
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<tr>
<td>300-400-level CAC or W St Elective</td>
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<tr>
<td>Arts &amp; Humanities [H,L,G], Intercultural [I,L,G,K], or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Intercultural [I,L,G,K] (GER)</td>
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<tr>
<td>One from: Am St 470, 471, or 472</td>
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Second Semester

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<tr>
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<tbody>
<tr>
<td>300-400-level American Hist Elective</td>
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<tr>
<td>Major Concentration Area Electives²</td>
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<tr>
<td>One from: Am St 470, 471, or 472</td>
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<td>Tier III Course (GER)</td>
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Minor in American Studies

A minor in American studies requires 21 hours which shall include:

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Am St/Engl/Hist/W St 216 American Culture</td>
<td>3</td>
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<tr>
<td>Two courses from: Am St/Engl 470, 471, or 472</td>
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</tr>
<tr>
<td>Two courses in an area of concentration</td>
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<tr>
<td>300-400-level American literature</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level American history</td>
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</table>

Preparation for Graduate Study

American Studies majors considering graduate work in this field should include college-level courses in at least one modern European foreign language in their undergraduate program. An area of concentration in American literature, American history, or comparative American cultures is strongly recommended, as are advanced writing courses.

Students pursuing BA degrees in English, history, and other humanities and social science areas may also apply to the graduate Program in American Studies at WSU; a guide to the MA and PhD program is available through the office of the Director of American Studies.

Description of Courses

American Studies

Am St

216 [H] American Culture 3 Same as Engl 216.

410 [T] Cities in Fiction 3 Prereq completion of one Tier I and three Tier II courses. Exploration of the city as an active agent in the fictional works of North American authors.

424 History of American Popular Culture 3 Same as Hist 424. Credit not granted for both Am St 424 and 524.

470 [T] Literature and Culture of the American West 3 Same as Engl 470.

471 [T,H] Cultural Politics Since World War II 3 Same as Hist 471. Credit not granted for both Am St 470 and 476.

472 [T] Ecological Issues and American Nature Writing 3 Prereq completion of one Tier I and three Tier II courses. Representation of nature in American fiction and nonfiction; role of culture in shaping environmental problems and solutions.

496 Topics in American Studies 3 May be repeated for credit; cumulative maximum 9 hours. Same as Engl 496. Credit not granted for both Am St 496 and 596.

500 Colloquium 1 May be repeated for credit; cumulative maximum 12 hours. Current research in American studies. S, F grading.

501 Readings in American Studies 1 3 May be repeated for credit; cumulative maximum 6 hours. Readings in key texts in American culture, beginning to 1865.

502 Readings in American Studies II 3 May be repeated for credit; cumulative maximum 6 hours. Readings in key texts in American culture, 1865 to present.

503 Contemporary Theories of Race and Ethnicity 3 Prereq graduate standing. Major theoretical readings and key recent texts in U.S. and transnational ethnic studies scholarship.

504 Contemporary Feminist Theories and Practices 3 Prereq graduate standing. Major theoretical readings and key recent texts in U.S. and transnational feminist scholarship.

513 Theory and Method in American Studies 3 Same as Engl 513.

524 History of American Popular Culture 3 Graduate-level counterpart of Am St 424; additional requirements. Credit not granted for both Am St 424 and 524.

590 Seminar in American Studies 3 May be repeated for credit; cumulative maximum 9 hours. Interdisciplinary topics in American culture.

596 Topics in American Studies 3 May be repeated for credit; cumulative maximum 9 hours. Graduate-level counterpart of Am St 496; additional requirements. Same as Engl 596. Credit not granted for both Am St 496 and 596.

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 Animal Sciences


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 Bachelor of Science in Animal Sciences and Doctor of Veterinary Medicine degrees. The department also participates in the graduate Program in Nutrition which offers a Doctor of Philosophy degree and in Genetics and Cell Biology which offers Master of Science and Doctor of Philosophy degrees.

Bachelor’s Program

Animal sciences students learn the biological and economic principles and practices associated with agricultural animal production, and companion and labora-tory animal care. This prepares graduates for a wide variety of career opportunities. These opportunities include animal production and food processing (meats, dairy products, etc.); the service industries (including feed manufacturing and sales, pharmaceuticals, artificial insemination, agricultural equipment and 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. 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 program specialization.

The Industry Option emphasizes the scientific practices of farm and companion animals and other areas of agriculture. This option is recommended for students preparing to work in agricultural animal production, companion animal care, or agribusiness.

The Production Management Option emphasizes the business aspects of animal agriculture and companion animal management. This option requires fewer basic science courses while emphasizing economics and practical experience. Employment opportunities are found in general management of agricultural animal enterprises and the financial industry related to agriculture.

The Pre-veterinary Medicine/Science Option places more emphasis on basic science courses. This option is recommended for students planning to apply to the professional program leading to the Doctor of Veterinary Medicine, graduate school, or to study further and work in more technical or specialized aspects of the industry, such as extension service, teaching, technical consulting or laboratory work.

Many opportunities outside the classroom are available for students to further their educational experiences. Animal sciences students are encouraged to participate as part-time employees in the livestock production centers or in research and teaching programs within the department. Many opportunities are available to students for on-the-job training in professional internships with different segments of the agricultural, companion animal or research sectors. Active student clubs within the Department of Animal Sciences and the College of Agriculture and Home Economics and the university community provide students with both professional and social contacts with faculty and other students. Several departmental and college scholarships are available based on ability, financial need and interest area.

Animal sciences courses are attractive to students in many other majors and from other backgrounds. Animal sciences courses broaden a student’s knowledge of applied biology, agriculture and the environment, and society in general. Many students find a minor in animal sciences complements and adds depth to other majors.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

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.

INDUSTRY DEGREE PROGRAM (121 HOURS)  ✔FYDA

Freshman Year

First Semester

A S 101
A S 180
Chem 101 [P] (GER)
Engl 101 [W] (GER)
Math 107, 140 [N], 171 [N], 201, or 202 [N] (GER)

Second Semester

A S 166, 172, 174, 175, 176, or 178
Biol 103 [B] (GER)
Chem 102 [P] (GER)
ComSt 102 [C] or H D 205 [C] (GER)
GenEd 110 or 111 [A] (GER)

Sophomore Year

First Semester

A S 260, 272, or 360
Ag Ec 201 [S] or Econ 101 [S] (GER)
Arts & Humanities [H,G] (GER)
GenEd 110 or 111 [A] (GER)
V MS 261

Second Semester

Ag Ec 210 or Cpt S 405
Arts & Humanities [H,G] or Social Sciences [S,K] (GER)
Intercultural [I,G,K] (GER)
Soils 201
Stat 212 [N] (GER) or 412

Junior Year

First Semester

A S 313
Acctg 230
Ag Ec 335 or B Law 210
CropS 101, 302, 303, or NATRS 351
Engl 201 [W] (GER)
Complete Writing Portfolio

Second Semester

A S 314
A S 330
A S 350
A S 351
A S 380
Ag Ec 340

Senior Year

First Semester

A S 285, 488, CropS 302, 303, or NATRS 351
A S 406 [M] ³
A S 440
A S 454 ³
Elective ²

Second Semester

A S 408 [M] ³
A S 466, 468, 472, 474 [M], 476, or 478 [M] ³
A S 488 [M] or NATRS 351 ³
Tier III Course (GER)
Elective

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

Second Semester

A S 260 or 272
Ag Ec 201 [S] (GER)
GenEd 110 or 111 [A] (GER)
Arts & Humanities [H,G] (GER)
V MS 261

PRODUCTION MANAGEMENT DEGREE PROGRAM (121 HOURS)  ✔FYDA

Freshman Year

First Semester

A S 101
A S 166 or 178¹
A S 180
Chem 101 [P] (GER)
Engl 101 [W] (GER)
Math 107, 140 [N], 171 [N], 201, or 202 [N] (GER)

Second Semester

A S 172, 174, 175, or 176¹
Biol 103 [B] (GER)
Chem 102 [P] (GER)
H D 205 [C], or ComSt 102 [C] (GER)
GenEd 110 or 111 [A] (GER)

Sophomore Year

First Semester

A S 260, 272, or 360
Ag Ec 201 [S] or Econ 101 [S] (GER)
Arts & Humanities [H,G] (GER)
GenEd 110 or 111 [A] (GER)
V MS 261

Second Semester

Ag Ec 210 or Cpt S 405
Arts & Humanities [H,G] or Social Sciences [S,K] (GER)
Intercultural [I,G,K] (GER)
Soils 201
Stat 212 [N] (GER) or 412²

Junior Year

First Semester

A S 313
Acctg 230
Ag Ec 335 or B Law 210
CropS 101, 302, 303, or NATRS 351
Engl 201 [W] (GER)
Complete Writing Portfolio

Second Semester

A S 314
A S 330
A S 350
A S 351
A S 380
Ag Ec 340

Senior Year

First Semester

A S 285, 488, CropS 302, 303, or NATRS 351
A S 406 [M] ³
A S 440
A S 454 ³
Elective ²

Second Semester

A S 408 [M] ³
A S 466, 468, 472, 474 [M], 476, or 478 [M] ³
A S 488 [M] or NATRS 351 ³
Tier III Course (GER)
Elective

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

Strongly recommended.

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### PRE-VETERINARY MEDICINE/SCIENCE

#### DEGREE PROGRAM (121 HOURS)

**FYDA**

#### FRESHMAN YEAR

<table>
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<tr>
<th>Semester</th>
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<tr>
<td>First Semester</td>
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<tr>
<td>A S 101</td>
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<td>A S 180</td>
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<tr>
<td>Chem 105 [P]</td>
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<tr>
<td>Engl 101 [W]</td>
<td>3</td>
</tr>
<tr>
<td>Math 107, 140 [N], 171 [N], 201 or 202 [N] (GER)</td>
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#### SECOND SEMESTER

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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER) 3</td>
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<tr>
<td>Biol 103 [B] (GER) 4</td>
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<tr>
<td>Chem 106 [P] (GER) 4</td>
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<tr>
<td>H D 205 [C] or ComSt 102 [C] (GER) 3</td>
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#### SOPHOMORE YEAR

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<tr>
<td>Biol 104 [B] (GER) 4</td>
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<tr>
<td>Chem 240 [P] (GER) 4</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER) 3</td>
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<td>Phys 101 [P] (GER) 4</td>
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### JUNIOR YEAR

#### FIRST SEMESTER

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<th>Hours</th>
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<tr>
<td>A S 313 4</td>
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<tr>
<td>Act 230 3</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER) 3</td>
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<tr>
<td>Engl 201 [W] or 402 [W] (GER) 3</td>
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<td>Elective 3</td>
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#### SECOND SEMESTER

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<th>Hours</th>
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<tr>
<td>Complete Writing Portfolio 3</td>
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### SENIOR YEAR

#### FIRST SEMESTER

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<th>Hours</th>
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<tbody>
<tr>
<td>A S 285, 488, CropS 302, 303, or NATRS 351 3-6</td>
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<tr>
<td>A S 406 [M] or 408 [M] 3</td>
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<tr>
<td>A S 545 2</td>
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<tr>
<td>Ag Ec 430 3</td>
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<tr>
<td>Elective 3</td>
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#### SECOND SEMESTER

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<th>Hours</th>
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<tr>
<td>A S 408 3</td>
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<tr>
<td>A S 466, 468, 472, 474 [M], 478 [M] or 476 3</td>
</tr>
<tr>
<td>Tier III Course (GER) 3</td>
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<tr>
<td>Electives 6</td>
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### Joint Program in Animal Sciences and Veterinary Medicine

In order to meet the increasing demand for food-animal veterinarians, the Department of Animal Sciences and the College of Veterinary Medicine have created a combined program designed to train selected, highly qualified students to earn both a Bachelor of Science in Animal Sciences and a Doctor of Veterinary Medicine degree within a seven-year program. Students will take a three-year animal science program, completing all General Education Requirements, the animal sciences core and pre-veterinary medicine requirements. This program includes mathematics; chemistry, including organic and biochemistry; general biology; physics; and the core of animal sciences courses, including an introduction to farm animals; then further education in animal feeds and nutrition, breeding and genetics, reproduction and the economics of animal production management. Students will then enter the College of Veterinary Medicine and complete the requirements for total hours and 300-400-level hours before earning the BS in Animal Sciences. Students will continue the curriculum, leading to the DVM degree after a total of seven years of college work.

Students will enter the university under normal procedures and must be advised in the Department of Animal Sciences. Qualified students will be invited to apply for the program. A high scholastic achievement and the promise of the same and demonstrated experience and interest in working with farm animals will be the primary criteria for initial invitation. Selected students will be identified and invited to apply for the AS-DVM program in the second semester of the first year. Students would then declare animal sciences as a major in the first semester of the sophomore year and enter the joint program in that year. The procedures for acceptance into the DVM program will be the same as those for other applicants. Successful participants will complete the three-year animal sciences program and begin the veterinary medicine curriculum in their fourth year of study. A 3.0 or higher grade point average for the first year and a 3.3 gpa upon completion of the third year will be required for the program. If the student is not accepted or withdraws from the AS-DVM program, the student could earn the BS in Animal Sciences and/or apply to the College of Veterinary Medicine under normal procedures.

### Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

#### FIRST YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>A S 101</td>
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<tr>
<td>A S 166, 172, 174, or 180</td>
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<tr>
<td>Biol 103 or GER</td>
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<tr>
<td>Chem 105 [P] (GER)</td>
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<td>Engl 101 [W] (GER) or GER</td>
<td>3</td>
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<tr>
<td>Math 107, 171 [N], or GER</td>
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#### SECOND SEMESTER

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<tr>
<td>A S 330 3</td>
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<td>A S 350, 351 4</td>
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<tr>
<td>GenEd 111 [A] (GER) 3</td>
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<tr>
<td>Biol 101 [P] (GER) 4</td>
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<td>Stat 212 [N] (GER) 4</td>
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### THIRD YEAR

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<th>Hours</th>
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<tbody>
<tr>
<td>A S 313 4</td>
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<tr>
<td>A S 406, 466, 472, or 478 [M] 3</td>
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<tr>
<td>Engl 402 [W] (GER) 3</td>
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<tr>
<td>GER 3</td>
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<tr>
<td>MbioS 303 3</td>
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#### SECOND SEMESTER

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<tr>
<th>Hours</th>
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<tr>
<td>A S 380 1</td>
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<td>A S 408 3</td>
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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 AS 406 or 408 would enroll in one of those in lieu of V MS/AS 414. If two 400-level animal production courses (AS 466, 472, 474, 476, or 478) were not completed, then students would enroll in one of them. Students will receive the BS in Animal Sciences upon successful completion of at least 120 credit hours and the final two 400-level AS classes. Most students will meet these requirements after one year of the DVM program. Successful completion of the College of Veterinary Medicine program will earn the Doctor of Veterinary Medicine.

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.

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.

Description of Courses

Animal Sciences

AS

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. Credit not granted for both AS 101 and 103. Cooperative course taught jointly by WSU and UI (AVS 109).

102  General Animal Science 3 Fundamental concepts of the principles and practices of animal agriculture production systems and consumer products. Credit not given for both AS 101 and 103.

166  Horse Management Laboratory 1 (0-3) Introductory laboratory designed to familiarize students with approved management practices for horse enterprises. S, F grading. Cooperative course taught by WSU, open to UI students (AVS 166).

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

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

176  Sheep Management Laboratory 1 (0-3) Management practices associated with a farm flock sheep enterprise. S, F grading. Cooperative course taught by UI (AVS 176), open to WSU students.

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

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.

208  Nutrition of Pet Animals 2 Prereq biology course, chemistry course. Nutritional principles governing optimum growth, health and performance of pet animals. Cooperative course taught by WSU, open to UI students (AVS 204).

244  Zoontic Diseases 2 Biology of infectious diseases of animals transmissible to humans.

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 260).

266  Equine Enterprise Management 2 Management principles that are applicable to equine enterprises.

272  Dairy Cattle Traits 2 (1-3) Evaluating form and function in dairy cattle; measurement of production and evaluation of type. Cooperative course taught by WSU, open to UI students (AVS 272).

288  Rights and Welfare of Animals 3 Prereq Biol 102 or 103. Ethical considerations and welfare of animals as used companions, for food, and in scientific research. Cooperative course taught by WSU, open to UI students (AVS 288).

301  (213) Applied Animal Nutrition 3 Prereq one semester Chem; one semester Biol. Not open to AS majors. Characteristics of nutrients, nutritional requirements, ration calculations and feeding practices for farm animals. Cooperative course taught by WSU, open to UI students (AVS 205).

313  Feeds and Feeding 4 (3-3) Prereq Biol 103. Utilization, practices, requirements, nutritive characteristics, and calculations of rations for animals. Field trip required. Credit not granted for both AS 213 and 313. Cooperative course taught jointly by WSU and UI (AVS 306).

314  Principles of Nutrition 3 Prereq Biol 104; Chem 102 or 106. Digestion, absorption, metabolism, and role of nutrients. Cooperative course taught jointly by WSU and UI (AVS 305).

330  Genetics of Farm Animals 3 (2-3) Prereq MBio 301; Stat 212 or 412. Genetic principles applied to breeding of farm 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 103. Animal structure, composition, whole body and cellular growth, prenatal and postnatal growth; emphasis on skeletal muscle, bone and adipose tissue. Cooperative course taught by WSU, open to UI students (AVS 315).

346  Introduction to Skeletal Muscle Physiology 3 Prereq A S 305. Structure, function and regulation of skeletal muscle; embryonic, neonatal, postnatal growth and atrophy; muscle-specific proteins. Cooperative course taught by WSU, open to UI students (AVS 316).

350  Reproduction of Farm Animals 3 (2-3) Prereq A S 350 or equiv. Laboratory and field techniques used in animal reproduction involving hormones, artificial insemination, semen evaluation and pregnancy.


367  Prevention and Management of Equine Health Problems 3 Same as V MS 367.

378  Advanced Livestock and Meat Selection and Evaluation 2 (0-6) May be repeated for credit. Prereq A S 260 or 272. 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.


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 AS 428 and 528.

430  Topics in Meat Science and Muscle Physiology 1 Prereq A S 306, 360. Readings, discussions, seminars, tours related to most current disposition of meat science (processing, safety, consumers) and muscle biology (research and teaching). Cooperative course taught jointly by WSU and UI (AVS 431).

440  [M] Physiology of Domestic Animals 3 Prereq V An 308. Basic animal functions; relationship and difference between domestic animals; measurement of functional processes.

441  Physiology of Domestic Animals Laboratory 1 (0-3) Prereq A S 440 or cr/. Measurement of functional processes in domestic animals.

443  Case Studies in Animal Science 1 May be repeated for credit; cumulative maximum 5 hours. Readings and discussions of cases of disease in animal science.

444  [M] Physiology of Disease 3 Introduction to the mechanisms of disease in domestic animals. Cooperative course taught by WSU, open to UI students (AVS 445).
451 Endocrine Physiology 3 Prereq Biol 104, 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 (0-6) 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).


468 Aquaculture 2 Prereq Biol 104. Reproduction, nutrition, behavior, management, breeding, physiology, health, and laws governing aquaculture of finfish and shellfish. Field trip required. Cooperative course taught by WSU, open to UI students (Fish 319).


476 Sheep Production 3 (2-3) Prereq A S 313, 330, 350. Application of principles of genetics, reproduction, nutrition, health, marketing to management; and use of wool. Cooperative course taught by UI (AVS 476).

478 [M] Swine Production 3 (2-3) Prereq A S 313, 330, 350. Principles of breeding, feeding, management, and marketing of swine. Field trips and special clothing required. Cooperative course taught by WSU, open to UI students (AVS 478).

488 [M] Perspectives in Biotechnology 3 Prereq MBioS 301. Theory and application of biotechnology in agriculture, industry, and medicine; methodological, environmental, social, and economic concerns. Credit not granted for both A S 488 and 588. Cooperative course taught by WSU, open to UI students (AVS 488).

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

500 Seminar in Animal Sciences 1 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.

505 Experimental Nutrition V 1 (0-3) to 3 (0-9) Prereq Chem 220, 222; MBioS 303. Laboratory techniques used in nutritional research; modern biochemical methods of analysis; introduction to physiological chemistry.

506 Non-Ruminant Nutrition 3 (2-3) Prereq A S 313. Graduate-level counterpart of A S 406; additional requirements. Credit not granted for both A S 406 and 506.

507 Advanced Nutrient Metabolism 3 Prereq A S 406 or 408; 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 (A S 507).

508 Ruminant Nutrition 3 (2-3) Graduate-level counterpart of A S 406; additional requirements. Credit not granted for both A S 408 and 508. Not for animal science graduate students.

510 Digestion and Nutrient Utilization in Animals 2 (1-2) Gastrointestinal physiology, rate of passage, feed intake regulation, measures of digestibility, starch, fat and nonstarch polysaccharide, and digestion and utilization of nutrients. Cooperative course taught by WSU, open to UI students (AVS 513).

520 Preparation of Scientific Literature in Animal Sciences 2 Prereq graduate standing. Preparation of grant proposals, manuscripts, and literature review on research topics.

528 Topics in Animal Breeding 2 May be repeated for credit; cumulative maximum 4 hours. 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 540).

544 Physiology of Disease 3 Graduate-level counterpart of A S 444; additional requirements. Credit not granted for both A S 444 and 544.

550 Advanced Reproduction 4 (3-3) Prereq A S 350. Physiological of sexual maturation; gametogenesis; sexual cycle; fertilization; embryonic development; physiological, chemical and immunological control of hormones of reproduction. Cooperative course taught by WSU, open to UI students (AVS 550).

551 Endocrine Physiology 3 Graduate-level counterpart of A S 451; additional requirements. Credit not granted for both A S 451 and 551. Cooperative course taught jointly by WSU and UI (AVS 551).

556 Embryo Transfer in Domestic Animals 2 Prereq A S 350. Embryo transfer in domestic animals including techniques, equipment, and state-of-the-art biotechnology.

557 Laboratory in Embryo Transfer 1 (0-3) Prereq c// in A S 556. Laboratory principles and practices in embryo transfer.

558 Molecular and Cellular Reproduction 3 (2-2) Same as MBioS 528.

560 Domestic Animal Growth 2 Prereq A S 406, 408, or 444; MBioS 303 or 513. Advanced topics in principles of growth and regulation in domestic animals. Cooperative course taught jointly by WSU and UI (AVS 560).

573 Advanced Dairy Management 2 (1-3) Graduate-level counterpart of A S 473; additional requirements. Credit not granted for both A S 473 and 573.

588 Perspectives in Biotechnology 3 Graduate-level counterpart of A S 488; additional requirements. Credit not granted for both A S 488 and 588.

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 596).

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

Associate Professor and Department Chair, W. Andrefsky, Jr.; Professors, R. E. Ackerman, J. H. Bodley, B. S. Hewlett, T. A. Kohler; W. D. Lipe, P. J. Meltingr, Jr., L. S. Stone; Associate Professors, J. M. Mageo, S. A. Weber; Assistant Professors, G. A. Huckabee, K. D. Lupo, N. F. McKee, J. Q. Patton.

The curriculum includes courses in the four major subfields of anthropology: archaeology, cultural/social anthropology, linguistics, and physical anthropology. These courses will 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 or cultural 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 specialities in geoarchaeology, quaternary vegetation and climate, and zooarchaeology. The department also conducts summer archaeological field schools in the Pacific Northwest. The program in cultural anthropology emphasizes psychological anthropology, gender and kinship issues, medical anthropology, social scale and inequality, applications of Darwinian theory, and global political ecology. Faculty research is based in North and South America, Polynesia, Sub-Saharan Africa, and South Asia.

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 liberal arts education.
Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

The Bachelor of Arts degree in the undergraduate program requires a total of 120 semester hours. At least 40 of the total hours required for the bachelor's degree in this program must be in 300-400-level courses. See the General Education Requirements (GERs) for graduation in the WSU catalog. A minimum of 33 hours in anthropology courses are required. Grades of C- or higher are considered passing grades for all anthropology classes; D+ and lower are failing grades. No required course can be taken pass/fail. Courses are 3 credit hours except Anth 300 and 499 which are variable.

The anthropology major must achieve a grade of C- or better in Anth 203, 230, 260, 490, and in one course from each of the following: a) Anth 300, 301, 303, 306, 307, 309, 316, 320, 327, 401, 402, 403, 404, 405, 417, 418, 419, 428, 494, or 495; b) Anth 350, 355, or 450; c) Anth 463, 465, 466, 468; d) Anth 300, 330, 331, 333, 336, 370, 430, 435, 436.

Majors in anthropology are advised to take advanced work in supporting fields.

ANTHROPOLOGY DEGREE PROGRAM (120 HOURS) ✷ FYDA

Freshman Year

First Semester Hours
Anth 203 3
Engl 101 [W] (GER) 3
Foreign Language, if necessary, or Elective1 3 or 4
GenEd 110 [A] (GER) 3
Science Elective 4

Second Semester Hours
Anth 260 3
Biological Sciences [B] (GER) 3
Communication [C,W] (GER) 3
Foreign Language, if necessary, or Elective1 3 or 4
GenEd 111 [A] (GER) 3

Sophomore Year

First Semester Hours
Anth 230 3
Math Proficiency [N] (GER)2 3 or 4
Physical Sciences [P] (GER) 4
Social Sciences [S,K] (GER) 3

Second Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 4
Biological Anth Elective3 3
Cultural Anth Elective3 3
Intercultural [I,G,K] (GER) 3

Junior Year

First Semester Hours
Archeology Anth Elective3 3
Arts & Humanities [H,G] (GER) 3

Second Semester Hours

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.

Preparation for Graduate Study

As preparation for work toward an advanced degree a student should have completed not less than 18 hours in anthropology.

Description of Courses

Anthropology


130 [I] Great Discoveries in Anthropology 3 Impact of great archaeological discoveries and the work of archaeologists on our sense of the past.

198 [S] Anthropology Honors 3 Open only to students in the Honors College.

201 [G] Art and Society 3 Art as an expression of social and cultural systems in non-Western societies.

203 [K] Peoples of the World 3 Principles of cultural anthropology through study of various ethnic groups from different parts of the world.

214 [S,D] Gender and Culture in America 3 Exploration or variation in gender roles, relationships, values, and institutions among men and women in U.S. ethnic and other subcultures.

230 Introduction to Archaeology 3 Development of a dynamic picture of past human behavior from archaeological evidence.

256 Introduction to Syntax and Semantics 3 Same as Engl 256.

260 [B] Introduction to Physical Anthropology 4 (3-3) Evidence for human evolution; processes of racial differentiation; techniques of physical anthropology.

300 Field Methods V 2-8 Prereq permission by application. Practice in methods of archaeological, ethnological, or linguistic field research.


303 Gods, Spirits, Witchcraft and Possession 3 Non-Western religions; religion as a cultural system.

306 [K] Cultures and Peoples of the Middle East 3 Contemporary Arab cultures in a historical perspective within the framework of Western-Middle Eastern relations.

307 [K] Contemporary Cultures and Peoples of Africa 3 Introduction to family, social, political, economic and religious institutions of African cultures in context of African social issues.

309 [K] Cultural Ecology 3 Major findings of ecological anthropology relating to problems of population, resources, and environment in small-scale cultures.

312 [S,D] Native American Women in Traditional and Contemporary Societies 3 Same as CAC 372.

316 [K] Gender in Cross Cultural Perspective 3 Prereq Anth 101, Psych 105, Soc 101, or W St 200; sophomore standing. Cross-cultural examination of the status and roles of women and men, the institution of marriage, and symbols of gender valuation.

317 [I] Global Feminisms 3 Same as W St 332.


327 [S,D] Contemporary Native Peoples of the Americas 3 Prereq Anth 101 or CAC 171. Contemporary cultures of Native American communities emphasizing North America.

330 [S] Origins of Culture and Civilization 3 Prereq 3 hours Anth. Prehistoric roots of culture from the beginnings of humankind to the rise of the first civilizations in Africa and Eurasia.

331 [K] America Before Columbus 3 Prereq Anth 101 or GenEd 110. Cultures and environments of North/Middle America from the arrival of the earliest hunter-gatherers to the complex Mayan and Aztec civilizations.

333 Archaeology of Washington 3 Prereq Anth 230, 331, or 370. Prehistory of Washington state; for majors and nonmajors.


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.


404 [T,K] 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 of self; focus on self in Western/non-Western cultures, human development, power, historical context.

405 [T,K,M] Medical Anthropology 3 Prereq completion of one Tier I and three Tier II courses. Relationships among disease, curing, culture and environment; non-Western medical systems; political economy of health care.

417 [T] Anthropology and World Problems 3 Prereq 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. Credit not granted for both Anth 430 and 530.

436 Ethnoarchaeology 3 Multidisciplinary approach (archaeology, ethnography and history) to the interpretation of past human cultures. Credit not granted for both Anth 436 and 536.

450 Descriptive Linguistics 3 Introduction to analysis and description of natural languages; phonological, syntactic, and semantic analysis of data from a variety of languages. Credit not granted for both Anth 450 and 550. Cooperative course taught by WSU, open to UI students (Anth 450).


466 Human Osteology 3 (2-3) Prereq Anth 260. Observations and measurements of human skeletons; variations based on age, sex, and race; comparisons with fossil human and higher primates. Credit not granted for both Anth 466 and 566. Cooperative course taught jointly by WSU and UI (J451/J551).

470 Forensic Anthropology 4 (3-3) Prereq Anth 466. Determining age, sex, stature, population affinities, personal identifying characteristics, and evidence of trauma for human skeletal material for criminal and human rights cases. Credit not granted for both 467 and 567.

468 [T,S,M] 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.


494 Development, Environment, and Health in Latin America (Ecuador) V 3-10 Prereq basic fluency in Spanish. Interdisciplinary examination of inter-relationships among development, environment, and health with emphasis on Ecuador. Taught in Ecuador.

495 Ecuador Internship/Independent Study V 3-10 Prereq Anth 494, basic fluency in Spanish; by interview only. Individually designed internships with development-related Ecuadorian non-governmental organizations or independent field projects supervised by Ecuadorian anthropologists. Taught in Ecuador.

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

500 Field School V 2 (0-6) to 8 (0-24) Prereq permission by application. Training in gathering and analyzing field data.

501 History of Anthropological Theory 3 Graduate-level counterpart of Anth 401; additional requirements. Credit not granted for both Anth 401 and 501.

502 Cross-cultural Gender and Kinship 3 Graduate-level counterpart of Anth 402; additional requirements. Credit not granted for both Anth 402 and 502.

504 Tribal Peoples and Development 3 Global and historic perspectives on the complex issues surrounding the problem of tribal peoples and development.

507 Advanced Studies in Culture Theory 3 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.

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 Introduction to Archaeological Method and Theory 3 Graduate-level counterpart of Anth 430; additional requirements. Credit not granted for both Anth 430 and 530.

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 Upland Southwest 3 Prehistory of upland portions of American Southwest; emphasis on Anasazi and Mogollon traditions and relationships to historic Pueblos.

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 Plateau Prehistory 3 Archaeology of the interior Northwest.

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

546 Prehistory of the Desert West 3 Changing desert environments and human adaptations; perspectives for understanding desert prehistory; ancient lifeways of the Desert West.

547 Models and Simulation 3 Models and model-building as an anthropological approach to present and past cultures.

549 World Archaeology 3 Current thought on major transitions (sapienization, advent of Neolithic and of civilization) in human prehistory around the world.

550 Descriptive Linguistics 3 Graduate-level counterpart of Anth 450; additional requirements. Credit not granted for both Anth 450 and 550. Cooperative course taught by WSU, open to UI students (Anth 550).

554 Anthro: Sociological Field Methods Seminar 3 Prereq Anth 450 or 550. Elicitation, recording techniques and analysis of sociocultural and linguistic field data.


563 Human Races 3 Graduate-level counterpart of Anth 463; additional requirements. Credit not granted for both Anth 463 and 563. Cooperative course taught jointly by WSU and UI (J412/J512).

565 Human Evolution 3 Graduate-level counterpart of Anth 465; additional requirements. Credit not granted for both Anth 465 and 565. Cooperative course taught jointly by WSU and UI (J411/J511).

566 Human Osteology 3 Graduate-level counterpart of Anth 466; additional requirements. Credit not granted for both Anth 466 and 566. Cooperative course taught jointly by WSU and UI (J451/J551).
567 Forensic Anthropology 4 (3-3) Prereq Anth 566. Graduate-level counterpart of Anth 467; additional requirements. Credit not granted for both 467 and 567.


570 Sediments in Geoarchaeology 4 (3-3) Sediment-forming processes, sedimentological techniques, reconstruction of Quaternary environments, and sedimentology of site-forming processes.

573 Zooarchaeology 4 (2-6) Identification of animal bones from archaeological sites, methodological and theoretical techniques for interpreting faunal remains. Cooperative course taught by WSU, open to UI students (Anth 573).

576 Palynology 4 (3-3) Pollen and spore morphology, evolution, production, dispersal, and preservation; index fossils, dating, archaeology, and vegetational history. Field trip required.

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

592 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.

600 Special Projects or Independent Study Variable credit.

700 Master’s Research, Thesis, and/or Examination Variable credit.

800 Doctoral Research, Dissertation, and/or Examination Variable credit.

Department of Anthropology

567 Forensic Anthropology 4 (3-3) Prereq Anth 566. Graduate-level counterpart of Anth 467; additional requirements. Credit not granted for both 467 and 567.


570 Sediments in Geoarchaeology 4 (3-3) Sediment-forming processes, sedimentological techniques, reconstruction of Quaternary environments, and sedimentology of site-forming processes.

573 Zooarchaeology 4 (2-6) Identification of animal bones from archaeological sites, methodological and theoretical techniques for interpreting faunal remains. Cooperative course taught by WSU, open to UI students (Anth 573).

576 Palynology 4 (3-3) Pollen and spore morphology, evolution, production, dispersal, and preservation; index fossils, dating, archaeology, and vegetational history. Field trip required.

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

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

600 Special Projects or Independent Study Variable credit.

700 Master’s Research, Thesis, and/or Examination Variable credit.

800 Doctoral Research, Dissertation, and/or Examination Variable credit.

Department of Anthropology, Merchandising, and Interior Design

Associate Professor and Chair, C. Salusso; Professors, J. Asher Thompson; Associate Professors, C. Bicknell; R. Krikac; Assistant Professors, N. Brown, T. Collinge, J. Jacob, M. Melcher, J. Turpin; Instructors, P. Fischer, L. Follette.

The Department of Apparel, Merchandising, and Interior Design offers undergraduate and graduate programs leading to Bachelor and Master of Arts degrees in Apparel, Merchandising, and Textiles and in Interior Design.

APPAREL, MERCHANDISING, AND TEXTILES

Exciting and challenging careers are virtually unlimited for students with a degree in Apparel, Merchandising, and Textiles. The textile and apparel industry is global, massive, multi-faceted 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. Graduates are prepared for careers in the textile and apparel industry through coursework designed to develop both professional and personal expertise. Curriculum options are designed to: • Mentor textile and apparel industry issues and practices encompassing historic and futuristic global. Technological, and economic trends, challenges, and opportunities.

• Develop 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 consumer products, merchandising those products, analyzing consumer uses and mediating consumer responses to textile and apparel products.

• Develop analytical, evaluative, communication, teamwork and leadership skills necessary to succeed in today’s work environment.

Areas of Study

All apparel, merchandising, and textile majors complete core courses that introduce fundamental concepts and methods. Students then develop an area of expertise by selecting an option plus a minor or combination of courses reflective of career interests and goals. All students are encouraged to complete an internship in the apparel, merchandising, and textiles industry. Opportunities exist within the apparel, merchandising and textile complex throughout the United States, across the U.S. and through our active alumni network. Internships provide a competitive edge and yield higher level positions upon graduation and significantly better entry salaries.

Interior Textiles Option

Offers a crossover between Apparel and Interior Design coursework supplemented by fine art and business. Careers relate to the home products industry, textile design and marketing, and materials aspects of design.

Merchandising Option

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 minor in Business Administration.

Product Development Option

Focuses on the interaction between design and merchandising and depth in apparel design/product development. Students typically complete a minor in computer aided aspects of fine art and/or business promotion.

Internships

Students in both options are encouraged to complete a cooperative experience internship in the apparel, merchandising, and textiles industry. Opportunities exist with apparel manufacturing and retail throughout the US.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

At least 40 of the total hours required for the bachelor’s degree in the merchandising and product development degree programs must be in 300-400-level courses. Courses required in these programs cannot be taken on a pass, fail basis.

MERCHANDISING DEGREE PROGRAM

(120 HOURS)

Freshman Year

First Semester

AMT 108 3
ComST 102 [C] or H D 205 [C] (GER) recommended 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
ID 201 3

Second Semester

Ag Ec 201 [S] or Econ 101 [S] (GER) 3
Arts & Humanities [H,G] (GER) recommended 3
FSHN 130 [B] (GER) recommended 3
GenEd 111 [A] (GER) 3
Soc 101 [S] or Psych 105 [S] (GER) recommended 3

Sophomore Year

First Semester

Ag Ec 210 3
AMT 215 4
AMT 220 3
Econ 102 [S] (GER) 3
Intercultural [L,G,K] (GER) 3

Second Semester

AMT 208 3
AMT 216 3
Biological Sciences [B] (GER) 3 or 4
Merchandising Elective 3
Stat 212 [N] (GER) recommended 3

Junior Year

First Semester

AMT 314 [M] 3
Merchandising Elective 3
Mgt 301 3
Mktg 360 3
Physical Sciences [P] (GER) 3
Complete Writing Portfolio 3 or 4

Second Semester

Acctg 230 or 300-400-level bus elective 3
AMT 318 3
AMT 420 [M] 3
Merchandising Elective 6

Senior Year

First Semester

AMT 417 [M] 3
Merchandising Elective 3
Mgt 401 3
Mktg 470 3
Tier III Course (GER) 3

Second Semester

AMT 413 [M] 3
AMT 490 or AMT/I D Electives 9
Merchandising Elective 3

1 For a total of 7 credits of Biological and Physical Science electives.
2 Merchandising Electives: Business 300-400-level electives or up to 16 credits of general electives.
3 AMT/I D Electives: AMT 218, 311, 316, 320, 412, 419, 428, 491, 492, 495, 498, 499; I D 101, 102, 211, 311, 498; apparel or interior design transfer courses as approved by the department.
**PRODUCT DEVELOPMENT DEGREE PROGRAM (120 HOURS)**

**Freshman Year**

First Semester

- **Hours**
- AMT 108 3
- ComSt 102 [C] or H D 205 [C] (GER) recommended 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- I D 101 3

Second Semester

- **Hours**
- Arts & Humanities [H,G] (GER) 3
- ComSt 102 [C] or H D 205 [C] (GER) recommended 3
- GenEd 111 [A] (GER) 3
- Product Development Electives1 6
- Soc 101 [S] or Psych 105 [S] (GER) recommended 3

**Sophomore Year**

First Semester

- **Hours**
- Ag Ec 201 [S], Econ 101 [S], or Econ 102 [S] (GER) 3
- Ag Ec 210 3
- AMT 215 4
- AMT 220 3
- F A 110 3
- Product Development Elective2 3

Second Semester

- **Hours**
- AMT 208 3
- AMT 216 3
- Biological Sciences [B] (GER)3 3 or 4
- Intercultural [I,G,K] (GER) 3
- Stat 212 [N] (GER) recommended 3

**Junior Year**

First Semester

- **Hours**
- AMT 311 3
- AMT 316 3
- AMT 402 [M] 3
- Mgt 301 3
- Mkgt 360 3

Second Semester

- **Hours**
- AMT 490 or AMT/I D Electives4 7
- Product Development Elective5 2
- Tier III Course (GER) 3

**Senior Year**

First Semester

- **Hours**
- AMT 417 [M] 3
- I D 311 3
- Interior Textiles Electives2 3
- Mgt 401 3
- Tier III Course (GER) 3

Second Semester

- **Hours**
- AMT 413 [M] 3
- AMT 490 or AMT/I D Elective4 3
- Interior Textiles Electives2 6

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1. Product Development Electives: F A 111; 303 or 304; 313, 331, 332, 380; Theat 163, 264, 368; or up to 18 credits of general electives.
2. For a total of 7 credits of Biological and Physical Science electives.
3. AMT/I D Electives: AMT 218, 311, 316, 320, 412, 419, 423/01, 491, 492, 495, 498, 499; I D 101, 102, 211, 311, 498; apparel or interior design transfer courses as approved by department.
5. AMT/I D Electives: AMT 218, 311, 316, 320, 412, 419, 428, 491, 492, 495, 498, 499; I D 102, 211, 311, 498; apparel or interior design transfer courses as approved by the department.

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**TEXTILE DESIGN DEGREE PROGRAM (120 HOURS)**

**Freshman Year**

First Semester

- **Hours**
- AMT 108 3
- Engl 101 [W] (GER) 3
- I D 101 3
- Intercultural [I,G,K] (GER) 3

Second Semester

- **Hours**
- Ag Ec 201 [S], Econ 101 [S], or Econ 102 [S] (GER) 3
- AMT 219 3
- AMT 220 3
- ComSt 102 [C] or H D 205 [C] (GER) recommended 3
- I D 200 3

**Sophomore Year**

First Semester

- **Hours**
- AMT 314 [M] 3
- AMT 492 3
- Interior Textiles Electives2 6
- Mgt 301 3
- Complete Writing Portfolio

Second Semester

- **Hours**
- AMT 318 3
- AMT 420 [M] 3
- Biological Sciences [B] (GER)3 3 or 4
- Interior Textiles Electives2 3
- Mkgt 360 3

**Junior Year**

First Semester

- **Hours**
- AMT 417 [M] 3
- I D 311 3
- Interior Textiles Electives2 3
- Mgt 401 3
- Tier III Course (GER) 3

Second Semester

- **Hours**
- AMT 413 [M] 3
- AMT 490 or AMT/I D Elective4 3
- Interior Textiles Electives2 6

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**Minor in Apparel, Merchandising, and Textiles**

For a minor in apparel, merchandising, and textiles, the student must complete 18 credits in AMID including AMT 215 and 314; 12 credits from AMT 216, 218, 220, 311, 316, 317, 318, 320, 412, 413, 417, 418, 420, 492. Contact the department office in Kriegel Hall, Room 51, for assignment of advisor to assist in selection of AMT courses. Students must earn a C or better to transfer the credit for a required course.

**Preparation for Graduate Study**

Normally the applicant for graduate study should have an undergraduate major in apparel, merchandising, 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: www.wsu.edu:8080/~gradsch/.

**INTERIOR DESIGN**

The program is based on a concern for human beings and the creation of interior settings that support human activities and values. Graduates of the Program in Interior Design should be able to think creatively and solve problems in a professional manner. Above all, an interior design education helps the student to develop intellectual curiosity, allowing the graduate to continue to develop as a person and as a designer throughout life. Upon completion of the program, students are able to analyze information, evaluate issues, and set priorities while generating creative design solutions for projects of a complex scale.

The interior design program is the only program in Washington accredited by the Foundation for Interior Design Education Research (FIDER) and offers a Bachelor of Arts in Interior Design. The program provides the common body of knowledge related to interior design as recognized by FIDER.

The successful completion of a portfolio review is required 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 wishing to certify into the interior design program must complete a minimum of 45 semester hours including the following six courses: Arch 101, 103, 110, 102, 201, 203, or transfer equivalents as approved by the department.

Students complete their final year at WSU Spokane at the Interdisciplinary Design Institute. The institute represents a unique collaboration among the design disciplines with students and faculty from interior design, architecture, construction management, and landscape architecture working and learning together in a team-oriented, urban environment. As graduates, students’ ability to take the initiative and to make critical judgments of their own designs, as well as others, and to operate within a team context contributes to their future success as professionals.
Degree Program Requirements

INTERIOR DESIGN (120 hours)

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

The interior design program offers a balanced program in interior design with exposure to art, architecture, and humanities. The fourth year is taught at WSU Spokane, and students participate in an interdisciplinary design studio experience. This is an integrated studio with participation from interior design, architecture, construction management, and landscape architecture.

Freshman Year

First Semester

Arch 101 3
Arch 102 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
I D 101 3
Math Proficiency [N] (GER) 1

Second Semester

Arch 103 3
Arts & Humanities [H,G] (GER) 2
GenEd 111 [A] (GER) 3
I D 102 3
Tier I Science [B,P,Q] (GER) 3

Sophomore Year

First Semester

AMT 215 4
ComSt [C] (GER) 3
I D 201 4
I D 205 2
Psych 105 [S] (GER) 3

Second Semester

Biological Sciences [B] 3 or 4
I D 202 3
I D 203 4
I D 211 3
I D 215 3

Junior Year

First Semester

Anh [S,K], Psych [S,K] or Soc [S,K] (GER) 3
Arch 451 2
I D 311 3
I D 321 4
I D 322 1
I D 325 3
Complete Writing Portfolio

Second Semester

I D 312 2
I D 333 4
Intercultural [I,G,K] (GER) 3
Physical Sciences [P] (GER) 3 or 4
Supportive Electives 2

Senior Year--Spokane

First Semester

Hours

Arch 472
I D 415
I D 425
Supportive Electives i
Tier III Course (GER) 3

Second Semester

Hours

I D 392
I D 426
I D 460
I D 409 3 or supportive elective 3

Preparation for Graduate Study

Normally the applicant for graduate study should have an undergraduate major in interior design. 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: www.wsu.edu:8080/gradsch.

Description of Courses

Apparel, Merchandising, and Textiles

AMT

108 Introduction to Apparel, Merchandising, and Textiles 3 (2-2) Overview of textiles/apparel field of study including the apparel and textiles industry, social/psychological aspects of dress, product development.

205 Visual Merchandising and Promotion 3 (2-2) Examination of fashion promotion components of visual display store layout, fashion show, and fashion forecasting. Cooperative course taught jointly by WSU and UI (FCS WS208).


216 Fashion Product Development 3 (0-6) Problem solving approach to apparel and textile product assembly with emphasis on product development process.

218 Apparel Product Analysis I 3 (2-3) Analysis of garments and textile products, product performance, quality control, mass production principles, and consumer value. Cooperative course taught by WSU and UI (FCS 224).

220 Historic Costumes and Textiles 3 Historical survey of western dress and textiles from prehistoric to mid-1800s.

311 Pattern Making 3 (0-6) Prereq AMT 216 or instructor permission. Flat pattern and drafting as pattern making techniques for designing fashion apparel. Cooperative course taught jointly by WSU and UI (FCS 324).

314 [M] Consumer Issues 3 (2-2) Influences on consumer behavior. Cooperative course taught jointly by WSU and UI (FCS 324).

316 Draping 3 (0-6) Prereq AMT 216, 314. Industry overview of materials, production methods, and technological developments in apparel and textile products for specialized markets.

318 Merchandising and Mathematics I 3 (2-2) Overview of apparel retailing, merchandise planning and buying, application of planning and buying principles, preparation for professional experience. Cooperative course taught jointly by WSU and UI (FCS 429).

320 Textiles Design 3 Prereq AMT 108, 215. Textile design with emphasis upon weaving, dying, surface design, or graphics. Cooperative course taught by UI (Art 214), open to WSU students.

412 Fashion Line Development 3 (0-6) Prereq AMT 311, 316. Development of original fashion lines for exhibition to audience. Cooperative course taught jointly by WSU and UI (FCS 424).

413 [M] International Trade in Textiles and Apparel 3 Prereq Mktg 360. Economic/social conditions influencing apparel trade and consumption; comparison of production, distribution, and consumption of apparel in the global economy.

417 [T,D,M] Social and Psychological Aspects of Dress 3 Prereq 6 hours social science; completion of one Tier I and three Tier II courses. Students engage in a multidisciplinary framework in considering the social importance of the body and dress. Cooperative course taught by WSU, open to UI students (HCE 417).

419 Apparel, Merchandising, and Textiles Field Trip 1-3 May be repeated for credit; cumulative maximum 4 hours. Prereq certified majors or instructor’s permission. Field trips to experience the textile and apparel industry from the perspective of professionals within a wide range of careers.

420 [M] History of Fashion Design 3 Overview of fashion design and social history from mid-1800s to present.

428 International Experience in Apparel/Textiles Field 3 May be repeated for credit; cumulative maximum 6 hours. Prereq junior standing. Cultural experience integrated with the field of apparel/textiles in centers of apparel production throughout the world. Credit not granted for both AMT 428 and 528.

490 Cooperative Education Experience V 1-10 Full–semester experience with business, industry, or government unit.

491 Professional Development Seminar 2 Integrated seminar focusing on issues related to cooperative education experiences.

492 Sketching and Graphic Communication 3 (1-4) Prereq A 220, 314. Free-hand sketching and computer graphic techniques in fashion illustration; portfolio presentation and development.

495 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq by interview only.
496 Fashion Portfolio Production V 1-3 Prereq AMT 208 or 216. Producing, exhibiting, and promoting product lines/special events, including the annual portfolio review, or apparel, textiles, and illustrations exhibits.

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.

512 Apparel Product Development 3 Prereq AMT 594. Integration of consumer demand target market research with the development, application, and testing of prototype products for specific end uses.

517 Critical Perspectives on Appearance 3 Prereq graduate standing. Exploration of appearance issues, theory, and research from the perspectives of social science, feminist theory, postmodern and poststructural discourses.

518 Apparel Merchandising Analysis 3 Prereq graduate standing. Analysis of marketing and retailing strategies, trends and technological developments in relation to business and consumer aspects within a global context.

519 Research Methods 2 or 3 Prereq AMT 594, graduate standing. Analysis and understanding of research methods, exploration of thesis topic and literature review development as applicable to the fields of textiles, apparel, and interior design.

520 Aesthetic Analysis of Fashion Design 3 Prereq graduate standing. Framework for in-depth analysis of apparel fashion design provided through exploration of aesthetic and human perception theories within a socio-historic context.

528 International Experience in Apparel/Textiles Field 3 May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of AMT 428; additional requirements. Credit not granted for both AMT 428 and 528.

594 Readings in Apparel, Merchandising, and Textiles 3 Prereq graduate standing. Exploration of current topics through readings in apparel, merchandising, and textiles.

596 Advanced Instructional Practicum 3 Prereq Univ 590 or c/i; graduate standing. 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.

Description of Courses

Interior Design

1D

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.

200 Environmental Design and Communication Laboratory 4 (1-9) Prereq transfer student. Exploration of 2-D and 3-D design principles, skill development, and introduction to micro level interior space design. Credit not granted for both I D 200 and I D 102 or 201.

201 Perception and Communication I Laboratory 4 (1-9) Prereq Arch 101, 103; I D 101, 102, or c/. Application of design concepts into micro environments; design vocabulary and skill development. Credit not granted for both I D 201 and I D 101.

202 [H] The Built Environment 3 Same as Arch 202.


205 Visual Communication 3 (2-2) Course focuses on the various methods in which the interior designer may choose to visually communicate design concepts.

211 History of Design I 3 Prereq I D 211 or by permission only. History of design forms, interiors and furnishings from prehistoric to the Industrial Revolution.

215 Materials and Components of Interior Design 3 Characteristics and properties of structural and non-structural interior materials.

250 [H] History of Interiors I 3 A survey of interior environments, spatial distributions, furnishings, and related design elements from ancient Egypt to the 18th century.

277 Interior Design Field Trip I 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.

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 on a grand scale.

311 [M] History of Design II 3 History of design forms, interiors and furnishings from the industrial revolution through the 20th century.

312 Interior Design Theory 2 Prereq I D 321. Theory, principles, and determinants of interior design applied to current practice.


322 Interior Programming 1 Prereq I D 203, c/i in 321. Introduction to interior programming including space requirement analysis, organizational relationships, and functional diagrams.

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 sectors.

350 [H] History of Interiors II 3 A survey of interior environments, spatial distributions, furnishings, and related design elements in the 19th and 20th centuries.

392 [M] Professional Procedures 3 Business practices and procedures as related to interior design; contract documentation and specification writing.

396 Beginning Computer Applications for Interior Design 3 (0-6) Prereq I D 201. Design problems solving using the computer as a tool.

411 Historical Gender Issues within the Interior Design Profession 3 Examination of the development of the interior design profession in America by comparing and contrasting masculinist and feminist viewpoints.

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 3 Prereq I D 425, by interview only. 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.

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.

495 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq senior standing, by interview only.

499 Special Topics in Interior Design V 1-3 May be repeated for credit; cumulative maximum 6 hours.

599 Special Problems V 1-4 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

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 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 Same as Arch 530.

540 Research Methods 3 Same as Arch 540.

550 Design Applications 2 Same as Arch 550.

560 Interdisciplinary Seminar 3 Same as Arch 560.

561 Interdisciplinary Seminar II 3 Same as Arch 561.
School of Architecture and Construction Management


The School of Architecture and Construction Management offers courses of study leading to three baccalaureate degrees. These are Bachelor of Architecture, Bachelor of Science in Construction Management, and Bachelor of Science in Architectural Studies.

The School of Architecture and Construction Management also offers a postprofessional course of study leading to a Master of Science in Architecture. This degree is available at the Pullman and Spokane campuses.

Most states require that an individual intending to become an architect hold an accredited degree. There are two types of degrees that are accredited by the National Architectural Accrediting Board (NAAB): (1) the Bachelor of Architecture, which requires a minimum of five years of study, and (2) the Master of Architecture, which requires a minimum of three years of study following an unrelated bachelor's degree or two years following a related pre-professional bachelor's degree. These professional degrees are structured to educate those who aspire to registration and licensure as architects.

The four-year, pre-professional degree, where offered, is not accredited by NAAB. The preprofessional degree is useful to those wishing to pursue a foundation in the field of architecture, as preparation for either continued education in a professional degree program or for employment options in fields related to architecture.

Architects are educated to perform professionally in a wide range of design and construction-related areas and assume important roles in the creation of a better built environment. They work in both private and public sectors, from small architectural firms to large government agencies. Architects are required to possess a high level of intuitive, analytical, and technical skills, combined with a deep understanding of human values and needs.

The construction curriculum is planned so that foreign study and other off-campus programs can be incorporated in the fourth and fifth years. Options include a semester in Europe and a year of study in Spokane at WSU Spokane. In Spokane, students will be studying interdisciplinary courses with the construction management, interior design and landscape architecture students. Foreign studies options are available to Pullman and Spokane students.

The construction manager is expected to understand a wide variety of structures that make up the built environment. This awareness includes properties of materials and construction systems and how they are utilized to construct buildings. The student in the program is encouraged to develop an inquisitive and inventive mind in order to deal with new construction methods and management techniques. It is also important that the graduate in construction management be knowledgeable in the field of business.

Courses offered in a variety of departments are required to assure that the breadth of understanding. Construction management students spend their fifth year of study in Spokane at the WSU branch campus.

The School of Architecture and Construction Management is a member of the Association of Collegiate Schools of Architecture and the Associated Schools of Construction. Student chapters of the American Institute of Architects and the Associated General Contractors provide linkages with their professional counterparts. The Bachelor of Architecture degree program is accredited by the National Architectural Accrediting Board. The Bachelor of Science in Construction Management degree program is accredited by the American Council for Construction Education.

Degree Program Requirements

BACHELOR OF ARCHITECTURE (150 HOURS)

First Semester Hours
Arch 101 3
Arts & Humanities [H,G] (GER) 3
Communication Proficiency [C,W] (GER) or Math requirement 3
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3

Second Semester Hours
Arch 103 3
Arch 202 3
F A GER Elective 3
GenEd 110 [A] or 111 [A] (GER) 3
Math 171 [N] or 206 [N] (GER) 3 or 4

1 3 hours of Fine Arts Electives are required. Fine Arts GERs will fulfill this requirement.
2 Students who are not adequately prepared for Math 171 or 206 should take Math 107 as needed during the fall semester of their first year. All freshmen must take the math placement exam.

Pre-Architecture

Students who enter WSU and wish to pursue an architecture degree must take an advisor in the School of Architecture and Construction Management through the Student Advising and Learning Center.

Freshman Year

First Semester Hours
Arch 101 3
Arts & Humanities [H,G] (GER) 3
Communication Proficiency [C,W] (GER) or Math requirement 3
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3

Second Semester Hours
Arch 103 3
Arch 202 3
F A GER Elective 3
GenEd 110 [A] or 111 [A] (GER) 3
Math 171 [N] or 206 [N] (GER) 3 or 4

Professional Program

The School of Architecture and Construction Management accepts 60-64 students into the second year. Students who wish to enroll in second year must submit an application to the School of Architecture during the previous spring semester. To be considered, a student must have completed at least 26 semester credit hours of architectural program requirements, including the following courses, or their equivalents from other institutions: Arch 101, 103, 202, Engl 101, GenEd 110 or 111; Math 171 or 206 or Phys 101 or 201. A grade of C or better must be achieved in Arch 101 and 103. Selection is based on the student's g.p.a. in the 26+ semester credit hours of required course work. If students do not complete Arch 101, 103, and 202 at WSU, they will be required to submit visual evidence of their architectural graphic and design work for review by the Admissions Committee. Most of the students will be selected at the end of the WSU spring semester but some positions will be held open until summer for transfer students.

Sophomore Year

First Semester Hours
Arch 201 3
Arch 207 1
Arch 220 3
Arch 330 2
Phys 101 [P] or 201 [P] (GER) 4
Social [S, K] Sciences (GER) 3

NOTE: At least 3 hours of Physical Science Electives from the school’s approved list are required for admission into the third year.

Third-Year Admissions and Certification

Yrs three, four, and five constitute the certified professional program in architecture. A maximum of 45-48 students are admitted into the third year each fall and are certified in architecture. To be considered, a student must submit an application to the School of Architecture and Construction Management during the previous spring semester and have completed 54 semester credit hours, including all the first- and second-year architectural program requirements. Students not currently enrolled in architectural design courses at WSU must also submit a portfolio. Selection is based on the g.p.a. in the required 54+ semester credit hours. The courses which must be included are all the first-year courses listed above plus Arch 201, 203, 207, 209, 220, 330, 331, Physics, Math, and a physical science GER. The remainder of the credits will be made up of GER, electives, and fine arts courses required for graduation. The screening is done at the end of the WSU spring semester. Most of the students will be selected at the end of the spring semester, but some positions will be held open until midsummer for transfers.

As part of the WSU branch campus system, the school sends 15 fourth- and 15 fifth-year students to Spokane. Upon application to the third year, students are given the option of selecting either Pullman or Spokane for their studies. 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. In the third year, acceptance letter students will be notified as to whether they will spend their fourth or fifth year in Pullman or Spokane. By accepting admission to the third year, students also accept the conditions of their place of study during the fourth or fifth year. Students are not allowed to spend both the fourth and fifth year in Spokane.

Application/Portfolio/Notification Deadlines:

April 15 All second-year and third-year applications due.
May 1 Portfolios due from second- and third-year applicants who did not complete Arch 101, 103, 201, 202, 203 at WSU.
June 15 Screening complete: Applicants will be classified as accepted or denied. Applicants will be notified by mail.
Midsummer Late screening for transfers: Applicants will be classified as accepted or denied and will be notified by mail.

NOTE: Students offered positions in the second-year courses or third-year program 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.

Junior Year

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<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arch 203</td>
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<td>Arch 209</td>
<td>5</td>
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<td>Arch 307</td>
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<td>Arch 324</td>
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<td>Arch 351</td>
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<td>Arch 353</td>
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<td>Arch 432</td>
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<td>Complete Writing Portfolio</td>
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Second Semester

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<th>Hours</th>
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<td>Arch 303</td>
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<td>Arch 309</td>
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<td>Arch 352</td>
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<td>Arch 354</td>
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<td>Arch 423[M]</td>
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<td>Arch 433</td>
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<td>Arch 411</td>
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Senior Year

First Semester

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<td>Arch 401</td>
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<td>Arch 407</td>
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<td>Arch 434</td>
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<td>Arch 461</td>
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<tr>
<td>Intercultural [L, G, K] (GER)</td>
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Second Semester

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<th>Hours</th>
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<tr>
<td>Arch 403</td>
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<tr>
<td>Arch 490</td>
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<tr>
<td>Arch Emphasis Electives [M]</td>
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<tr>
<td>Arts &amp; Humanities [H, G] or Social Sciences [S, K] (GER)</td>
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<tr>
<td>Tier III Course (GER)</td>
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Fifth Year

First Semester

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<th>Hours</th>
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<td>Arch 411</td>
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<tr>
<td>Arch 415</td>
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<td>Arch 472</td>
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<tr>
<td>Arch Emphasis Electives</td>
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Second Semester

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<th>Hours</th>
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<tr>
<td>Arch 413</td>
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<td>Arch 473</td>
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<tr>
<td>Arch Emphasis Electives</td>
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| FYDA (FIVE YEAR AGREEMENT) |

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Construction management is a five-year program structured into two years of preconstruction management, two years of construction management, and one year of focused specialized study. Construction management students are required to spend their fifth and final year at the WSU branch campus in Spokane to enhance opportunities for specialized study and increase interaction with professionals in the construction industry.

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. It should be noted that the freshman class of 1998 will be required to purchase a computer after acceptance to the third year. Purchase should be made in conjunction with school requirements. It is the policy of the school to provide support for software and networks.
PRECONSTRUCTION MANAGEMENT

Freshman Year

First Semester
- Arch 101 or M E 103
- Engl 101 [W] (GER)
- GenEd 110 [A] (GER)
- Geol 101 [P] (GER)
- Intercultural [I,G,K] (GER)

Second Semester
- Arts & Humanities [H,G] (GER)
- Biological Sciences [B] (GER)
- Econ 101 [S] (GER)
- GenEd 111 [A] (GER)
- Math 171 [N] or 206 [N] (GER)

Sophomore Year

First Semester
- Acctg 230
- B Law 210
- Econ 102 [S] (GER)
- Phys 101 [P] or 201 [P] (GER)

Second Semester
- Acctg 231
- Cpt S 105
- Dec S 215
- Math 201

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 takes place between the second- and third-year level when certification is granted and enrollment to 300- and 400-level Arch and Cst M courses is allowed. Note that this limitation is imposed because of limited space, equipment and faculty resources. Students may transfer to the school during the two-year preconstruction program or apply directly for third-year certification.

Third-Year Admission:
Every year a maximum of 30 students will be certified and allowed to continue to third year after they successfully pass through the screening process which will take place at the termination of spring semester after grades are received.

The Construction Management Program Coordinator reviews all applications and makes recommendations to the School of Architecture’s Admissions and Academic Affairs Committee regarding applicants. Selection will be made on or about July 15; all applicants will be notified of their status by letter mailed from the School of Architecture as soon as possible thereafter. Successful applicants will also be certified into the Construction Management Program as soon as possible thereafter.

Course and G.P.A. Requirements for Screening:
Because the school receives more applications from qualified students than can be accommodated, screening for entry into the third year is based on the applicant fulfilling the minimum requirements listed and the applicant’s overall g.p.a. To be considered for admission, an applicant must:
1. Qualify for admission into Washington State University.
2. Complete the first two years as listed herein under Preconstruction Management.
3. Earn a grade of C or better in Acctg 230, 231, Arch 101 or M E 103, B Law 210, Cpt S 105, Dec S 215, Econ 101, 102, Geol 101, Math 171 or 206, 201; Phys 101 or 201.
4. Complete and submit, by May 1, an application to the Construction Management Program.

Applications Requirements and Deadlines:
Applications are due May 1 for admission and certification into the program at the beginning of the fall semester. Grade records for transfer students for the semester that are 12 credits or more must be available to the Construction Management Coordinator before July 1.

CONSTRUCTION MANAGEMENT DEGREE PROGRAM

Junior Year

First Semester
- Arch 330
- Arch 351
- Arch 432
- C E 301
- Cst M 201
- R E 305
- Complete Writing Portfolio

Second Semester
- Arch 331
- Arch 352
- Arch 433
- Cst M 453
- Fin 325
- Business Ad. Elective1

Senior Year

First Semester
- Arch 332
- Arch 461
- Cst M 470
- Business Ad. Electives1

Second Semester
- Arch 462
- Cst M 442 [M]
- Cst M 453
- Cst M 456
- Engl 301 [W] or 402 [W] (GER)

Fifth Year (WSU Spokane)

First Semester
- Cst M 451 [M]
- Cst M 452
- Cst M 457
- Cst M 471
- Business Ad. Elective1

Second Semester
- Arch 451
- Arch 490 or 491
- Cst M 495
- Cst M 499
- Tier III Course (GER)

Description of Courses

Architecture

101 Graphics Communication 3 (0-6) Drawing to perceive three-dimensional space; freehand (architectural) drawing, drafting, isometric and orthographic drawing; perspective, shades and shadows, lettering, and rendering techniques.

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.

Innovation in Design 2 Same as M E 120.

Architectural Design I 3 (0-6) Prereq Arch 103, c/ in Arch 207. Introduction to architectural design focusing on cultural/symbolic issues.

The Built Environment 3 Design and planning of the built environment: products, interiors, structures, landscapes, cities, regions, earth; human-environmental interactions, sustainability, and quality.

Architectural Design II 3 (0-6) Prereq Arch 201, c/ in Arch 209. Introduction to architectural design as influenced by building technology, building systems and craft.

Design Theory I 1 Prereq c/ in Arch 201. Introduction to design theory relating to cultural/symbolic issues.

Design Theory II 1 Prereq c/ in Arch 203. Design theory relating to building technology, systems and crafts which influence design decisions.

Architectural History I 3 Historic development of world architecture from prehistory to late medieval; social, technical and scientific influences.

Architectural History II 3 Development of American architecture; cave dwellings, native American architecture, colonial styles to contemporary architecture; effects of European styles upon America.

Architectural Design III 5 (0-10) Prereq Arch major; c/ in Arch 307. Introduction of architectural design focusing on environmental and social issues.

Architectural Design IV 5 (0-10) Prereq Arch 301, c/ in Arch 309. Continuation of study of architectural design/form as influenced by cultural, spiritual and symbolic issues.

Design Theory III 2 Prereq certified Arch major; c/ in Arch 301. Introduction to design theory relating to environmental and social issues.

Design Theory IV 2 Prereq c/ in Arch 303. Continuation of design theory relating to cultural/symbolic issues which influence design decisions.

Renaissance to Baroque Architecture 2 Western architecture from the Renaissance to Baroque to pioneers of modern architecture.

Materials and Construction I 2 Wood and masonry materials and construction systems; timber frame and bearing wall construction; other uses of wood and masonry.

Materials and Construction II 2 Prereq Arch 330. Continuation of Arch 330. Concrete and metal materials and construction systems; foundation, framing and roof systems.

Materials and Construction III 3 Prereq major in Arch or Cst M. Theory and application of various construction systems and material applications.
432 Environmental Control of Buildings I 3 Mechanical systems for buildings; building heating, ventilating, and air conditioning systems; heat flow concepts.

433 Environmental Control of Buildings II 3 Prereq Arch 432. Water supply, drainage, electrical and lighting systems; fire protection systems.

434 Acoustics 1 Prereq major in Arch or Cst M. Sound theory, control, acoustics, and reinforcement systems as applied to architectural problems.

436 Contemporary Furniture Design 3 (1-4) Prereq Arch 103. Investigation of issues related to the design and fabrication of furniture; students design and fabricate projects in the school shop.

438 Energy, Design and Computers 2 (1-2) or 3 (1-4) Prereq Arch 303, 423. Design theory and methods of energy and resource conservation in architecture through the use of daylight modeling and computers.

441 Lighting Design 3 Prereq Arch 432. Engineering and aesthetics of lighting design for buildings; case studies, field trip, studio design exercises.


446 Architectural Animation 3 (1-4) Prereq certified Arch major, Cpt S 150 or 205. Introduction to computer animation production, building simulation and related CAD modeling techniques.

451 Computer-aided Design I 2 (1-2) Prereq basic computer course. Science and art of architectural computer-aided design for design discipline students.

452 Computer-aided Design II 2 (1-2) Prereq basic computer course. Continuation of Arch 451.

456 Field Sketching/Journal Keeping 3 (2-2) Prereq junior standing. Field-sketching/journal keeping strategies to facilitate investigation and comprehension of the built environment.

461 Architectural Structures III 3 Prereq Arch 352. Wind and seismic loads on architectural structures; high-rise structure systems; reinforced concrete structures.

462 Architectural Structures IV 3 Prereq Arch 352. Deflection theory; classical and computer analysis for statically indeterminate architectural structure systems.

472 Construction Communications/Codes 2 Prereq major in Arch. Codes; specifications, project manuals, and contract documents.

473 Professional Practice 2 Prereq Arch 472. Architectural practice; techniques for and rationale of marketing architectural services; office organization and business methods applied to architecture.

480 Architecture Internship V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq major in Arch. Advanced internship in architectural design.

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

492 Seminar in Architectural History V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq major in Arch. Advanced study in architectural history.

493 Seminar in Environmental Control V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq major in Arch or Cst M. 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. 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 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 senior in Arch. Advanced study in architectural practice management.

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

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

500 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.

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.

540 (S10) Research Methods 3 Prereq graduate standing. Research methods, from quantitative to technical to philosophical, director toward qualitative research.

546 Computer Animation 3 May be repeated for credit; cumulative maximum 9 hours. Prereq Arch 446 or Cpt S 446; by interview only. Advanced computer animation techniques; advanced specialization in design and computer use in architectural and regional planning.

550 Seminar in Environmental Control V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq Arch 352. Engineer-
580 Architecture Internship V1-16 May be repeated for credit. Prereq graduate student in Arch. Placement in an approved industrial, professional, or governmental situation for specialized or general experience.

600 Special Projects or Independent Study V Same as Arch 442.


Description of Courses

Construction Management

Cst M

201 Introduction to Construction 2 (1-3) Prereq major in Cst M. Construction industry overview; reading plans and specifications; analysis of the Business Roundtable’s Construction Industry Cost Effectiveness project.

442 [M] Theory of Urban Design and Development 3 Same as Arch 442.


452 Construction Practice Management 3 Business/management practices for a construction firm; building construction project management.

453 Construction Communications/Law/Codes 3 (2-3) Construction communications and law overview; analysis and interpretation of contract documents and the uniform building code.

455 Construction Scheduling 3 (2-3) Precedence and arrow networking techniques for construction; fundamentals of scheduling computations, time–cost adjustments, resource leveling; computer scheduling software overview. Cooperative course taught by WSU, open to UI students (Cst M 455).

456 Methods and Procedures of Construction I 4 Prereq Arch 461, Cst M 470. Methods and procedures for site work, foundation construction, concrete construction; equipment, labor, and safety requirements.

457 Methods and Procedures of Construction II 4 Methods and procedures for masonry construction, steel construction, wood and timber construction, high-rise construction; equipment, labor, and safety requirements.


471 Estimating II 3 (1-6) Computerized construction cost estimating and cost management; personal computer software applications spreadsheet, file management, database, and custom-type programs.

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

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

Asia Program

Professor and Program Director, M. Töhmächëva (History, Middle East); Professors, T. L. Kennedy (History, East Asia); T. Lumpkin (Crop and Soil Sciences, East and South Asia); J. McCullough (International Business, Southeast Asia); L. Stone (Anthropology, South Asia); Associate Professors, F. W. Blackwell (History, South Asia), C. S. Ivory (Art History, the Pacific), R. A. Jussaume (Rural Sociology, Japan), N. Kawamura (History, East Asia), M. Myers (Philosophy and Religion, South Asia, East Asia), R. Sun (History, East Asia); Assistant Professors, C. Lüpke (Chinese), D. Sommerfeld (Sociology, Southeast Asia), P. Thiers (Political Science, East Asia); Librarian, A. M. Spitler (South Asia).

The Asia Program is designed to provide a broad, systematic knowledge of Asia through interdisciplinary study and is intended to serve four major objectives:

1. to prepare students intending to teach courses on Asia in public schools,
2. to provide academic background for those planning to pursue graduate work on Asia,
3. to prepare students for business careers dealing with Asia, and
4. to train those interested in governmental and various private career opportunities related to Asia.

The flexibility of the program affords both an area concentration and a departmental specialization. The program offers the degree of Bachelor of Arts in Asian Studies.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs. As American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

A minimum of 40 hours (46 for comprehensive option) of courses on Asia and in related fields including 16 hours of an appropriate language.

ASIA DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester

Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Science Elective (GER) 3

Second Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Asia 275 3
Biological Sciences [B] (GER) 4
GenEd 111 [A] (GER) 3
Social Sciences [S,K] (GER) 3

Sophomore Year

First Semester

Asia 270 3
Asia 272 3
Foreign Language Elective 1 4
Physical Sciences [P] (GER) 4

Second Semester

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Foreign Language Elective 1 4
Major Coursework 2 9

Junior Year

First Semester

Hours
Arts & Humanities [H,G] (GER) 3
Communication Proficiency [C,W] (GER) 3
Foreign Language Elective 1 4
Major Coursework 2 6
Complete Writing Portfolio

Second Semester

Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Foreign Language Elective 1 4
Major Coursework 2 9

Senior Year

First Semester

Hours
Intercultural [I,G,K] (GER) 3
Major Coursework or Electives 3 6
Electives 3 6

Second Semester

Hours
Tier III Course (GER) 3
Electives 3 11

1 16 hours of an appropriate language are required.
2 A minimum of 40 hours (46 for comprehensive option) in one of the following options, including two Writing in the Major [M] courses:
   Asia: China 270, 272, 275, 315 [M], 373, 374, 476, Asia electives.
   Japan: Asia 270, 272, 275, 315 [M], 374, 477, Asia electives.
   South Asia: Asia 270, 272, 273, 275, 314 [M], 370, 470 [M], Asia electives.
   Middle East: Asia 270, 272, 273, 275, 306, 472 [M], Asia electives.
   Comprehensive: Asia 270, 272, 273, 275, 315 [M], 370, 373, 374, 470 [M], 476.

Students should consult their adviser to determine when courses are offered.
3 Or relevant 300-400-level courses not mentioned which may be counted toward a major or minor if approved by the Director of the Asia Program.

MINOR:
A minor in Asian Studies requires 21 hours, of which at least 9 credit hours must be earned at WSU; two semesters of an appropriate language are strongly recommended. China: Asia 275, 315, 373, 374, 476. Japan: Asia 275, 315, 374, 477, Asia Elective. South Asia: Asia 270, 273, 314, 370, 470. Middle East: Asia 272, 273, 306, 472, Asia Elective.

All courses are crosslisted in the Asia Program.

Description of Courses

Asia

270 [K] India: History and Culture 3 Same as Hist 270.

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 East Meets West 1 Intensive mini-course on Asia and globalization, taught in conjunction with the public symposium on the Pullman campus. S, F grading.

Program in Astronomy

Professor and Program Director, M. D. Miller

Astronomy is the study of celestial bodies including the sun, planets, satellites, stars, and galaxies. The various courses offered in astronomy are intended to provide background for both liberal arts and science majors.

The astronomy faculty are part of the Department of Physics. The WSU Planetarium and the Jewett Observatory are used as instructional aids in the astronomy courses. Opportunities are available for students to collaborate with astronomy faculty to do research projects with the 3.5 m Apache Point Telescope which can be operated remotely from the WSU Pullman campus.

A minor in astronomy requires 16 hours as follows: a minimum of 10 hours 300-400-level astronomy courses which must include ASTR 345 and at least 1 hour of ASTR 499; 6 hours from CPT 330; HIST 308; MATH 360, 440, 441, 443, 444, 448; PHYS 320, 341, 342, 443, 450.

Description of Courses

Astronomy

ASTR 135 [P] Descriptive Astronomy 3 Physical characteristics and motions of the bodies of the solar system, stars, nebulae, and galaxies. Credit not granted for both ASTR 135 and 345.

ASTR 150 [Q] Science and the Universe 3 Basic science background, including physical concepts, scientific reasoning, data analysis, and astronomical applications.

ASTR 345 [P] Principles of Astronomy 3 Prereq Phys 102 or 202. Planets, the sun, stars, and galaxies; current topics in astrophysics and planetary re-search. Credit not granted for both ASTR 135 and 345.

School of Biological Sciences


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 or coordinates under-graduate minors in Zoology, Biology, and Ecology.

Facilities

There are modern facilities for graduate study in cell and developmental biology, genetics, plant and animal physiology, anatomy and ultrastructure, functional morphology, ecology, molecular systematics, and be-havioral, environmental, and evolutionary biology. The university's rural location is conducive to field stud-ies. Special facilities include the collections of the Charles R. Conner Museum, the Owenby Herbarium, the George E. Hudson Biological Preserve of 760 acres, the Electron Microscopy Center, the plant growth fa-cilities, and the Eastlick Vivarium for maintaining lab animals.

Cooperation with many other campus units extends research opportunities. Cooperative arrangements with faculty in units such as Molecular BioSciences, Animal Sciences, Natural Resource Sciences, and the Veterinary College are readily achieved.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Di versity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of General Education Requirements. Advanced biological sciences courses probe specific areas in depth.

Four options are available for the Bachelor of Science degree in Biology: Biology Education, Botany, General Biology, and Prephsychical Therapy (Prehealth). 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 to students who are interested in plants and is particularly suitable for those who would like to pursue graduate studies. The General Biology option provides very appropriate, broad train-ing in the life sciences, particularly for students seeking to continue in professional or graduate school. The Prehealth option prepares students specifically for health-related careers.

The flexible curriculum leading to a Zoology degree meets the needs of students with various interests and goals. The General Zoology option provides a broad, solid foundation in zoology. It is aimed especially at students desiring a well-rounded background for fur-thering professional studies, such as in graduate or veterinary school. Students aspiring to enter medical or dental school should find the Premedical/Predental option to be particularly appropriate. Another option is the course program in Ecology. This program provides the graduate with a broadly-based ecological understanding applicable to such fields as environmental and wildlife biology. The option in Animal Care prepares students for careers involving animal care and maintenance in research institutions, zoos, aquaria, and clinics.

An undergraduate preparation in either Biology or Zoology provides a student with the basis for pursuing vocational opportunities in ecology, laboratory research and technology, human health, animal health and welfare, and a variety of other biological specializations.

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 organi'mal biology to ecology and evolutionary bi-ology. A list of specific faculty interests can be obtained at www.sci.wsu.edu/sbs/ or by writing to the school.
# Biology

## First Year Requirements
The first year requirements are common to all biology degree programs:

### Freshman Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
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<tbody>
<tr>
<td>First</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biol 103 [B] (GER)</td>
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</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</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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<td>Biol 104 [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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<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
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### Second Semester Hours

Electives 3

### Junior Year

<table>
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<th>Semester</th>
<th>Hours</th>
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<tr>
<td>First</td>
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<tr>
<td>Biol 103 [B] (GER)</td>
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<td>Chem 105 [P] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
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### Sophomore Year

<table>
<thead>
<tr>
<th>Semester</th>
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<tr>
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<td>Biol 200</td>
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<td>ComSt 102 [C] (GER)</td>
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<td>Phys 101 [P] (GER)</td>
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<td>Psych 105 [S] (GER)</td>
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<tr>
<td>T &amp; L 300</td>
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<td>Second</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Engl 201 [W], 301 [W], or 302 [W] (GER)</td>
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<tr>
<td>MBioS 301</td>
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<td></td>
</tr>
<tr>
<td>MBioS 303</td>
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<td>T &amp; L 301</td>
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### Senior Year

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<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
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<tbody>
<tr>
<td>First</td>
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<tr>
<td>Biol 372 [M]</td>
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<tr>
<td>Chem 220</td>
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<td>Chem 222</td>
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<td>T &amp; L 302</td>
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<tr>
<td>T &amp; L 303</td>
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<tr>
<td>T &amp; L 317</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<td>Second</td>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Biology Electives</td>
<td>5</td>
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<tr>
<td>EdPsy 402</td>
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<tr>
<td>T &amp; L 400</td>
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### Junior Year

<table>
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<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
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<tr>
<td>Biol 490 [M]</td>
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<td>Biology Elective</td>
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<tr>
<td>MvSt 362</td>
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<tr>
<td>Electives</td>
<td>6-8</td>
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<tr>
<td>Biology Electives</td>
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<tr>
<td>ExSci 463</td>
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<td>Tier III Course (GER)</td>
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<tr>
<td>Electives</td>
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### Sophomore Year

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<th>Hours</th>
<th>Courses</th>
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<tbody>
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<tr>
<td>Biol 200</td>
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<tr>
<td>Chemistry Elective</td>
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<tr>
<td>MvSt 362</td>
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<tr>
<td>Electives</td>
<td>6-8</td>
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</table>

### First Semester Hours

Electives 2 or 3

### Second Semester Hours

Complete Writing Portfolio

### General Biology Degree Program (137 Hours)

<table>
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<th>Hours</th>
<th>Courses</th>
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<tbody>
<tr>
<td>First</td>
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<tr>
<td>Biol 200</td>
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<td></td>
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<tr>
<td>Chemistry Elective</td>
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<td></td>
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<tr>
<td>Biology Elective</td>
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<td></td>
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<tr>
<td>MvSt 362</td>
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<tr>
<td>Electives</td>
<td>6-8</td>
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### Junior Year

<table>
<thead>
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<th>Hours</th>
<th>Courses</th>
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</thead>
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<tr>
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<tr>
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<tr>
<td>Electives</td>
<td>6-8</td>
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</tr>
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### Senior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
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<tr>
<td>First</td>
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<tr>
<td>Biol 400</td>
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<tr>
<td>Biology Elective</td>
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<tr>
<td>Electives</td>
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</table>

## Directed Teaching-Fifth Year

<table>
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<th>Hours</th>
<th>Courses</th>
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<tbody>
<tr>
<td>T &amp; L 415</td>
<td>16</td>
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</table>

1 Pre-med students and those interested in advanced degrees should take Chem 340, 341, 342, 343 (a one-year course in organic chemistry).

### Prehealth Degree Program (120 Hours)

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td>First</td>
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<tr>
<td>Biol 372 [M]</td>
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<td>Chem 240</td>
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<td>Psych 105 [S] (GER)</td>
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<td>Soci 101 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Second</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>MBioS 301</td>
<td>4</td>
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<tr>
<td>Phys 102 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Zool 251</td>
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</table>

### Second Semester Hours

Electives 2 or 3

### Senior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
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<tr>
<td>Biol 405</td>
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<tr>
<td>Bot 409</td>
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<tr>
<td>Degree Program Elective</td>
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<tr>
<td>Electives</td>
<td>6</td>
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<tr>
<td>Second</td>
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<tr>
<td>Bot 448, 460, or 462</td>
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<tr>
<td>Bot 450</td>
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<tr>
<td>Tier III Course (GER)</td>
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<tr>
<td>Electives</td>
<td>7 or 8</td>
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</tr>
</tbody>
</table>

1 Pre-med students and those interested in advanced degrees should take Chem 340, 341, 342, 343 (a one-year course in organic chemistry).

### Social Sciences [S,K] (GER) 3

### Interdisciplinary [I,G,K] (GER) 3

### Electives 2 or 3

### Complete Writing Portfolio

## Botany Degree Program (120 Hours)

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
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<tr>
<td>Biol 200</td>
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<td></td>
</tr>
<tr>
<td>Chemistry Elective</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Biology Elective</td>
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<tr>
<td>Electives</td>
<td>6-8</td>
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</table>

### Second Semester Hours

Complete Writing Portfolio

### General Biology Degree Program (120 Hours)

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
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<tr>
<td>Biology Elective</td>
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</tr>
<tr>
<td>Electives</td>
<td>6-8</td>
<td></td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biol 372 [M]</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Chemistry Elective</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Biology Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>6-8</td>
<td></td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biol 400</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Biology Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

### Directed Teaching-Fifth Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>T &amp; L 415</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

1 Pre-med students and those interested in advanced degrees should take Chem 340, 341, 342, 343 (a one-year course in organic chemistry).

---

### Biology Education Degree Program (137 Hours)

- **First Year Requirements**
- **Sophomore Year**
- **Junior Year**
- **Senior Year**
- **Directed Teaching-Fifth Year**
- **Prehealth Degree Program (120 Hours)**
- **Botany Degree Program (120 Hours)**
- **General Biology Degree Program (120 Hours)**

---

68
Biology Electives 5
Zool 405 3
Electives 4 or 5

**Second Semester**  
Hours

**Biology Electives**  4
**MBioS 401**  3
Intercultural [L,G,K] (GER) 3
Tier III Course (GER) 3
Electives 3

---

1 Pre-med students and those interested in advanced degrees should take Chem 340, 341, 342, 343 (a one-year course in organic chemistry).

**Minor in Biology**

Requirements: A minimum of 20 hours in biological science courses including 12 hours of 300-400-level courses; a course in introductory biology, MBioS 301, and Biol 372; a maximum of 2 hours of 499 credit. Additional hours from Microbiology, Biology, Botany, and Genetics and Cell Biology, and/or Zoology, to include one course in physiology.

**Transfer Students**

Transfer students must satisfy the program requirements for graduation. Science courses taken at other institutions will be evaluated and credits accepted where possible. Inquiries should be directed to the program chair.

**ZOOLOGY**

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. 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. No courses graded pass, fail can be applied toward satisfying university or college requirements or toward fulfilling departmental requirements or program options.

**ZOOLOGY DEGREE PROGRAM**

All four of the department's course-program options, including those arranged on an individualized basis with the advisor, require the completion of the department's core curriculum consisting of an array of courses common to all options plus 12 hours of additional courses taken in the particular program option.

The core curriculum thus incorporates a portion of option-specific course work to form an integrated set of degree requirements.

The core curriculum fulfilling the requirements for the B.S. Degree in Zoology is comprised of the following: Biol 103 and 104; Biol 372 [M] or Zool 330; chemistry through organic (Chem 240, or 340 and 341); MBioS 301; General Physics (Phys 101 and 102, or 201 and 202); math through calculus (Math 140, 171, or 201); Zool 393 [M]; Zool 350 or 353, or 352 and 452 [M], or 450 and 452 [M]; two from Zool 320, 322, 324; Zool 405; an additional 12 hours of program-option courses, other Zoology courses or adviser-approved supportive course work. In the degree program sequence below, these additional courses are designated as Program Option Courses.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 103 [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 140 [N], 171 [N], or 202 [N] (GER)</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

**Second Semester**  
Hours

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 104 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 102 [P] or 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Sophomore Year**  
Hours

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 240 (or 340 &amp; 341)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Program Option Course</td>
<td>4</td>
</tr>
</tbody>
</table>

**Junior Year**  
Hours

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Program Option Course</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Zool 320, 322, or 324</td>
<td>4</td>
</tr>
<tr>
<td>Zool 393 [M]</td>
<td>2</td>
</tr>
</tbody>
</table>

**Complete Writing Portfolio**

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3-6</td>
</tr>
<tr>
<td>Biol 372 [M] or Zool 330</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Program Option Course</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Zool 320, 322, or 324</td>
<td>4</td>
</tr>
</tbody>
</table>

**Senior Year**  
Hours

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [L,G,K], or Social Sciences [S,K] (GER)</td>
<td>6</td>
</tr>
<tr>
<td>Program Option Course or Elective</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Zool 350 or 353</td>
<td>4</td>
</tr>
<tr>
<td>Zool 405</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Option Courses or Electives</td>
<td>8-10</td>
</tr>
<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Zool 350 or 353</td>
<td>4</td>
</tr>
</tbody>
</table>

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1 Math 107 may be needed before enrolling in calculus, depending on math placement score.
2 Premedical and predental students should select Chem 105, 106, 340 & 341, and subsequently take Chem 342 and either Chem 343 or MBioS 303. Pre-veterinary students may take Chem 240, but also need to complete MBioS 303 to qualify for veterinary school admission.
3 Zool 224 and its complementary laboratory course, Zool 225, are recommended as preparatory courses for advanced zoology courses and can be applied toward the 12 hours of additional credits in the core curriculum. If a student elects not to take them, Zool 322 is available to take in the fall semester of the sophomore year.
4 Consult the list of courses in the course-program options below or see adviser for other options.
5 Students selecting the General Zoology Option or the Ecology Option should take Biol 372.

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\* One of Zool 350, 352, 353, 450 is required. Zool 350 and 353 include a laboratory component. If Zool 352 or 450 is selected, Zool 452 is also required as a complementary lab course.

**COURSE-PROGRAM OPTIONS**

The complement of courses in each of the department's four principal options is listed below. Students are advised to complete the entire complement to assure adequate preparation in the option. Twelve of the credits earned are applied as part of the core curriculum to satisfy degree requirements.

**Animal Care Option**

A S 285, Zool 224, 225, 438 [M], 498 (1-4 hours of career experience internship); A S 314 or NATRS 431; MBioS 302, Zool 417 [M]. (Also MBioS 303 if preveterinary).

**Ecology Option**

Bot 332, 462 (463 [M] also recommended), one from NATRS 450 [M], Zool 330, 426 and 429, 443, 447; one from Zool 310 [M], 410, 411, 412, 414; one from Entom 343 and 344, Zool 322, 412, 423, 428, 430 [M]; an approved statistics course. (This option fulfills a minor in ecology.

**General Zoology Option**

An additional selection from Zool 350, 353, 352 and 452 [M], or 450 and 452 [M]; two from Entom 343 and 344, 448, Zool 322, 412, 417 [M], 423, 428, 430 [M]; an approved statistics course. (Also MBioS 303 if preveterinary).

**Premedical/Predental Option**

An additional selection from Zool 350, 353, 352 and 452 [M], or 450 and 452 [M]; Chem 105, 106, 340, 341, 342; MBioS 303 or Chem 343; one course from Entom 343 and 344, 448, Zool 322, 412, 417 [M], 423, 428, 430 [M]; an approved statistics course.

**PRE-VETERINARY PROGRAM**

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 g.p.a. following this schedule should choose to finish the preprofessional requirements in three years.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

**Second Semester**  
Hours

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 104 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>
| Biol 332, 462 (463 [M] also recommended), one from Entom 343 and 344, 448, Zool 322, 412, 417 [M], 423, 428, 430 [M]; an approved statistics course. (Also MBioS 303 if preveterinary).

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Transfer Students

A student entering the department from a community college or as a junior transfer from another university should have completed the equivalent of the following:

- Biol 103, 104: Math through calculus; chemistry through organic (Chem 240); Phys 101, 102; a course in genetics; part of the non-science university requirements; and a year of foreign language if two years were not previously completed in high 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 in the College of Agriculture and Home Economics may be prepared for graduate study in biology. Graduate Record Examination scores from the general aptitude and advanced biology sections are required.

Description of Courses

Biology

101 [B] Direction in Biological Sciences 3 Understanding biology as a science and its effect on issues within society. Credit not granted for more than one of Biol 101, 102, 103.

102 [B] General Biology 4 (3-3) Not open to students who have taken a college-level course in general biology or botany. Nature of living things, methods, and function of diverse organisms. Credit not granted for Biol 102 and 103, 101 or 105.

103 [B] Introductory Biology 4 (3-3) Prereq one semester Chem or C/. First semester of a one-year sequence. Recommended for pre-professional students. The nature of life, structure, function, genetics, growth, and development. Credit not granted for Biol 103 and 101, 102, or 105.

104 [B] Introductory Biology 4 (3-3) Prereq Biol 103 (Biol 101 or 102 with a grade of A or B may be substituted); two semesters Chem or C/. Continuation of Biol 103. Biology of organisms; plants, animals, bacteria, ecology, and evolution.

105 [B] Biological Science Laboratory 1 (0-3) Prereq college-level nonlaboratory general biology course. Elements of structure and function of organisms. For non-majors in the biological sciences. Credit not granted for more than one of Biol 102, 103, 105.

150 [G] Genetics and Society 3 (2-3) Genetics as it relates to current issues; history of genetics, genetic engineering, medical, agricultural, and population genetics and ecology.

201 [B] Contemporary Biology 1 Prereq Biol 101, 102, 103, Bot 120, or MBioS 101. Biological information that provides a framework for understanding life processes; impact of biological information on human affairs.

298 [B] Biological Science Honors 4 (3-3) Open only to students in the Honors College.

301 General Genetics 4 Same as MBioS 301.

372 [M] General Ecology 4 (3-3) Prereq Biol 104, one semester Chem. Relationship of organisms with physical and biotic components of their environment; at the population, community, and ecosystem levels.

401 [T] Plants and People 3 Prereq Biol 102, 104, or Bot 120; completion of one Tier I and three Tier II courses. Relationships between plants and people, especially cultural and economic applications of plants.

430 Methods of Teaching Science 3 (2-3) Prereq T & L 303; 12 hours science. Methods, philosophy, and structure of science; application in teaching middle and secondary school science courses.


452 [M] Cell Biology Laboratory 2 (1-3) or 3 (1-6) Prereq cell biology or physiology. Experiments and techniques in cell biology and physiology.

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.

474 [M] Human Ecology 3 Prereq Biol 104. Biological basis of interdisciplinary human ecology; applicability of ecological principles to Homo sapiens; emergence of humans as the ecological dominant.


491 Physical Therapy Clinical Experience V 1-4 May be repeated for credit; cumulative maximum 20 hours. Prereq Psych 105; Zool 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.

495 Internship in Biology V 2-4 May be repeated for credit; cumulative maximum 8 hours. Prereq major in Biol. By interview only. Experience in work related to specific career interests. S, F grading.

498 [M] 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.

519 Introduction to Population Genetics 3 Prereq MBioS 301. Survey of basic population and quantitative genetics. Cooperative course taught by WSU, open to UI students (For 511/Gen 505).

520 Conservation Genetics 2 Prereq MBioS 301. Genetic studies and approaches relevant to efforts to conserve threatened and endangered populations of organisms.

521 Quantitative Genetics 2 Prereq MBioS 531. Fundamentals of quantitative genetics; evolutionary quantitative genetics.

522 Molecular Population Genetics and Evolution 2 Prereq MBioS 531. Evolutionary change of molecular sequences; genetic distance and phylogeny; genomic evolution.

530 Statistical Ecology 4 (2-6) Prereq introductory statistics course. Collection and interpretation of ecological data according to biometrical procedures.

531 Wildlife Ecology 4 (3-3) Same as NATS 531.

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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bot 120</td>
<td>[B] Introduction to Botany</td>
<td>4 (3-3)</td>
<td>A survey of the plant kingdom; structure and function of vascular plants.</td>
</tr>
<tr>
<td>318</td>
<td>Introductory Plant Physiology</td>
<td>3 Preq Biol 104 or Bot 120; organic chemistry or c/&gt;. Introductory plant physiology; lecture portion of Bot 320.</td>
<td></td>
</tr>
<tr>
<td>319</td>
<td>Introductory Plant Physiology Laboratory</td>
<td>1 (0-3) Preq Biol 104 or Bot 120; organic chemistry or c/. Introductory plant physiology laboratory; lab portion of Bot 120.</td>
<td></td>
</tr>
<tr>
<td>320</td>
<td>Introductory Plant Physiology 4</td>
<td>1 (3-3) Preq Biol 104 or Bot 120; org chem or c/. Water relations, mineral nutrition, photosynthesis, respiration, and growth of plants.</td>
<td></td>
</tr>
<tr>
<td>325</td>
<td>Plant Biotechnology</td>
<td>3 Preq Bot 120, MBioS 301. Introduction to the genetic engineering of plants.</td>
<td></td>
</tr>
<tr>
<td>332</td>
<td>Systematic Botany</td>
<td>4 (2-6) Preq Biol 102, 104 or c/, or Bot 120. Identification and classification of vascular plants with emphasis on the local flora.</td>
<td></td>
</tr>
<tr>
<td>405</td>
<td>Principles of Organic Evolution</td>
<td>3 Same as Zool 405. Credit not granted for both Bot 405 and 505.</td>
<td></td>
</tr>
<tr>
<td>406</td>
<td>Microtechnique</td>
<td>4 (2-6) By interview only. Modern methods for preparation of biological specimens for microscopy; paraffin and resin embedding; microtomy, anatomical, cytological and histological techniques. Credit not granted for both Bot 406 and 506.</td>
<td></td>
</tr>
<tr>
<td>410</td>
<td>Plant Anatomy</td>
<td>4 (2-6) Preq Bot 120. Developmental anatomy and morphology of vascular plants; economic forms. Credit not granted for both Bot 410 and 510.</td>
<td></td>
</tr>
<tr>
<td>417</td>
<td>Stress Physiology of Plants</td>
<td>3 Rec Bot 320. Temperature, light, humidity, and water effects on physiological processes; mechanic understanding of stress. Credit not granted for both Bot 417 and 517.</td>
<td></td>
</tr>
<tr>
<td>429</td>
<td>General Plant Pathology</td>
<td>3 Same as PI P 429.</td>
<td></td>
</tr>
<tr>
<td>430</td>
<td>Principles of Plant Systematics</td>
<td>3 Preq Bot 332. Systematic theory: history and current views; approaches to phylogeny reconstruction and classification. Credit not granted for both Bot 430 and 530.</td>
<td></td>
</tr>
<tr>
<td>441</td>
<td>Agrostology</td>
<td>3 Preq Bot 332. Classification, distribution, and structures of grasses with emphasis at the generic level. Field trips required. Cooperative course taught by UI (Bot 441), open to WSU students.</td>
<td></td>
</tr>
<tr>
<td>448</td>
<td>Evolutionary Ecology of Populations</td>
<td>3 Same as Zool 448. Credit not granted for both Bot 448 and 548.</td>
<td></td>
</tr>
<tr>
<td>460</td>
<td>Plant Ecophysiology</td>
<td>3 Preq Biol 372; Bot 320. Relationships of biotic and abiotic environment to plant distribution and evolution through study of physiological processes. Credit not granted for both Bot 460 and 560.</td>
<td></td>
</tr>
<tr>
<td>462</td>
<td>Community Ecology</td>
<td>3 Preq Biol 104. Assembly, essential properties, levels of interactions, succession, and stability of natural communities; emphasizes an experimental approach to community investigation. Credit not granted for both Bot 462 and 562.</td>
<td></td>
</tr>
<tr>
<td>463</td>
<td>[M] Field Ecology 2</td>
<td>2 (0-6) Preq Bot 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 Bot 463 and 563. Cooperative course taught by WSU, open to UI students (Bot 537).</td>
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</tbody>
</table>

**Electron Microscopy**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E Mic</td>
<td>Microtechnique</td>
<td>4 (2-6) Same as Bot 406. Credit not granted for both E Mic 406 and 506.</td>
<td></td>
</tr>
<tr>
<td>504</td>
<td>Electron Microscopy Laboratory 4</td>
<td>(2-6) Same as Bot 506. Credit not granted for both E Mic 406 and 506.</td>
<td></td>
</tr>
</tbody>
</table>

**Zoology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zool 135</td>
<td>[B] Animal Natural History</td>
<td>3 Identification, life history, habitat relations, ecology, behavior, and conservation of animals commonly found in the Pacific Northwest.</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>(Q) Evolution</td>
<td>3 Basic principles and implications of Darwinian evolution.</td>
<td></td>
</tr>
<tr>
<td>224</td>
<td>Adaptive Strategies of Animals</td>
<td>3 Preq biology course. Adaptive functions of animal structural designs, systemic processes and sensory mechanisms; means of accommodating the physical environment; feeding and antipredator tactics.</td>
<td></td>
</tr>
<tr>
<td>225</td>
<td>General Zoology Laboratory</td>
<td>1 (0-3) Invertebrate and vertebrate animals; structural features, adaptation, diversity and systematic relationships.</td>
<td></td>
</tr>
<tr>
<td>251</td>
<td>Introductory Human Physiology</td>
<td>4 (3-3) Rec one semester Chem. Basic physiological processes in humans from the cellular to the organismal level.</td>
<td></td>
</tr>
<tr>
<td>314</td>
<td>Fish Ecology</td>
<td>3 Preq Biol 103, 104. 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.</td>
<td></td>
</tr>
<tr>
<td>315</td>
<td>Gross and Microanatomy</td>
<td>4 (3-3) Preq one semester Biol. Gross and microscopic anatomy of the human body.</td>
<td></td>
</tr>
<tr>
<td>316</td>
<td>Human Embryology</td>
<td>3 Rec Zool 315. Basic aspects of human development with emphasis on congenital defects.</td>
<td></td>
</tr>
</tbody>
</table>
322 Invertebrate Biology 4 (3-3) Prereq Biol 104. Systematics, development and evolution of the invertebrate phyla.

324 Comparative Vertebrate Anatomy 4 (2-6) Prereq Biol 104. Evolution of vertebrates and their organ systems; correlation of structural and functional variations with function.


331 Current Debates on the Environment 1 Prereq Biol 104. Discussion of contentious and controversial environmental issues from biological, social, economic and political perspectives.

350 Comparative Physiology 4 (3-3) Prereq Biol 104. Analysis of systems and integrative physiology with an emphasis on evolutionary adaptation among mammalian and non-mammalian vertebrates.

382 Cell Physiology 3 Prereq Biol 104, organic chem; Rec c/ in Zool 452. Function and control at the cell-tissue level.

383 Mammalian Physiology 4 (3-3) Prereq Biol 104; Rec c/ in organic chemistry. Function and control at the organ-organisim level with emphasis on mammals, including humans.

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.

395 Seminar II 1 May be repeated for credit; cumulative maximum 4 hours. Training in abstracting and reporting recent and classical research in zoology.

405 Principles of Organic Evolution 3 Prereq MBioS 301. The evolutionary processes that influence adaptation, population differentiation, and speciation in organisms. Credit not granted for both Zool 405 and 505.

407 [T,B] Biology of Women 3 Prereq Biol 102, 103, or permission; completion of one Tier I and two Tier II courses. Biological basis of human function, role of medical technology in health care of women, impact of social and cultural perspectives of female role.

410 Marine Ecology 3 Prereq 6 hours of physical and/or biological science. Marine environments: their ecology, role in human development, and hazards to their well being.

411 Limnology 4 Prereq general ecology. Physical, chemical, and biological features of lakes and streams. Field trips required. Cooperative course taught by UI (Fish 415), open to WSU students.

412 Biology and Management of Fishes 3 (2-3) Prereq Biol 104. Evolution, identification, life history, and management of important fish species.

416 Principles of Fisheries Management 3 (3-3) Same as NATRs 416.

417 [M] Parasitology 4 (3-3) Prereq biology course. Types of associations, host-parasite interactions, evolution of parasites; examination of parasitic protozoa and helminths.

421 Vertebrate Histology and Organography 4 (2-6) Prereq Biol 103 or Zool 251. Microscopic anatomy of tissues and structures of major mammalian organs. Cooperative course taught by UI (Zool 427), open to WSU students.


443 Insect Ecology 3 (2-3) Same as Entom 443.


451 Comparative Vertebrate Reproduction 3 Prereq Biol 104. Physiology of major events in reproductive cycles of vertebrates, emphasizing mammals. Credit not granted for both Zool 451 and 551. Cooperative course taught by UI (Zool 411), open to WSU students.

460 Environmental Physiology 3 Prereq Zool 350 or 353. Individual and evolutionary adaptations to changing environments with emphasis on recent literature. Credit not granted for both Zool 460 and 560.

480 [M] Writing in Biology 2 Discussion and practice in relating thinking and writing; popular and professional communication in biology.

486 Marine Invertebrate Communities 1 (0-3) Prereq Biol 104. One-week field trip to Shannon Point Laboratory to gain first-hand experience with several marine habitats. Cooperative course taught jointly by WSU and UI (Zool 486).

490 Topics in Zoology V 1-3 May be repeated for credit; cumulative maximum 6 hours.


497 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Academic traineeship in laboratory teaching and tutoring.

498 Career Experience Internship V 1-4 May be repeated for credit; cumulative maximum 4 hours. By interview only. Experience in work related to specific career area. S, F grading.

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

505 Principles of Organic Evolution 3 Graduate-level counterpart of Zool 405; additional requirements. Credit not granted for both Zool 405 and 505.

506 Generation, Degeneration, Regeneration in the Nervous System 2 Plasticity and specificity of neural connections in invertebrates and vertebrates. Cooperative course taught by UI (Zool 505), open to WSU students.

511 Principles of Systematic Biology 3 (2-3) Prereq Biol 103, 104; 10 additional hours Zool. Principles, methods, and literature of systematic biology; speciation mechanisms; concepts and problems of species and higher taxa; codes of nomenclature.

512 Aquatic Pollution Ecology 3 (2-2) Prereq Zool 411 or permission of department. Principles and working examples of the ecology of polluted aquatic stream and lake habitats. Two one-day and one four-day field trips. Cooperative course taught by UI (Fish 512), open to WSU students.

513 Advanced Fishery Management 3 Compensation as a phenomenon basic to exploitation; yield in numbers and weight; models of yield; stock recruitment functions; economic yield; application of theory of physical and economic yield to empirical examples in commercial and sport exploitation. Field trip required. Cooperative course taught by UI (Fish 510), open to WSU students.

515 Fish Physiology 4 By interview only. Principles and methods used to study vital organs, organ systems, growth, and reproduction of fishes; emphasis on osmoregulation, metabolism, endocrinology, and respiration. Cooperative course taught by UI (Fish 511), open to WSU students.

516 Fish Genetics 2 Prereq MBioS 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).

517 Fish Behavior 3 Causes, mechanisms, and functions or fish behavior, including reproduction, communication, schooling, feeding, migration, and orientation. Cooperative course taught by UI (Fish 520), open to WSU students.

526 Population Analysis 1 Same as NATRS 526.

529 Principles of Population Dynamics 1 Same as NATRS 529.

530 General and Comparative Neurophysiology 4 Same as Neuro 530.

535 Biogeography 2 Prereq 300-400 level course at organismal level. Principles underlying patterns of plant and animal distribution in space and time.

538 [M] Animal Behavior 3 (2-3) Graduate-level counterpart of Zool 438; additional requirements. Credit not granted for both Zool 438 and 538.

543 Predator-Prey Dynamics 1 Same as Entom 543.

548 Evolutionary Ecology 3 Rec Biol 372; Zool 405. Evolutionary dynamics of natural populations and the co-evolution of species. Cooperative course taught by WSU, open to UI students (WLF 548).

551 Comparative Vertebrate Reproduction 3 Graduate-level counterpart of Zool 451; additional requirements. Credit not granted for both Zool 451 and 551. Cooperative course taught by UI (Zool 511), open to WSU students.

552 Comparative Physiology 3 Prereq general physiology course. Adaptations of excretion, respiration, circulation, and metabolism in vertebrate and invertebrate animals.

555 General and Cellular Physiology 4 (3-3) Same as V Ph 555.

557 Advanced Mammalian Physiology 4 Same as V Ph 557.

558 Molecular and Cellular Reproduction 3 (2-2) Same as GenCB 558.

560 Environmental Physiology 3 Prereq Zool 350; or Zool 353. Graduate-level counterpart of Zool 460; additional requirements. Credit not granted for both Zool 460 and 560. Cooperative course taught by WSU, open to UI students (WLF 560).

583 Physiological Interactions in Predator-Prey Relations 1 Same as Entom 583.

589 Advanced Topics in Zoology V 1-3 May be repeated for credit; cumulative maximum 5 hours. Recent advances in zoology.

590 Advanced Topics in Zoology V 1-3 May be repeated for credit; cumulative maximum 5 hours. Recent advances in zoology.

591 Topics in Ecology and Evolution V 1-3 May be repeated for credit; cumulative maximum 6 hours. Current topics in ecology, population, biology, evolution, behavior, systematics, and biogeography.

592 Advanced Topics in Cell Biology V 1-3 May be repeated for credit; cumulative maximum 7 hours. Current research in cell structure and function. Cooperative course taught by WSU, open to UI students (Genet/PlSc 592).

593 Seminar I 1 May be repeated for credit. Literature and problems.

594 Advanced Topics on Vertebrate Form and Function V 1-3 May be repeated for credit. Analysis of animal structure and function emphasizing the evolution of complex systems; constructional morphology; ecomorphology; phylogenetics; heterochrony; size and shape.

595 Seminar II 1 May be repeated for credit; cumulative maximum 8 hours. Literature and problems.

597 Teaching Practicum V 1-4 May be repeated for credit; cumulative maximum 4 hours. Zoology laboratory teaching internship. S, F grading.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Biological Systems Engineering

Professor and Department Chair, D. C. Davis; Professors, G. V. Barbosa-Cáravos, K. B. Campbell, G. M. Hyde, L. G. James, F. Pierce, C. O. Stockle; Associate Professors, S. Chen, M. D. Kleene, M. J. Pilits, M. K. Swan, W. B. Symons, J. Tang; Assistant Professors, B. G. Leib, D. C. Lin, A. N. Vasaduda, J. Q. Wu; Instructor, J. E. Durfey; Emeriti Faculty, D. L. Bassett, J. G. Cavanarca, J. E. George, R. E. Hermanson, L. G. King, C. A. Pettibone, J. B. Simpson, H. Waelti.

The Department of Biological Systems Engineering offers three Bachelor of Science degrees:

• Biological Systems Engineering
• Agricultural Technology and Management
• Agriculture (majors in Agricultural Education, Agricultural Communications, General Agriculture, and Agriculture extended degree)

For complete information about all departmental programs, please see our Web page at www.bsysc.wsui.edu or www.agri.wsui.edu.

BIOLOGICAL SYSTEMS ENGINEERING

Engineering and Biology. Biological Systems Engineering is an emerging field of engineering study that addresses the interaction of humans, plants, micro-organisms and biologically-produced materials in our world. National leaders have identified biology and biotechnology as crucial for the next generation of technological advances. Biological Systems Engineers solve problems facing the environment, our food supply, human and animal health, and all types of living organisms. They design processes and devices that meet specific needs while making environmentally sound use of our biological resources.

Educational Objectives. The educational objective of the BS in Biological Systems Engineering is to prepare graduates for engineering practice or for advance study in fields at the interface between biology and engineering (e.g., Food Engineering, Environmental Engineering, Biomedical Engineering). The program attracts exceptionally well-qualified students and prepares graduates through close interactions with other students and faculty. This curriculum is unique in that students can satisfy pre-veterinary medicine and pre-medical requirements while earning an engineering baccalaureate degree.

Design Throughout. Students receive an early introduction to Biological Systems Engineering, including design, and continue to expand that understanding throughout the four years of study. Students gain computer skills from the first semester and build capabilities for biological systems analysis in each subsequent year. The BSysE 110, 115, 210, 215, 310, 410 and 411 course sequence provides a central core in analysis and design that is coupled to engineering, biology, chemistry, physics, communications, societal awareness and professional ethics.

Food Engineering Emphasis. The Food Engineering emphasis prepares students to work as engineers in food storage, preparation and distribution industries. In addition to the core biology and engineering courses, students receive additional biological training (microbiology, food safety, biochemistry) and additional engineering training (preservation and processing of foods, design of food processing operations). Graduates are prepared to work in the food industry or to enter graduate programs in Food Engineering.

Bioengineering Emphasis. The bioengineering emphasis prepares students to work as engineers in the medical or animal care industries. In addition to the core biology and engineering courses, students can complete chemistry and biology requirements for admission to medical and veterinary programs. They receive additional engineering training in the modeling of neuro-muscular systems in humans and animals. Graduates are prepared to work in medical and related industries, to apply to medical or veterinary professional programs, or to enter graduate programs in Bioengineering or Biomedical Engineering.

Water, Soil and Environmental Engineering Emphasis. The Environmental Engineering emphasis prepares students to work as engineers in areas of watershed restoration, remediation, and land use analysis. In addition to the core biology and engineering courses, students receive additional training in microbiology, water and chemical movement through soil and water use by plants. They receive additional engineering training in the monitoring and modeling of large land areas and in the design of biologically-based wastewater treatment systems. Graduates are prepared to work for environmental engineering consulting firms or for government agencies such as EPA, or to enter graduate programs in Environmental Engineering.

Quality Assurance. The Bachelor of Science degree in Biological Systems Engineering is accredited by the Accreditation Board for Engineering and Technology. Enrollment in the 300-400 level curriculum is restricted to certified majors. Requirements for certification are available from the Department.

Graduate Programs. The Department of Biological Systems Engineering also participates in the College of Engineering and Architecture's programs leading to the degrees of Master of Science in Engineering and Doctor of Philosophy in Engineering Science.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

The Bachelor of Science degree in Biological Systems Engineering requires a minimum of 128 semester hours. At least 45 of the total hours required for the bachelor's degree in this program must be 300-400 level courses.

BIOLOGICAL SYSTEMS ENGINEERING DEGREE PROGRAM (128 hours) **FYDA**

Freshman Year

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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 171 [N] (GER)</td>
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Second Semester

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<td>BSysE 115</td>
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<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Math 172</td>
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Sophomore Year

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<tr>
<td>BSysE 210</td>
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</tr>
<tr>
<td>C E 211</td>
<td>3</td>
</tr>
<tr>
<td>Cpt S 203</td>
<td>2</td>
</tr>
<tr>
<td>Math 273</td>
<td>2</td>
</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
<td>4</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>BSysE 215</td>
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</tr>
<tr>
<td>Chem 240, or 340 and 341</td>
<td>4 or 5</td>
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<tr>
<td>Econ 101 [S] or 102 [S] (GER)</td>
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</tr>
<tr>
<td>M E 212</td>
<td>3</td>
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<tr>
<td>Math 315</td>
<td>3</td>
</tr>
<tr>
<td>Technical Biological Science Elective</td>
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</tbody>
</table>
Department of Biological Systems Engineering

Junior Year

First Semester
- BSysE 320 4
- Ch E 301 or M E 301 3
- Ch E 310 3
- E E 304 2
- Phys 202 [P] (GER) 4
- Complete Writing Portfolio 4

Second Semester
- BSysE 310 3
- C E 315 or Ch E 332 3
- Engineering Design Elective 3
- MBioS 303 or SoilS 421 3
- Technical Biological Science Elective 3

Senior Year

First Semester
- Arts & Humanities [H,G] (GER) 3
- BSysE 410 3
- BSysE 441 3
- Engineering Design Elective 3
- Technical Biological Science Elective 3

Second Semester
- BSysE 411 3
- Engl 402 [W] (GER) 3
- Engineering Design Elective 3
- Intercultural [L,G,K] (GER) 3
- Tier III Humanities or Social Sciences Course (GER) 3

Transfer Students

Students who plan to transfer to biological systems engineering at Washington State University from other institutions should coordinate their programs early with the department to select courses that will be applicable to degree requirements. A strong preparation in mathematics, physics, biology, and chemistry and proper selection of electives will minimize the time required to complete bachelor's degree requirements.

Description of Courses

Biological Systems Engineering

BSysE

110 Engineering Living Systems 2 (3-3) Engineering design of living systems; social factors influencing design; computer-based engineering tools.

115 Computation and Visualization for Engineers 1 (0-3) Computer tools for computation and visualization in engineering; use of software for CAD, project management, and engineering computation.

210 Innovation in Design 2 Same as M E 120.

210 Biological Systems Analysis and Design 3 (2-3) Prereq Biol 103, Chem 105; Cpt S 153 or 203. Application of computer-assisted tools for the engineering analysis and design of biological systems.

215 Professional Preparation for Biological Systems Engineering 1 May be repeated for credit; cumulative maximum 3 hours. Preparation for professional, ethical, and social issues and for career development in biological engineering profession. $, F grading.

310 Biological Dynamics for System Design 4 (3-3) Prereq BSysE 210, M E 212. Understanding and application of dynamic computer simulation models for the analysis and design of biological systems. Cooperative course taught jointly by WSU and UI (BSysE 310).

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 (BSysE 386).

339 Perspectives in Biomedical Engineering 1 May be repeated for credit; cumulative maximum 3 hours. Prereq BSysE 210 or C/. Seminar on current issues in biomedical engineering; career options in biomedical engineering. $, F grading.

351 Environmental Hydrology 3 Prereq Math 140, 171, 202, or 206. Hydrologic cycle; commonly used methods for analysis of components of the cycle; importance of hydrology to the environment. Cooperative course taught by WSU, open to UI students (AgE 353). Credit not granted for both BSysE 351 and 353.

352 Introduction to Soil and Water Engineering 3 (2-3) Prereq BSysE 351, C E 315, SoilS 201. Fundamentals of soil and water engineering; agricultural hydrology and hydraulics, erosion control, and water quality. Cooperative course taught by UI (AgE 352), open to WSU students.

353 Hydrology 3 Prereq one semester of calculus. Analysis of precipitation and runoff events; principles of climatology, evaporation, infiltration, and snowmelt. Credit not granted for both BSysE 351 and 353. Cooperative course taught by UI (AgE 352), open to WSU students.

362 Agricultural Power and Machinery 3 (2-3) Prereq M E 301 or C/. Performance, operation, and testing of agricultural power units and machinery; functional requirements, force analysis, power transmission, safety, and economics. Cooperative course taught by UI (AgE 372), open to WSU students.

380 Electric Power and Controls 3 (2-3) Prereq E E 304. Design and on-farm use of electric equipment and systems; design of electronic control systems for agricultural applications. Cooperative course taught by UI (AgE 462), open to WSU students.

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 (1-6) Prereq BSysE 311 or C/. Detailed design of a biological engineering-related process, machine, structure, or system.

420 Capstone Engineering Design 3 (1-6) Same as M E 420.

430 Physiological Dynamics and Control 3 (2-3) Prereq BSysE 310; Ch E 441; E E 489 or M E 481; Zool 353. Interactions between cells, organs, and whole organism physiological and engineering design structures, especially in prostheses.

441 Process Control 3 Same as Ch E 441.

452 Eco-environmental Engineering Design 3 (2-3) Prereq junior standing. Engineering design to monitor, evaluate, and minimize non-point pollution from agriculture, environmentally acceptable disposal of wastes; bioremediation. Cooperative course taught jointly by WSU and UI (BSysE 452).

453 Irrigation and Drainage System Design 3 (2-3) Prereq junior standing. Crop water requirements, irrigation scheduling and water management, selection and design of irrigation systems; pump selection. Cooperative course taught by UI (AgE 456), open to WSU students.

455 Natural Systems for Wastewater Treatment 3 Prereq senior standing. Principles and design procedures of natural systems for wastewater treatment for agricultural and non-agricultural applications.

475 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. Cooperative course taught by WSU, open to UI students (BSysE 457).

461 Agricultural Processing and Environment 3 Prereq BSysE 210, C E 315, M E 301 or C/. Materials handling and processing, psychrometrics, heat and mass transfer, pumps and fans, refrigeration, agricultural environments, waste management. Cooperative course taught jointly by WSU and UI (AgE 461).

462 Systems in Integrated Crop Management 3 (2-3) Same as Entom 462.

472 Design of Agricultural Structures 3 (2-3) Prereq C E 213. Design of timber, steel, and reinforced concrete members and connections for agricultural structures. Cooperative course taught by UI (AgE 449), open to WSU students.

474 Fluid Power and Control Systems 3 (2-3) Circuit components; circuit design and testing; agricultural applications. Credit not granted for both BSysE 474 and 574. Cooperative course taught by UI (AgE 474), open to WSU students.

482 Food Process Engineering Design 3 Prereq BSysE 481 or Ch E 330. Design of food processing systems; design and simulation of pasteurization and heat sterilization processes in foods. Credit not granted for both BSysE 482 and 582. Cooperative course taught by WSU, open to UI students (AgE and FST 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 (BSysE 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.

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 (BSysE 486).

487 Food Plant Design 3 Prereq BSysE 482. Preliminary design of food processing plants, including engineering principles, equipment selection, economic analysis, and regulatory aspects. Cooperative course taught by WSU, open to UI students (BSysE 487).
### Agriculture Technology and Management

For complete information, visit www.agtm.wsu.edu. The Agricultural Technology and Management degree program is located in the Biological Systems Engineering Department and prepares students for the application of technology to operations or management in agriculture. The areas of application are: precision agriculture, 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 is designed to be flexible and responsive to industry needs, with an emphasis on developing skills in problem-solving, decision-making, and leadership.

Agricultural Technology and Management provides students with the knowledge and skills necessary to succeed in the agricultural industry, including:

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### Agriculture

The Agriculture options within the Department of Biological Systems Engineering offers flexible courses of study that allows students to prepare themselves for a broad range of careers in agriculture while earning a Bachelor of Science in Agriculture or a Bachelor of Science in Agricultural Technology and Management degrees:

- Agricultural Technology and Management, BS (Ag, Agriculture, BS (with majors in the following))
  - Agricultural Education
  - Agricultural Communications
  - General Agriculture
  - Agriculture, extended degree

In each major, emphasis is placed on gaining a solid background in the agricultural sciences while studying specific subjects that prepare graduates for their chosen fields.

For complete information about all departmental programs, please see our Web page at www.agri.wsu.edu.
Your AgTM career will involve you in a wide range of activities. For example, you may recommend machines, processes, and management practices for conserving water, minimizing soil erosion and pollution, maximizing energy use efficiency, improving the performance of planting, cultivation, and harvesting equipment, and improving worker safety.

You may select or modify equipment and facilities for the post-harvest handling, storage, and processing of food products to provide consumers with quality products at a competitive price. Or you may use electronic sensors and computers to control equipment and regulate processes for increased energy efficiency and improved performance. You may also have opportunities for work in developing nations.

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 department also offers a minor in Agricultural Technology and Management.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

The Bachelor of Science degree in Agricultural Technology and Management requires a minimum of 122 credit hours for graduation. Of these, at least 40 hours must be courses numbered 300-400-level Ag or Business Elective for graduation. Of these, at least 40 hours must be courses numbered 300-400-level Ag or Business Elective for graduation.

Agricultural Technology and Management Degree Program (122 Hours)

Freshman Year

First Semester

<table>
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<tr>
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<tr>
<td>Ag or AgTM Elective</td>
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<td>Biol 104 [B] or Bot 120 [B] (GER)</td>
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<tr>
<td>Communication [C,W] (GER)</td>
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Junior Year

First Semester

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<td>300-400-level Ag or Business Elective1</td>
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<tr>
<td>AgTM 312</td>
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<td>AgTM 331</td>
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<td>AgTM 451</td>
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<td>Soils 201</td>
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Second Semester

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<th>Course</th>
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<td>Complete Writing Portfolio</td>
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Senior Year

First Semester

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<td>300-400-level Ag Ec or Business Elective2</td>
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<tr>
<td>300-400-level Ag or Business Elective1</td>
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<td>AgTM 315</td>
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<td>Intercultural [I,G,K] (GER)</td>
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Second Semester

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<td>300-400-level Ag or Business Elective1</td>
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<td>300-400-level AgTM Elective</td>
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<td>AgEC 433 [M]</td>
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<td>Tier III Course (GER)</td>
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Students must complete one of the following sequences: AgEc 340/440, AgEc 360/460, AgEc (350 or 370)/450 [M] or two 300-level business courses chosen from the required list for business minors.

1 During the junior or senior year, students must take one more writing in the major course [M] in addition to AgTM 433 [M], for a total of two [M] courses.

Agricultural Technology and Management

Description of Courses

Agricultural Technology and Management

**AgTM 110 Introduction to Agricultural Technology and Management** 1 For freshmen. Basic skills for analyzing, solving, and presenting problems in modern agriculture.

**201 Metal Fabrication** 3 (1-6) Theory, applications, and practices of welding, machining, and associated techniques in fabricating with metals.

**203 Agricultural Structures** 3 (2-3) Principles and practices in farm building construction; foundations, frames, materials, tools and plans; experience with tools and materials. Cooperative course taught by WSU, open to UI students (ASM 203). In addition, students must take one more writing in the major course [M] in addition to AgTM 433 [M], for a total of two [M] courses.

**210 Small Engines** 2 (1-3) Repair, adjustment, protective maintenance, operation, and safety of small gasoline engines. Cooperative course taught by UI (ASM 210), open to WSU students.

**308 Agricultural Precision Systems** 3 (2-3) Prereq Junior or senior or instructor approval. 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 308).

**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.

**310 Agricultural Power Units** 1 Prereq Math GER. Principles of thermodynamics, engine cycle, timing, and operation, cooling, air conditioning, measurement, and efficiency of energy conversion. Lab work included.

**311 Mobile Electrical Systems** 1 Prereq Math GER. Principles of electrical, charging, ignition, starting and fuel delivery systems, and efficiency evaluation. Lab work included.

**312 Agricultural Precision Systems** 1 (0-3) Prereq Math GER. Principles of power coupling, transmission (manual and hydraulic), braking, steering, linkage, suspension systems, differentials, and hydraulic systems. Cooperative course taught by WSU, open to UI students (ASM 312).

**315 Irrigation Systems and Water Management** 3 (2-3) Prereq Math 103; 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).

**331 Electrical Power Circuits** 1 Prereq Math GER, sophomore standing. Methods of selecting and installing electrical power circuits in agricultural operations; emphasis on light frame construction. Lab work included. Cooperative course taught jointly by WSU and UI (ASM 331).

**332 Irrigation and Control Systems** 1 Prereq Math GER, sophomore standing. Planning, installation, and maintenance of electric motors and control devices used in agricultural operations. Lab work included.

**333 Micro Power Systems** 1 Prereq Math GER, sophomore standing. Methods of selecting, installing, and operating micro power systems in agricultural environments. Lab work included.

**346 Landscape Irrigation Systems** 3 (2-3) System component selection; layout, installation, operation of irrigation systems for turf and landscape plantings; basic system hydraulics; efficient water use.

**402 Methods, Materials, and Machines for Teaching Ag Mechanics** 3 (1-6) Prereq AgTM 201, 203; 9 hours in Educ. Development of shop programs in project planning, demonstrations, and skills performance; safety and management of materials, tools, and machines.

**403 Laboratory Projects Teaching Techniques** 1 (1-3) May be repeated for credit; cumulative maximum 2 hours. Teaching techniques for laboratory projects in agricultural mechanics.

**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.

**409 Agricultural Tractors and Power Units** 4 (3-3) Selection, operation, adjustment, service, and testing; fuels and combustion; fuel lubrication, cooling, and electrical systems; tractor power trains, hitching, traction, and safety. Credit not granted for both AgTM 312 and 409. Cooperative course taught by UI (ASM 409), open to WSU students.
431 Human and Machinery Risk Management 1 Prereq junior or senior or instructor approval. History and current status of farm worker injury prevention programs in the U.S., including worker's compensation insurance. Lab work included. Cooperative course taught by WSU, open to UI students (ASM 413).

434 Safety Compliance Issues in Farm Worker Safety 1 Prereq junior/senior standing or instructor approval. Study of state regulations governing farm worker health and safety. Lab work included.

435 Hazard Abatement Strategies in Machinery Systems 1 Prereq junior/senior standing or instructor approval. Study of the methods to reduce injury to workers in the agricultural industry. Lab work included.

436 Fluid Power Systems 3 (3-3) 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).

426 Energy Concepts in Agricultural Structures 3 (2-3) Prereq AgTM 203. Basic concepts of psychrometrics, temperature-moisture relationships, heat transfer, and energy management in agricultural structures. Credit not granted for both AgTM 426 and 526.

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).

434 Agricultural Processing Laboratory 1 (0-3) Rec AgTM 433 or c/. Experiments in heat transfer, fluid flow and dehydoration. Cooperative course taught by WSU, open to UI students (IST 434).

435 Instrumentation for Data Acquisition in Agriculture 3 (2-2) Prereq AgTM 331 or c/. Agricultural applications of instrumentation and measurement principles; the use of microcomputers for data acquisition, data analysis, and control applications. Credit not granted for both AgTM 435 and 535. Cooperative course taught by WSU, open to UI students (ASM 435).

426 Agricultural Technology Design 2 Prereq junior/senior standing, AgTM 305, 405, or instructor approval; c/AgTM 437/S37. Design applications to AgTM methodologies as applied to precision agricultural systems. Group problem solving activities, data analysis utilizing computers, and team design efforts.

437 Agricultural Technology Design Laboratory V 1 (0-3) to 2 (0-6) May be repeated for credit; cumulative maximum 4 hours. Prereq junior/senior standing, AgTM 305, 405, or instructor approval; c/AgTM 436/S36. Design applications to AgTM methodologies as applied to precision agricultural systems. Group problem solving activities, data analysis utilizing computers, and team design efforts.

433 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.

445 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.

448 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 103; S A 468 rec. Aquaculture production system design, species adaptation to aquaculture, management of water flows, oxygen and nutrient consumption, system impacts and economics.

481 Advanced Topics V 1-3 May be repeated for credit; cumulative maximum 8 hours. By view 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 adviser 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.

526 Energy Concepts in Agricultural Structures 3 (2-3) Prereq Grad-level counterpart of AgTM 426; additional requirements. Credit not granted for both AgTM 426 and 526.

535 Instrumentation for Data Acquisition in Agriculture 3 (2-3) Prereq Grad-level counterpart of AgTM 437/S37; additional requirements. Credit not granted for both AgTM 437 and 535. Cooperative course taught by WSU, open to UI students (ASM 435).

536 Agricultural Technology Design 2 Graduate-level counterpart of AgTM 436; additional requirements. Credit not allowed for both AgTM 436 and 526.

537 Agricultural Technology Design Laboratory V 1 (0-3) to 2 (0-6) Graduate-level counterpart of AgTM 437; additional requirements. Credit not allowed for both AgTM 437 and S37.

### Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

**AGRICULTURAL EDUCATION DEGREE PROGRAM (137 HOURS)**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>A 101†</td>
<td>3</td>
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<tr>
<td>Ag Elective</td>
<td>1-3</td>
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<tr>
<td>AgTM 110†</td>
<td>1</td>
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<tr>
<td>Chem 101 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>H D 205 [C] or ComSt 102 [C] (GER)</td>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AgTM 201†</td>
<td>3</td>
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<tr>
<td>Chem 102 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Stat 212 [N] (GER)</td>
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<tr>
<th>Sophomore Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 201 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>CropS 101†</td>
<td>3</td>
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<tr>
<td>Engl 201 [W] (GER)</td>
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<tr>
<td>Soils 201†</td>
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<td>T &amp; L 300 (certify, College of Education)</td>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Biol 104 [B] (GER)</td>
<td>4</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Hort 201†</td>
<td>4</td>
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<tr>
<td>T &amp; L 301</td>
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<tr>
<td>T &amp; L 317</td>
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<tr>
<th>Junior Year</th>
<th>Hours</th>
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<tr>
<td>First Semester</td>
<td>6</td>
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<tr>
<td>300-400-level Ag Electives</td>
<td>6</td>
</tr>
<tr>
<td>Ag Ec 340/350†</td>
<td>3</td>
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For complete information, visit www.aged.wsu.edu.

The agricultural education major prepares students to teach high school agriculture. A minimum of 46 hours in agricultural sciences is required for graduation. This course of study leads to the degree of Bachelor of Science in Agriculture. The program includes minimum requirements for initial teacher certification. At least 40 of the total hours required for this degree must be in 300-400-level courses, with at least 20 hours in agriculture. 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, 41 hours in professional education. The program requires a minimum of 124 semester hours for graduation. Students must take all core agriculture courses plus 15 additional credits in agriculture from the College of Agriculture and Home Economics. 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 Agriculture and Home Economics. (Student teaching requires Ag Ed 407 and T & L 415.)
Ag Ed 471
Hort Elective¹
T & L 302
T & L 303
Certify with College of Education
Complete Writing Portfolio

Second Semester

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<th>Hours</th>
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<tr>
<td>300-400-level Ag Electives</td>
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<tr>
<td>EdPsy 402</td>
</tr>
<tr>
<td>Intercultural [L, G, K] (GER)</td>
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<tr>
<td>T &amp; L 328 [M]</td>
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<tr>
<td>T &amp; L 445</td>
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<tr>
<td>Tier III Course (GER)</td>
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Third Year

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<th>Hours</th>
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<tbody>
<tr>
<td>17 additional credits in technical agriculture from the College of Agriculture and Home Economics. (Student teaching requires Ag Ed 407 and T &amp; L 415.)</td>
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Ag Ed 407
Ed Psy 402
Intercultural [L, G, K] (GER)
T & L 328 [M]
T & L 445
Tier III Course (GER)

Senior Year

First Semester

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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Ag Elective or Gen Genetics</td>
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<tr>
<td>Ag Ed 342</td>
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<td>Ag Ed 440 [M]</td>
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<td>Ag Ed 490</td>
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<tr>
<td>T &amp; L 404</td>
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<tr>
<td>T &amp; L 478</td>
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Second Semester

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<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ed 407</td>
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<tr>
<td>Ag Ed 442</td>
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<tr>
<td>Ag Ed 471</td>
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470 Direct Work Experience V 1-3 May be repeated for credit; cumulative maximum 6 hours. Job analysis and description; weekly work experience reports and analysis coordinated with problems related to the student's employment in an approved occupation.

471 Student Organizations in Agricultural Education 2 Prereq certified College of Education major. Role of FFA in student organizations; role of advisor; principles of leadership; characteristics of successful FFA chapters. Course equivalent to OSU's Ag 421/S21.

477 Agricultural Science in K-12 Classrooms 1 Developing selected agricultural and science curriculum for K-12; special methods, materials and exercises.

490 Advanced Ag Ed School Practicum 2 (0-6) Prereq Ag Ed 345, admission to College of Education. Advanced Ag Ed classroom experience prior to student teaching to provide additional observation, reflection; application of theory and limited teaching responsibilities. S, F grading.

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.

498 Cooperative Education Internship V 2-12 Prereq undergraduate student. Off-campus cooperative education internship with business, industry, or government unit. S, F grading.

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

504 Special Topics in Vocational Education V 1-3 Special topics in agricultural education or agriculture that will provide advanced training for teachers of agriculture.

508 Foundations of Vocational Education 2 Historical, philosophical, social, political and economic factors that influence education in vocational environments.

511 Seminar in Vocational Education 1 or 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.

598 Internship V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 12 hours. Supervised experience in continuing, extension, and/or vocational educational environments.

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

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

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

GENERAL AGRICULTURE DEGREE PROGRAM (121 HOURS)

Freshman Year

First Semester

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<tr>
<th>Hours</th>
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<td>Ag Elective</td>
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<tr>
<td>Ag Requirements¹</td>
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<tr>
<td>Chem 101 [P] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>H D 205 [C] (GER)</td>
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Second Semester

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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Elective</td>
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<tr>
<td>Ag Requirements¹</td>
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<tr>
<td>Biol 103 [B] (GER)</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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Sophomore Year

First Semester

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<th>Hours</th>
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<tr>
<td>Ag Ex 201 [S] (GER)</td>
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<td>Ag Elective</td>
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<tr>
<td>Biol 104 [B] (GER)</td>
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<tr>
<td>Engl 201 [W] (GER)</td>
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<tr>
<td>Math 205 [N] (GER) recommended</td>
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Second Semester

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<th>Hours</th>
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<tr>
<td>Ag Electives</td>
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<td>GenEd 111 [A] (GER)</td>
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Junior Year

First Semester

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<th>Hours</th>
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<tr>
<td>300-400-level Ag Elective</td>
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<tr>
<td>300-400-level Ag Requirements³</td>
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<tr>
<td>Ag Elective</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Second Semester

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<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Ag Elective</td>
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<tr>
<td>300-400-level Ag Requirement [M]</td>
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<tr>
<td>300-400-level Ag Requirements³</td>
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<tr>
<td>Intercultural [I, G, K] (GER)</td>
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For complete information, visit www.byse.wsu.edu/Gen Ag/genag.htm or www.tadda.wsu.edu.

General agriculture is designed for students who wish to prepare for careers requiring broad training in agriculture. A maximum number of electives is permitted to enable the student to emphasize one or two fields, or otherwise to tailor the curriculum to fit particular needs. Students desiring to qualify as conservationists in the Natural Resources Conservation Service should have 12 hours of soils. To qualify as soil scientists, a total of 15 hours in soils is required. Soils 201, 301, 413, 421, and 451 are recommended.
A total of 46 agriculture credits are required. 15 credits must be from one department and 9 credits from another department.

Students electing this major must select one of the six options and complete the requirements of the general agriculture curriculum and earn a minimum of 30 hours in the School of Communication, including any communications courses used to satisfy general agriculture requirements. Those electing this major should make known that decision as early as possible in their academic career.

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

A major in agricultural communications is offered in cooperation with the School of Communication. Students declaring this major must select one of the six options and complete the requirements of the general agriculture curriculum and earn a minimum of 30 hours in the School of Communication, including any communications courses used to satisfy general agriculture requirements. Those electing this major should make known that decision as early as possible in their academic career.

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DEPARTMENT OF FINANCE, INSURANCE, AND REAL ESTATE

Professor and Department Chair, H. Kerr; Professors, Victor L. Lyon/CCEM Distinguished Professor of Real Estate D. Epley, Safeco Distinguished Professor of Risk Management and Insurance G. Lai, Bronir Chair of Investment Management R. Sias; Associate Professors, L. Han, Mutual of Enumclaw/Field Distinguished Professorship in Insurance M. McNamara, H. Turtle, Alvin J. Wolf Professor of Real Estate, M. Woverton; Assistant Professors, V. Armstrong, K. Beller, F. Kerins, D. Whidine.

DEPARTMENT OF MANAGEMENT AND DECISION SCIENCES


DEPARTMENT OF MARKETING

Professor and Department Chair, D. Muehling; Professors, J. Cole, Maughmer Professor of Freedom Philosophy, R. Markin, J. McCullough, D. Stem, P. Tansuhaj, U. Umesh; Associate Professors, P. Henderson, J. Johnson, F. Spangenberg; Assistant Professors, T. Arnold, J. Giese, R. Grewal, James and Diana Huber Chair of Entrepreneurial Studies, J. Rose, D. Sprott.

CENTER FOR ENTREPRENEURIAL STUDIES

Assistant Professor and Director, James and Diana Huber Chair of Entrepreneurial Studies J. Rose; Professor, Maughmer Professor of Freedom Philosophy, R. Markin.

INTERNATIONAL BUSINESS INSTITUTE

Professor and Director J. McCullough; Professor, R. August, P. Tansuhaj; Assistant Professor, James and Diana Huber Chair of Entrepreneurial Studies, J. Rose, P. Wyeth.

The study of business administration involves the understanding and application of knowledge developed in a wide range of interrelated disciplines, such as accounting, finance and banking, human resources/personnel, international business, management information systems, management, marketing, decision sciences, and real estate. Concepts from mathematics, sociology, psychology, anthropology, economics, and other disciplines are integrated in order to provide the individual with both a practical and theoretical understanding of business organization and its functions in our society. The broad education offered by this curriculum permits the student an almost unlimited range of employment opportunities in business, industry, and government.

The curricula leading to degrees in business administration at both the undergraduate and graduate levels are accredited by AACSB - The International Association for Management Education. The accounting programs are also separately accredited by the AICPA. Degrees are offered in the Bachelor of Arts in Business Administration, Master of Accounting, Master of Business Administration, Master of Technology Management, and Doctor of Philosophy. Please refer to page 22 of this catalog for campus specific degree offerings.

The College of Business and Economics, in cooperation with the Division of Humanities and Social Sciences, offers a joint Bachelor of Liberal Arts and a Master of Business Administration (4 & 1) Program. Students selected for this program complete a BA in liberal arts with a business core and receive guaranteed admission into the MBA Program in Business Administration, allowing them to finish the MBA in one year. Admission to the program is highly selective. For further information, students should contact the Director of Graduate Programs in Business.

The International Business Institute (IBI) was established to coordinate international activities in the College of Business and Economics. The IBI draws faculty, staff, and students together to achieve excellence in the internationalization of business education, research, and service. It administers the international business curriculum and advises all international business majors. The IBI aims at encouraging the business and economics faculty, staff, and students to be involved in interesting and exciting activities in the global business of the new millennium.

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.

Certification and Graduation Requirements

Pre-Business (preBA) Major Certification Requirements. Certification requirements for the pre-business major include completion of 24 semester hours, 6 hours of which must be in Acctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Mgt 101, or MIS 250; a 2.0 cumulative g.p.a. and a 2.0 business g.p.a.

Business Administration (BA) Major Certification Requirements. To be eligible for certification as a business administration major, a student must have earned at least 60 semester hours of credit, including all of the following courses: Acctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Engl 101, Math 201, 202, MIS 250, and meet the current college/departmental g.p.a. requirements of a cumulative g.p.a. of at least 2.5. All students are eligible to petition for the consideration of alternative criteria. A 2.0 cumulative business g.p.a. 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 and Economics.

All students majoring in business administration must see their adviser and have a degree audit upon completion of 45 hours of credit. By the completion of 60 hours of credit, all students must have completed English, Math and 100-200-level CBE core courses. These required courses are Acctg 230, 231; B Law 210; Dec S 215; Econ 101, 102; Engl 101; Math 201; Math 202; MIS 250. Enrollment in 300-level CBE business courses is restricted to those students who have met these requirements and have certified as BA or HA majors.

All students majoring in business administration must complete 50% of their course work outside of the College of Business and Economics. Nine hours of economics and 4 hours of Dec S 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 courses must be taken in residence at WSU; and 3) The last 30 hours of course work must be taken at WSU.

The chair of the department and/or the dean of the college must approve in writing any portion of the 300-400-level credit which is to be satisfied by transfer, correspondence, independent study, or other credit, which does not carry WSU grade points. 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 GEs, 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.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GEs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students must complete Honors Requirements in place of GEs.

For all degree programs, students must complete 53 hours outside of the College of Business and Economics. Enrollment in 300-400-level business courses is restricted to those students who have completed Acctg 230, 231; B Law 210; Dec S 215; Econ 101, 102; Engl 101, Math 201; Math 202; MIS 250 and certified as BA majors.

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.
### Freshman Year

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<th>Hours</th>
<th>Subjects/Departments</th>
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#### Junior Year

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<td>Mktg 360</td>
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#### Senior Year

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### Business Administration Degree Program (120 Hours) FYDA

The business administration major builds on introductory courses to teach students how to apply critical concepts in accounting, finance, management, and marketing to solve business problems. This is an excellent major for students interested in managerial (non-technical) career paths such as human resource management, management, marketing, etc. Students earning the business administration major are also encouraged to earn a minor in their field of interest.

### Business Economics Degree Program (120 Hours) FYDA

Preparation for executive careers in large corporations where a broad understanding of the economy is crucial in decision making; in financial institutions, government agencies, public utilities and transportation companies, with labor unions and law firms; for careers in economic or market research and analysis. The economics field of specialization is also excellent preparation for graduate training in business, economics or law.
Freshman Year

First Semester
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Intercultural [I,G,K] (GER) 3
- Tier I Science [Q] (GER) 3

Second Semester
- Arts & Humanities [H,G] (GER) 3
- Biological Sciences [B] (GER) 3 or 4
- Econ 101 [S] or Econ 102 [S] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 201 3

Sophomore Year

First Semester
- Acctg 230 3
- Blaw 210 3
- Math 202 [N] (GER) 3
- MIS 250 3
- Physical Sciences [P] (GER) 3 or 4

Second Semester
- Acctg 231 3
- Dec S 215 4
- Econ 301 or 302 3
- Oral Com [C] (GER) 3
- Soc of Psych [S,K] (GER) 3

Junior Year

First Semester
- 300-400-level Elective 3
- Econ 311 or 411 3
- Engl 402 [W] or 403 [W] (GER) 3
- Mgt 301 3
- Mktg 360 3
- Complete Writing Portfolio

Second Semester
- Dec S 340 3
- Econ 401 3
- Fin 325 3
- 300-400-level Option Requirements 3

Senior Year

First Semester
- Pol S Elective 3
- 300-400-level Option Requirements 3
- Electives 3

Second Semester
- Mgt 491 or 492 3
- 300-400-level Option Requirements 3
- Tier III Course (GER) 3
- Elective 3

Junior Year

First Semester
- 300-400-level Elective 3
- Engl 402 [W] or 403 [W] (GER) 3
- Fin 325 3
- Mgt 301 3
- Mktg 360 3
- Complete Writing Portfolio

Second Semester
- Dec S 340 3
- 4 of Group A Electives 6

Senior Year

First Semester
- B Law Group A Elective 3
- Engl 302 [W], 402 [W], or 451 3
- Elective 3

Second Semester
- Mgt 491 or 492 3
- Pol S Elective 3
- Tier III Course (GER) 3
- Electives 6

For a total of 7 hours of Biological and Physical Sciences.

B Law Group A Electives consist of: Ag Ec 435; B Law 410, 411, 414 [M], 415 [M], 416 [M]; C E 462; Com 415; Crm 320, 420 [M], 425; Econ 350, 360; ES/RP 335 [M], 444; FSHN 370; H A 311; Phil 360, 470; Pol S 300, 330, 402, 404 [M], 443; Soc 364, three of which must be B Law.

Engl 402 may not be double counted for both the [W] Com GER credit and for this requirement.

Business Law Degree Program (120 Hours) ✔FYDA

Preparation for careers in consulates, embassies and the State Department, in criminal justice administration, court administration, public utility administration, labor union administration, and government agency administration; also private business dealing with the foregoing.

Freshman Year

First Semester
- Arts & Humanities [H, G] (GER) 3
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Tier I Science [Q] (GER) 3

Second Semester
- Biological Sciences [B] (GER) 3 or 4
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Intercultural [I, G, K] (GER) 3
- Math 201 3
- MIS 250 3

Sophomore Year

First Semester
- Acctg 230 3
- GenEd 111 [A] (GER) 3
- Math 202 [N] (GER) 3
- Physical Sciences [P] (GER) 3 or 4
- Elective 3

Second Semester
- Acctg 231 3
- B Law 210 3
- Dec S 215 4
- Oral Com [C] (GER) 3
- Soc of Psych [S,K] (GER) 3

Junior Year

First Semester
- 300-400-level Elective 3
- Econ 311 or 411 3
- Engl 402 [W] or 403 [W] (GER) 3
- Mgt 301 3
- Mktg 360 3
- Complete Writing Portfolio

Second Semester
- Dec S 340 3
- Econ 401 3
- Fin 325 3
- 300-400-level Option Requirements 3

Senior Year

First Semester
- Pol S Elective 3
- 300-400-level Option Requirements 3
- Electives 3

Second Semester
- Mgt 491 or 492 3
- 300-400-level Option Requirements 3
- Tier III Course (GER) 3
- Elective 3

For a total of 7 hours of Biological and Physical Sciences.

Group A electives consist of: Ag Ec 435; B Law 410, 411, 414 [M], 415 [M], 416 [M]; C E 462; Com 415; Crm 320, 420 [M], 425; Econ 350, 360; ES/RP 335 [M], 444; FSHN 370; H A 311; Phil 360, 470; Pol S 300, 330, 402, 404 [M], 443; Soc 364, three of which must be B Law.

Engl 402 may not be double counted for both the [W] Com GER credit and for this requirement.

Decision Science Degree Program (120 Hours) ✔FYDA

Preparation for careers in business or government in the following areas; total quality management, statistical consulting and data analysis, operations planning and management.

Freshman Year

First Semester
- Arts & Humanities [H, G] (GER) 3
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Tier I Science [Q] (GER) 3

Second Semester
- Biological Sciences [B] (GER) 3 or 4
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Intercultural [I, G, K] (GER) 3
- Math 201 3
- MIS 250 3

Sophomore Year

First Semester
- Acctg 230 3
- GenEd 111 [A] (GER) 3
- Math 202 [N] (GER) 3
- Physical Sciences [P] (GER) 3 or 4
- Elective 3

Second Semester
- Acctg 231 3
- B Law 210 3
- Dec S 215 4
- Oral Com [C] (GER) 3
- Soc of Psych [S,K] (GER) 3

Junior Year

First Semester
- 300-400-level Elective 3
- Engl 402 [W] or 403 [W] (GER) 3
- Fin 325 3
- Mgt 301 3
- Mktg 360 3
- Complete Writing Portfolio

Second Semester
- Dec S 340 3
- 4 of Group A Electives 6

Senior Year

First Semester
- Pol S Elective 3
- Two Of Group A’ 6
- Elective 3

Second Semester
- Two Of Group B’ 6
- Tier III Course (GER) 3
- Electives 6

For a total of 7 hours of Biological and Physical Sciences.

Group A electives: Dec S 417, 440; Econ 301, 302, 311, 320, 401 (only one Econ may be used); MIS 372, 375. Note: Dec S 418 and 440 may not be double counted.

Group B electives: 300-400-level Business elective; Fin 425 [M]; 300-400-level Mgt elective; MIS 271, 372 [M], 374, 375, 472 [M]; Mktg 368. Note: Courses may not be double counted.
ELECTRONIC COMMERCE DEGREE PROGRAM (120 HOURS) ✔FYDA

The electronic commerce (e-Commerce) major is an interdisciplinary major within the College of Business and Economics that focuses on the effective development, deployment, use, and management of information technologies to support e-commerce strategies and initiatives in business organizations. The primary goal of the major is to empower undergraduate students by helping them develop and apply the knowledge and skills necessary to enable their organizations to succeed in the digital era.

Freshman Year

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Sophomore Year

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Junior Year

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Senior Year

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1 For a total of 7 hours of Biological and Physical Sciences.
2 Choose from: Mktg 450; B Law 418; H A 493; EntrP 485; I Bus 488; Dec S 450 [M]; MIS 425/426; MIS 448, 472 [M].

ENTREPRENEURSHIP DEGREE PROGRAM (120 HOURS) ✔FYDA

The entrepreneurship major has been developed for students interested in venture management, new venture startups, and small business and the management of family firms.

Freshman Year

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Sophomore Year

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Junior Year

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Senior Year

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<tr>
<td>Tier III Course (GER)</td>
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<tr>
<td>Elective</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
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<td>3</td>
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<tr>
<td>EntrP 490</td>
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<tr>
<td>Mgt 491</td>
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<tr>
<td>One from: Group A</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 Group A electives are: Acctg 338; B Law 410; Econ 301; EntrP 485, 496, 498 (3 hours), and 499 (3 hours); Ins 420 [M]; MIS 372 [M]; Mgt 450, 455; Mktg 478 [M].

FINANCE DEGREE PROGRAM (120 HOURS) ✔FYDA

Preparation for careers in financial departments of businesses, commercial and investment banks, governmental financial agencies, and other financial institutions.

Freshman Year

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<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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<tbody>
<tr>
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<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 201</td>
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<td>MIS 250</td>
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Sophomore Year

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<td>Math 202 [N] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<td>Soc or Psych [S,K] (GER)</td>
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<td>Dec S 215</td>
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<td>Oral Com [C] (GER)</td>
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<td>Pol S Elective</td>
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Junior Year

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<td>Fin 325</td>
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<td>Mgt 301</td>
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<td>Mktg 360</td>
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Senior Year

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83
### GENERAL BUSINESS DEGREE PROGRAM (120 HOURS) ✔FYDA

Preparation for careers in business for the student who does not wish to specialize in any of the other options. Students looking forward to being proprietors of their own business frequently desire a general business course of study.

#### Freshman Year

<table>
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<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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<td>English 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Tier I Science [Q] (GER)</td>
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#### Sophomore Year

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<td>Physical Sciences [P] (GER)</td>
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<td>Dec S 215</td>
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<td>Oral Com [C] (GER)</td>
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<td>Soc or Psych [S,K] (GER)</td>
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#### Junior Year

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<td>Mgt 301</td>
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<td>Mktg 360</td>
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<td>Complete Writing Portfolio</td>
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<td>300-400-level Bus or Econ Elective</td>
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<td>400-level Business Elective</td>
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<td>Pol S Elective</td>
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<table>
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<td>Elective</td>
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### HUMAN RESOURCES/PERSONNEL DEGREE PROGRAM (120 HOURS) ✔FYDA

Preparation for careers in personnel and industrial relations and the personnel aspects of government service and business including: employee recruitment and selection, financial compensation systems, training and development.

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 201</td>
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<tr>
<td>MIS 250</td>
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#### Sophomore Year

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<td>Acctg 231</td>
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<tr>
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#### Junior Year

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<tr>
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<td>Mgt 301</td>
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<table>
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<tbody>
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#### Senior Year

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<thead>
<tr>
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<tbody>
<tr>
<td>Mgt 456 [M]</td>
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### INTERNATIONAL BUSINESS DEGREE PROGRAM (122 HOURS) ✔FYDA

Preparation for careers with multinational corporations, governmental and intergovernmental agencies both domestic and international. Students must complete the following Foreign Study Curriculum 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. Biligual Americans may substitute satisfactory ETS scores or certification by a WSU faculty member who is a native speaker of the target language.

#### Freshman Year

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<tr>
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#### Sophomore Year

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<td>Dec S 215</td>
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Second Semester

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1 For a total of 7 hours of Biological and Physical Sciences.

2 Group A Electives are: 1 Bus 415, 416 [M], 435, 453, 481, 482 [M], 492 (may not be used under both International Business and Business core), 496, 498; one of Econ 416, 472, or 1 Bus 470. No more than 3 hours of 498 may be used.

3 Study Abroad coursework must be approved by I Bus director before it is taken and include the second semester of the foreign language requirement.

MANAGEMENT DEGREE PROGRAM

**ELECTIVE 3**

Sophomore Year

Intercultural [I,G,K] (GER) 3

Econ 101 [S] or Econ 102 [S] (GER) 3

**ELECTIVE 3**

Soc or Psych [S,K] (GER) 3

Mgt 401 [M] 3

Dec S 340 3

300-400-level Elective 3

Complete Writing Portfolio

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>Mgt 491 or 492</td>
<td>3</td>
</tr>
<tr>
<td>Three of: Dec S 412 [M], 418, 440 [M], 344; MIS 375; Mgt 450, 453, 489</td>
<td>9</td>
</tr>
<tr>
<td>Elective</td>
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</tbody>
</table>

**ELECTIVE 3**

Second Semester

Mgt 483 [M] 3

Tier III Course (GER) 3

Two of: 400-level Mgt, 300-400-level Business, Econi, or 300-400-level Anth, Psych, Soc Elective 3

1 For a total of 7 hours of Biological and Physical Sciences.

2 Choose from Econ 301, 302, 320, 350, 360, 450, or 470.

MANAGEMENT INFORMATION SYSTEMS DEGREE PROGRAM

**ELECTIVE 3**

**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.

Freshman Year

**First Semester**

<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>Econ 101 [S] or Econ 102 [S] (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>
</tr>
<tr>
<td>Tier I Science [Q] (GER)</td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 201</td>
<td>3</td>
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<tr>
<td>MIS 250</td>
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Sophomore Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Acctg 230</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 202 [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>Elective</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Acctg 231</td>
<td>3</td>
</tr>
<tr>
<td>B Law 210</td>
<td>3</td>
</tr>
<tr>
<td>Dec S 215</td>
<td>4</td>
</tr>
<tr>
<td>Oral Com [C] (GER)</td>
<td>3</td>
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<tr>
<td>Pol S Elective</td>
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Junior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>300-400-level Elective</td>
<td>3</td>
</tr>
<tr>
<td>Engl 402 [W] or 403 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Fin 325</td>
<td>3</td>
</tr>
<tr>
<td>Mgt 301</td>
<td>3</td>
</tr>
<tr>
<td>Mktg 360</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Dec S 340</td>
<td>3</td>
</tr>
<tr>
<td>Engl 402 [W] or 403 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>MIS 372 [M]</td>
<td>3</td>
</tr>
<tr>
<td>MIS 374</td>
<td>3</td>
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<tr>
<td>MIS 375</td>
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Senior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Mgt 491 or 492</td>
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</tr>
<tr>
<td>Three of: Dec S 412 [M], 418, 440 [M], 344; MIS 375; Mgt 450, 453, 489</td>
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</tr>
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<td>Elective</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>Mgt 483 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Two of: 400-level Mgt, 300-400-level Business, Econi, or 300-400-level Anth, Psych, Soc Elective 6</td>
<td>3</td>
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</tbody>
</table>

1 For a total of 7 hours of Biological and Physical Sciences.

2 For a total of 7 hours of Biological and Physical Sciences.

MARKETING DEGREE PROGRAM

**ELECTIVE 3**

**MARKETING DEGREE PROGRAM (120 HOURS)**

Preparation for careers in marketing management, sales, retail management, marketing research, brand management, and promotion.

Freshman Year

**First Semester**

<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>
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<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Math 201</td>
<td>3</td>
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<tr>
<td>MIS 250</td>
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Sophomore Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Acctg 230</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 202 [N] (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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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Acctg 231</td>
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<tr>
<td>B Law 210</td>
<td>3</td>
</tr>
<tr>
<td>Cpt S/MIS 153</td>
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<tr>
<td>Dec S 215</td>
<td>4</td>
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<tr>
<td>Oral Com [C] (GER)</td>
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<td>Pol S Elective</td>
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Junior Year

**First Semester**

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Dec S 340</td>
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<td>Engl 402 [W] or 403 [W] (GER)</td>
<td>3</td>
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<tr>
<td>Fin 325</td>
<td>3</td>
</tr>
<tr>
<td>Mgt 301</td>
<td>3</td>
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<tr>
<td>Mktg 360</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Elective</td>
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Senior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Elective</td>
<td>3</td>
</tr>
<tr>
<td>MIS 425 or 426</td>
<td>3</td>
</tr>
<tr>
<td>MIS 448</td>
<td>3</td>
</tr>
<tr>
<td>Mgt 491 or 492</td>
<td>3</td>
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<tr>
<td>Soc or Psych [S,K] (GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>Elective</td>
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**Second Semester**

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
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**Second Semester**

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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<tbody>
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<td>Elective</td>
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**Group A Elective**

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
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<tr>
<td>Group B Elective</td>
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<tr>
<td>Mktg 407</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
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</table>
REAL ESTATE DEGREE PROGRAM (120 HOURS)  ✔FYDA
Preparation for careers in real estate administration, appraisal, brokerage, finance, management, marketing, production, selling, and title insurance.

Freshman Year
First Semester
Hours
Arts & Humanities [H] (GER) 3
Econ 101 [S] or Econ 102 [S] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Tier I Science [Q] (GER) 3

Second Semester
Hours
Biological Sciences [B] (GER)3
Econ 101 [S] or Econ 102 [S] (GER) 3
GenEd 111 [A] (GER) 3
Intercultural [I, G, K] (GER) 3
Math 201 3

Sophomore Year
First Semester
Hours
Acctg 230 3
B Law 210 3
Math 202 [N] (GER) 3
Soc or Psych [S,K] (GER) 3
Elective 3

Second Semester
Hours
Acctg 231 3
Dec S 215 4
MIS 250 3
Oral Com [C] (GER) 3
Physical Sciences [P] (GER)3 3 or 4

Junior Year
First Semester
Hours
300-400-level Elective 3
Engl 402 [W] or 403 [W] (GER) 3
Fin 325 3
Mgt 301 3
R E 305 3
R E 306 or Elective 1
Complete Writing Portfolio

Second Semester
Hours
300-400-level Elective 3
Acctg 231 3
Dec S 215 4
MIS 250 3
Oral Com [C] (GER) 3
Physical Sciences [P] (GER)3 3 or 4

Senior Year
First Semester
Hours
B Law 414 [M] 3
Group A Elective2 3
Group B Elective1 3
R E 407 3
Tier III Course (GER) 3
Elective 2

Second Semester
Hours
300-400-level Business Elective1 3
Mktg 491 or 492 3
R E 409 3
Tier III Course (GER) 3
Electives1 6

REAL ESTATE DEGREE PROGRAM (120 HOURS)  ✔FYDA
Preparation for careers in insurance agencies, actuarial administration, claims, business risk management, investment, and underwriting.

Freshman Year
First Semester
Hours
Arts & Humanities [H] (GER) 3
Econ 101 [S] or Econ 102 [S] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Tier I Science [Q] (GER) 3

Second Semester
Hours
Biological Sciences [B] (GER)3
Econ 101 [S] or Econ 102 [S] (GER) 3
GenEd 111 [A] (GER) 3
Intercultural [I, G, K] (GER) 3
Math 201 3

Sophomore Year
First Semester
Hours
Acctg 230 3
B Law 210 3
Math 202 [N] (GER) 3
Soc or Psych [S,K] (GER) 3
Elective 3

Second Semester
Hours
Acctg 231 3
Dec S 215 4
MIS 250 3
Oral Com [C] (GER) 3
Physical Sciences [P] (GER)3 3 or 4

Junior Year
First Semester
Hours
300-400-level Elective 3
Engl 402 [W] or 403 [W] (GER) 3
Fin 325 3
Mgt 301 3
R E 305 3
R E 306 or Elective 1
Complete Writing Portfolio

Second Semester
Hours
300-400-level Elective 3
Acctg 231 3
Dec S 215 4
MIS 250 3
Oral Com [C] (GER) 3
Physical Sciences [P] (GER)3 3 or 4

Senior Year
First Semester
Hours
B Law 414 [M] 3
Group A Elective2 3
Group B Elective1 3
R E 407 3
Tier III Course (GER) 3
Elective 2

Second Semester
Hours
300-400-level Business Elective1 3
Mktg 491 or 492 3
R E 409 3
Tier III Course (GER) 3
Electives1 6

Minors in Business Specializations
To be eligible to certify in one of the business minors, students must have a cumulative g.p.a. of 2.5. Minors in business specializations require at least 16 hours of credit, 8 of which must be 300-400-level, with an overall g.p.a. of at least 2.0 in the required courses. Courses for the minors may not be taken pass, fail. A total of 6 hours 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 appropriate department chairperson must approve deviations from the stated requirements.


Business Administration: Not more than three from Acctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Mgt 101. Not less than three from Dec S 340, Fin 325, 1 Bus 380, Ins 320, Mgt 301, MIS 350, 372, Mktg 360, R E 305.


Entrepreneurship: Three from Econ 301, Fin 325, Mgt 301, MIS 375, Mktg 360; and three from Entrep 375, 426, 489, 490, 492 [M], 496, 498 (no more than 3 hours), or 499 (no more than 3 hours).

Finance: Acctg 231, Dec S 215, Fin 325, 421, 427 [M]; one of Fin 422, 425 [M], 426, 428 or 481.

Human Resource/Personnel: Dec S 215, Econ 101, Mgt 301, 450, 455: one of Econ 350, 450, Mgt 401 [M], or 456 [M].
International Business: 1 Bus 380 [M]; one of 1 Bus 435, 453, 496, or 498 (3 credits); two of the following pairs of courses: B Law 210, 1 Bus 415 or 416 [M]; 1 Bus 482, Mkgt 360; Econ 102, 1 Bus 375, 417, 470, 472, or Ag Ec 453; Fin 329, 1 Bus 481. Up to 9 hours of foreign study may be substituted for the above courses. Pre-approval is required.


Marketing: Mkgt 360, 407: four of Mkgt 368, 450, 461 [M], 468, 470, 477, 478 [M], 480, 482 [M], 490 [M], 495 [M], 496 [M], 498 [M], 499 [M], 510, 522 [M]; or 425/426 or 448.

Real Estate: R E 305; 306; Fin 409 or R E 409; three of: B Law 414, R E 405 [M], 406, 407, or 408.

Risk Management and Insurance: B Law 210, Econ 102, Ins 320: three of Fin 425 [M], Ins 321, 322, or 420 [M].

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; Dec 5 215, 346; Econ 101, 102; Engl 402 [W] or 403 [W]; Fin 325; Math 201, 202; Mgt 301; Mgt 491 or 492; MIS 250; Mkgt 360; and the courses required for the student's chosen major in business.

The second degree can usually be completed in less than two years, depending on the number of business requirements completed as electives for the first undergraduate degree. Second degree students must have completed Acctg 230, 231; B Law 210; Dec 5 215, 346; Econ 101, 102; Engl 402 [W] or 403 [W]; Fin 325; Math 201, 202; Mgt 301; Mgt 491 or 492; MIS 250; Mkgt 360; and the courses required for the student's chosen major in business.

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. Students at Washington State community colleges should follow the schedule of studies outlined in the 2 Plus 2 Program brochure. It should also be noted that courses taken at community colleges are not accepted as transferable equivalents to 300-400-level courses at WSU.

Description of Courses

Special Notice: Enrollment in 300-400-level business courses is restricted to students who have certified as BA/BA majors or minors and to juniors and seniors officially certified into other degree programs requiring these business courses.

Accounting

Acctg 230 Introduction to Financial Accounting 3 Introduction to corporate financial reporting via the preparation and interpretation of financial statements.


Intermediate Accounting I 3 Prereq Acctg 231; MIS 250. Theory underlying the determination of income: analysis of financial statements.


335 Introduction to Taxation 3 Prereq Acctg 230, 231. Fundamentals of tax information use in making sound business and financial decisions.

338 Cost Accounting 3 Prereq Acctg 231; Dec 5 215; Math 107 or 201; 202; MIS 250. Management uses of cost information: cost systems and system design; cost analysis.

340 Advanced Accounting 3 Prereq Acctg 331. Partnership equities and extended forms of corporate ownerships and entities.

341 Accounting Theory 3 Prereq Acctg 331. Accounting theory and contemporary issues.

343 [M] Accounting Systems and Auditing 3 Prereq Acctg 330, 338; MIS 250. Accounting systems design; internal control and computerization.

344 Accounting for Public Organizations 3 Prereq Acctg 331. Conceptual and procedural accounting issues involving public sector organizations.

345 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.

346 International Accounting and Taxation 3 Prereq Acctg 231. Comparative accounting systems: foreign currency transactions, transfer pricing, taxation income.

348 [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.

349 [M] Auditing 3 Prereq Acctg 331, 433; MIS 250. Nature of auditing; generally accepted auditing standards; audit procedures as related to auditing of financial statements by independent accountants.

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.

530 Accounting Theory 3 Recent developments with respect to the determination of income and the valuation of assets.

531 Federal Taxation 3 Prereq Acctg 335. Overview of federal taxation of individuals, partnerships, corporations, estates, and gifts.

532 Contemporary Accounting Cases and Problems 3 Accounting theory applied to external financial reporting practices.

533 Administrative Control 3 Managerial evaluation of budgeting, cost accounting, and financial analysis techniques; their utilization in control of operations.

535 Taxation of Partners and Partnerships 3 Prereq Acctg 335. Federal income tax impact on partners and partnerships of forming, operating, and liquidating partnerships.

536 Taxation of Corporations and Stockholders 3 Prereq Acctg 335. Federal income tax impact on corporations and their stockholders from forming, operating, and liquidating corporations.

537 Tax Research and Estate Planning 3 Legal tax research methodology; federal estate and gift taxation and retirement planning.

Seminar in Cost/Managerial Accounting 3 Cost concepts, cost and managerial accounting systems; current issues and research in cost and managerial accounting.

Seminar in Public Accounting and Auditing 3 Prereq Acctg 439. Public accounting and auditing to present; current issues including statistical sampling and computers.

Introduction to Financial and Managerial Accounting 3 Fundamentals of financial and managerial accounting; primarily for graduate students who wish to meet the MBA core requirements in accounting.

Doctoral Topics 3 May be repeated for credit; cumulative maximum 15 hours. Advanced topics in accounting.

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

602 Master's-Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Business Law

B Law 210 Law and the Legal Environment of Business 3 Fundamentals of business law; the legal system, legal reasoning and the law of contracts, torts, and agency.

310 Law and Government Regulation of Business 3 Prereq B Law 210. Legal aspects of government regulation of business; administrative law, antitrust law, environmental law, and labor law.

411 Law of Business Organizations 3 Prereq B Law 210. Law of partnerships, limited liability companies and corporations, securities regulation, secured transactions and bankruptcy law.

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.

Ethics in Cyberspace 3 Prereq B Law 210 and MIS 250. Examination of the moral and ethical parameters of doing business in cyberspace.

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

Business Law I 3 The legal process, constitutional and administrative law: torts, crimes, sales, agency, and employment law.

Business Law II 3 Prereq B Law 210 or 510. Law of partnerships, corporations, securities regulations, negotiable instruments, secured transactions, property, insurance and bankruptcy; government regulation of businesses and professions.

Law of Cyberspace 3 Prereq B Law 210 or 510. Laws regulating communications, contracts, torts, and crimes in cyberspace.
Decision Sciences

Dec S

215 Statistics 4 (3-3) Prereq Math 201. Data presentation, probability, distributions, inferences, and linear regression as applied to business and economics.

340 Operations Management 3 Prereq Dec S 215. Management of production and service operations with an emphasis on quality management; planning and control of workflow; resource allocation, and utilization.

344 Principles of Optimization 3 Same as Math 364.


417 Simulation Methods 3 Same as Math 416.

418 Quality Improvement for Management 3 Prereq Dec S 215. Total quality management as used in industries; philosophy of Deming and others, control charts, process capability analysis, team tools.


451 Business Statistical Analyses 3 Prereq admission to MBA program. Advanced preparation for graduate-level business analyses, applied finite math and statistics principles.

498 Quantitative Methods Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization.

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

516 Time Series V 3 Prereq Dec S 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 Dec S 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 Dec S 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 Dec S 340. Decision analysis, linear optimization models, nonlinear models, network analysis including PERT, and dynamic programming as applied to business.


581 Operations Management 3 Prereq Dec S 340. Analytical approach to solving problems in production and operations management.

586 Applied Multiple Time Series Analysis 3 Prereq Dec S 516. Approaches to modeling and analysis of multiple time series.

591 Statistical Analysis for Business Decisions 3 Prereq Dec S 215, Math 201, 202. Analytical skills for decision-making; data collection and analysis, sampling, inferential, regression methodology, experimental design, time series, forecasting analysis.

596 Doctoral Topics V 1-4 May be repeated for credit; cumulative maximum 15 hours. Advanced topics in decision sciences.

598 Research and Professional Development 1 May be repeated for credit; cumulative maximum 6 hours. Ph.D.-level professional development colloquium designed to improve research, teaching, and presentation skills and to provide professional socialization.

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.

Entrepreneurship

EnrP

375 Electronic Commerce and the Internet 3 Same as MIS 375.

426 Entrepreneurship Finance 3 Same as Fin 426.

488 Entrepreneurship for E-Commerce 3 Prereq Fin 325, Mktg 360, Mgt 301, MIS 375. Understanding new ventures in the e-commerce environment.

489 Entrepreneurial Management 3 Same as Mgt 489.

490 [M] Entrepreneurship 3 Same as Mktg 490.

492 Small Business Policy 3 Same as Mgt 492.

496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Course covers new or time-sensitive topics in entrepreneurship.

498 Entrepreneurship Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government, or nonprofit organization.

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

521 Economic Theory I 3 Same as Econ 500.

502 Economic Theory II 3 Same as Econ 501.

503 Economic Theory IV 3 Same as Econ 503.

504 Economic Theory V 3 Same as Ag Ec 504.

510 Statistics for Economists 4 Same as Ag Ec 510.

511 Econometrics I 3 Same as Econ 511.

512 Econometrics II 3 Same as Ag Ec 512.

521 Interest Rates and Financial Markets 3 Prereq Fin 325. Real and nominal interest rates; bond pricing; term and risk structure of interest rates; investment and commercial banking; financial futures.


526 Problems in Financial Management 3 Prereq Fin 325. Application of financial principles to problems in financial management; credit policy, capital budgeting, leasing and mergers, cash management.

527 Investment Analysis 3 Prereq Fin 325. 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 Prereq Fin 325. Application of finance principles to firms in high-tech industries; financing, risk management, capital investment, and mergers/acquisitions.

581 International Finance 3 Same as I Bus 581.

590 Advanced Topics in Mathematical and Quantitative Methods 3 Same as Ag Econ 590.

591 Advanced Topics in Monetary and Public Economics V 1-6 Same as Econ 591.
583 Organization Design 3 Development and design of contemporary systems of organization and management.

585 Graduate Seminar in Negotiations 3 Bargaining skills across a broad range of business settings; experiential work. Credit not granted for both Mgt 485 and 585.

586 Seminar in Management 3 May be repeated for credit; cumulative maximum 6 hours. Prereq admission to MBA program. Special topics in management, organization behavior, organization theory, human resource management and strategic management.

587 Business Ethics 3 Prereq Phil 260. The nature and sources of ethical conflicts and dilemmas individuals and organizations confront in the business context. Credit not granted for both Mgt 487 and 587.

590 Strategy Formulation and Organizational Design 3 Relationship between the formulation of strategy and the selection of effective organizational structures and systems.

593 Managerial Leadership and Productivity 3 Organizational behavior and human motivation in the workplace; organization and leadership theories, studies, projects and models leading to improved productivity.

596 Doctoral Topics 3 May be repeated for credit; cumulative maximum 15 hours. Advanced topics in management.

597 Doctoral Topics 3 May be repeated for credit; cumulative maximum 9 hours. Advanced topics in macro-organizational behavior.

598 Research and Professional Development 1 May be repeated for credit; cumulative maximum 6 hours. Ph.D.-level professional development colloquium designed to improve research, teaching, and presentation skills and to provide professional socialization. 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.

Management Information Systems

MIS 153 BASIC Programming 2 Same as Cpt S 153.

201 Network and Operating System Essentials 2 Introduction to network, operating systems, and the technologies that support them; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

202 Implementing and Supporting Windows 2000 3 Installation, configuration, and management of Windows 2000 Professional and Server; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

203 Implementing Network Infrastructure 3 Installation, configuration, and management of network services within Windows 2000 networks; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

204 Implementing Directory Services 3 Installation, configuration, and management of Windows 2000 Directory Services; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

205 Designing Network Infrastructure 3 Designing network infrastructures using Windows 2000 technologies; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

206 Designing Directory Services 2 Designing directory services using Windows 2000; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

207 Designing Secure Networks 3 Designing secure networks using Windows 2000 technologies; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

208 Updating Support Skills to 2000 3 Provides updated information for those already familiar with Windows NT 4.0 seeking Windows 2000 knowledge; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

209 Internet Information Server 2 Various features of MS Internet Information Server and Web hosting; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

210 MS FrontPage 2 Practical and logical web design using MS FrontPage; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

220 Oracle Operator 3 Extensive introduction to Oracle database technology; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

221 Introduction to ORACLE SQL and PL/SQL 3 Using Oracle to manage relational and object-oriented databases; course may not be used to satisfy specific course requirements for the Bachelor of Arts in Business Administration. S, F grading.

250 Managing Information Technology 3 (2-2) Comprehensive overview of the role of management information systems in business, principles and application of MIS, and hands-on computer labs.

271 Applications Program Development 3 Top-down program design, structured programming techniques, and program testing, using COBOL language.


350 Management Information Systems 3 Prereq MIS 150. Management information systems foundations; current trends; MIS technology fundamentals; applications to business functions and management practice.


374 Telecommunications and Networking in Business 3 Prereq MIS 250. Data communications, infrastructure, and protocols; network topologies and management; business applications of communication technologies.

375 Electronic Commerce and the Internet 3 Prereq MIS 250. The Internet to support and enable electronic commerce; effective design and implementation; managerial issues.

418 Ethics in Cyberspace 3 Same as B Law 418.

425 Emerging Technologies I 3 May be repeated for credit; cumulative maximum 12 hours. Prereq MIS 250. Special and advanced topics in MIS.

426 Emerging Technologies II 3 May be repeated for credit; cumulative maximum 15 hours. Prereq MIS 250. Special and advanced topics in MIS.

448 Strategic Information Technology Management 3 Prereq Mgt 301, MIS 250. Information problems, management of the information resource, uses of computer-based systems to improve management decision-making.

472 [M] Systems Analysis and Design 3 Prereq MIS 372; two of Cpt S 150, Cpt S 153, MIS 271. The application of systems analysis and design to the development of information systems; systems development life cycle.

498 Management Information Systems Internship 3 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 3 I-4 May be repeated for credit. S, F grading.

507 Computers and Systems for Managers 3 Data base concepts, management information systems, design of application programs, and computer concepts.

517 Law of Cyberspace 3 Same as B Law 517.

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, topologies and management, wired and wireless solutions, and related research issues.

755 Electronic Commerce and the Internet 3 Prereq admission to the MBA Program. Technologies underlying electronic commerce and the internet; strategies and implementation plans for managing the implementation of electronic commerce systems.

576 Emerging Technologies 3 Prereq admission to the MBA Program. Special and advanced topics in MIS.

580 Information Systems Management 3 Data processing organization; operations, application development, computer selection, management of computer personnel and systems.

596 Doctoral Topics 3 May be repeated for credit; cumulative maximum 9 hours. Prereq graduate standing. Advanced topics in management information systems.

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

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Marketing

Mktg 327 Services/Nonprofit Marketing 3 Marketing applications in the service sector. Cooperative course taught by UI (Bus 327), open to WSU students.

360 Marketing 3 Functions, methods, and middlemen used in marketing the principal types of goods; price policies, cost of marketing; government regulation.
368 Marketing Research 3 Prereq Dec S 215; Mktg 360. Survey and experimental methods as they relate to marketing research.


417 Consumer Behavior and E-Commerce 3 Prereq Mktg 360 or equivalent. Theories of social science explaining the mental, emotional, and physical activities underlying consumer behavior in traditional physical and digital environments.

450 Internet Marketing 3 Prereq Mktg 360. Case and project-based course exploring marketing’s role in the Internet and electronic commerce.


468 Public Policy and Marketing 3 Prereq Mktg 360. Productivity and efficiency in marketing; government regulation of marketing structure and of marketing policies and practices; consumer protection and welfare.

470 Retail Management 3 Prereq Mktg 360. Retailing system; organization, merchandising models, pricing, promotion, location, and control procedures; management decision processes.

477 Promotion Management 3 Prereq Mktg 360. Text and case approach to integrating promotion into the marketing plan; methods, organization, communications, media selection, and campaigns.

478 [M] Sales Management 3 Prereq Mktg 360. The role of selling in the marketing mix; problems in planning, organizing, evaluating, and controlling the sales force.


482 [M] International Marketing 3 Same as 1 Bus 482.


495 [M] Management Marketing 3 Prereq Mktg 360; 6 hours Mktg. Analysis of marketing policy; approaches to solutions of marketing problems.

496 Special Topics V1-3 May be repeated for credit; cumulative maximum 6 hours.

497 Marketing Yourself 1 Career opportunity assessment, position research, resume, application letter, interviewing skills, motivation, attitudes for success, solicitation and assessment of others.

498 Marketing 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.

505 Survey of Marketing 3 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 Marketing management and administrative policies as they relate to concepts, strategies, and decision making.

560 Research Methodology 3 Prereq Dec S 215. Types of data needed and available, collection and analysis of data as they relate to decisional research.

561 Technology and New Product Marketing 3 Prereq Mktg 360. Introduction of new products that are based on new technology; exploration of actual products in the market.

565 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.

567 Consumer Behavior Theory 3 Prereq Mktg 505. Theory in consumer and buyer behavior; conceptual and empirical research role of purchase and consumption behavior on society and marketing.

596 Doctoral Topics 3 May be repeated for credit; cumulative maximum 15 hours. Advanced topics in marketing.

600 Special Projects or Independent Study 3 Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination 3 Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination 3 Variable credit. S, F grading.

Real Estate

R E

305 Real Estate 3 Prereq B Law 210, Econ 102. Relationships between location and value; patterns of urban land use; legal, financial, and organizational framework of the real estate business.


405 [M] Real Estate Valuation 3 Prereq Fin 325; R E 305. Principles and practices of real property valuation; factors affecting real property values and income; appraisal and location theory.

406 Real Estate Administration 3 Prereq R E 305. The case method of analyzing management policies, practices, and decision making in real estate time.

407 Real Estate Investments 3 Prereq Fin 325; R E 305. Instruments, techniques, and institutions of real estate investment; forms of ownership, tax law, decision-making tools and applications.

408 Valuation of Income Property 3 Prereq Fin 325, R E 405. Appraisal of commercial, industrial, retail and multi-family properties; analysis of business values, construction costs and discounted cash flow analysis.

409 Real Estate Finance 3 Prereq Fin 325. Analysis of primary and secondary mortgage markets, financing techniques, mortgage securities, mortgage risk, and real estate portfolios.

498 Real Estate 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.

522 Advanced Topics in Real Estate 3 Basic forces that motivate and affect investors in their use and possession of real estate.

600 Special Projects or Independent Study 3 Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination 3 Variable credit. S, F grading.

Department of Chemical Engineering

Professor and Department Chair, R. Zollars; Professors, C. F. Ivyoo, J. M. Lee, K. C. Liddell, R. Mahalingam, R. C. Miller, N. J. Petersen, W. J. Thomson, B. J. Van Wie; Associate Professors, R. P. Cavaleri, C. S. Claiborn; Assistant Professor, B. M. Peyton.

The goal of the Chemical Engineering Department at Washington State University is:

To educate students to analyze problems and design solutions from a chemical engineering viewpoint, communicate the solutions effectively, and remain productive throughout their lives.

When students graduate from this department they should be able to use their education to be confident, independent engineers capable of effective problem solving.

To achieve this goal we seek for: 1) prepare B.S. level students for careers or further education by means of a broad educational program based in chemical engineering fundamentals, 2) prepare students to be capable of continuous learning via a variety of approaches including a balance of fundamental versus practical research, 3) facilitate interactions with regional and national industries, and 4) maintain an environment which promotes close interaction between students and faculty in teaching, mentoring and research.

Meeting these objectives will be monitored by an annual assessment of selected activities within the department. 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 may also find rewarding work in plant operation, plant management, university teaching, sales-service, and other functions requiring chemical engineering training. The curriculum in chemical engineering in the College of Engineering is accredited by the Accreditation Board for Engineering and Technology (ABET).

The total number of majors in the department is restricted at the junior level.

The department offers courses of study leading to the degrees of Bachelor of Science in Chemical Engineering, Master of Science in Chemical Engineering, and Doctor of Philosophy.
Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

The Bachelor of Science degree in Chemical Engineering requires a total of 132 semester hours. At least 66 of the total hours required for this degree must be in 300-400-level courses.

**Chemical Engineering Degree Program (132 Hours)**

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<tr>
<th>FYDA</th>
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<tbody>
<tr>
<td><strong>Freshman Year</strong></td>
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<tr>
<td><strong>First Semester</strong></td>
<td>Hours</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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<tr>
<td>Intercultural [J,G,K] (GER)</td>
<td>2</td>
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<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
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<tr>
<td><strong>Second Semester</strong></td>
<td>Hours</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)²</td>
<td>4</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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<tr>
<td>Math 172</td>
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<tr>
<td><strong>Sophomore Year</strong></td>
<td>Hours</td>
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<tr>
<td>Ch E 201</td>
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<td>Ch E 298</td>
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<td>Chem 340</td>
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<td>Chem 341</td>
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<td>Phys 201 [P] (GER)</td>
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<tr>
<td><strong>Second Semester</strong></td>
<td>Hours</td>
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<tr>
<td>Ch E 211</td>
<td>3</td>
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<tr>
<td>Ch E 298</td>
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<tr>
<td>Chem 342 or MBioS 303</td>
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<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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<tr>
<td>Math 315</td>
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<td>Phys 202 [P] (GER)</td>
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<tr>
<td><strong>Junior Year</strong></td>
<td>Hours</td>
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<tr>
<td>Ch E 301</td>
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<tr>
<td>Ch E 310</td>
<td>3</td>
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<tr>
<td>Ch E 398</td>
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<tr>
<td>Chem 331</td>
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<td>E E 304</td>
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<td>Eng 402 [W] (GER)</td>
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<tr>
<td>Chemistry Elective³</td>
<td>2</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<td><strong>Second Semester</strong></td>
<td>Hours</td>
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<tr>
<td>Ch E 321</td>
<td>3</td>
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<tr>
<td>Ch E 332</td>
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<tr>
<td>Ch E 334</td>
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<tr>
<td>Ch E 398</td>
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<tr>
<td>Chem 333</td>
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<tr>
<td>Chem 336</td>
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<tr>
<td>Math Elective³</td>
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</table>

Tier III Course, Humanities or Social Sciences (GER) 3

**Senior Year**

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>First Semester</strong></td>
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<tr>
<td>Ch E 432</td>
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<tr>
<td>Ch E 441</td>
<td>3</td>
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<tr>
<td>Ch E 450</td>
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<tr>
<td>Ch E 498</td>
<td>1</td>
</tr>
<tr>
<td>Ch E Elective⁵</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Elective⁶</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
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<tr>
<td>Ch E 433 [M]</td>
<td>2</td>
</tr>
<tr>
<td>Ch E 451 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Ch E 498</td>
<td>1</td>
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<tr>
<td>Ch E Electives⁵</td>
<td>6</td>
</tr>
<tr>
<td>Technical Elective⁷</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ A total of 18 credits of arts and humanities, social sciences, intercultural studies, and world civilizations is required. For engineering majors, the Tier III requirement must be satisfied with a course in the arts and humanities or social sciences. Tier II courses should be selected so that any prerequisites for the Tier III course are satisfied.

² BioI 103, 104, or MBioS 101.

³ Chem 220, 401, 410, 415, 421, 424, 425, 427, 430, 461, 480, 481, 482, or SoilS 421. If a student takes both Chem 342 and MBioS 303, one can be used to satisfy the Chem elective. Other courses may satisfy this elective if: a) Chem 105 or 106 is a prerequisite for the course and b) you obtain prior permission from your adviser.

⁴ Choose from: Math 375, 415, 423, 440, 441, 443, or 448.

⁵ Ch E 418, 435, 465, 466, 467, 475, 476, 481, 485, 487, 495, and 499. Of the total of 9 credits in chemical engineering electives, a cumulative total of only 3 credits is allowed in Ch E 495 and 499 combined.

⁶ Any course from an engineering department other than chemical engineering is acceptable with the exception of the following courses: BSysE 110, 120, 210, 310, 311, 339, 441; CE 120, 174, 301, 462, 463, 464, 471, 480; E E 120, 380, 415; MSE 110, 120, 309, 440, 450; M E 103, 120, 125, 301, 313, 400. Chemical engineering courses may be used to satisfy this requirement but cannot be counted as a Chemical Engineering Elective as well as long as a course from an engineering department other than Chemical Engineering is taken as a technical elective.

⁷ Must be approved by adviser prior to enrollment in the class. Course need not be taken from another engineering department if an engineering elective was taken from an engineering department other than Chemical Engineering.

**Certification**

Specific requirements for certification in chemical engineering can be obtained from the departmental office although eligibility usually occurs at the middle of the sophomore year. Criteria for certification include overall g.p.a., grades earned in mathematics and physical sciences courses, and performance in the Ch E 201 course. A certified student earning a g.p.a. of less than 2.0 for any two semesters is subject to decertification.

**Transfer Students**

Students who are planning to transfer to Chemical Engineering at Washington State University from other institutions should coordinate their programs with the department chair to establish a schedule of studies leading to the bachelor’s degree. This is desirable because of sophomore professional requirements and course sequences. A strong preparation in chemistry, mathematics, and physics is necessary prior to transfer to minimize the time required at Washington State University to complete bachelor’s degree requirements.

**Preparation for Graduate Study**

As preparation for work toward an advanced degree, a student should have completed substantially the equivalent of the above schedule of studies. A Bachelor of Science degree in Chemical Engineering from an institution accredited by ABET normally will satisfy this requirement.

Special programs are also available for students with bachelor’s degrees in chemistry or other areas of science who wish to obtain the Master of Science degree in Chemical Engineering.

**Description of Courses**

**Chemical Engineering**

**Ch E**

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.

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.

398 Technical Seminar

1 May be repeated for credit; cumulative maximum 2 hours. S, F grading.

418 Materials Processing

3 Prereq Ch E 334; Chem 105, 106; Ch E major. Processing of semiconductor materials.
510 Transport Processes 3 Same as M E 315.
499 Special Problems 1 May be repeated for credit; cumulative maximum 9 hours. Filtration, reaction engineering, two-phase flow, non-Newtonian fluids, interfacial phenomena, fluidization, novel separations, biomedical engineering.

596 Research Methods and Presentation I 2 Pre-requisite: grad. standing. Establish sound practices for graduate research and presentation of results; techniques used for performing through literature searching and establishing and testing research hypotheses.

597 Research Methods and Presentation II 2 Pre-requisite: grad. standing. Establishing sound practices for presentation of research programs and research results.

598 Research Seminar I 1 May be repeated for credit. Seminar presentations on current topics in chemical engineering research. S, F grading.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Chemistry


Chemistry is the fundamental science of matter, the nature of substances, and the changes occurring in them. Chemical reactions are the basis of all life on Earth. Everything we are or do depends in one way or another on chemistry. A major in chemistry prepares you for a variety of careers in industry, education, ecology, and public service, or for graduate study and research in chemistry and many related fields.

The department has excellent facilities and special equipment for study and research at both the undergraduate and graduate level. There are active research programs in both traditional and emerging areas of chemistry. Students in chemistry at WSU are encouraged to take advantage of its excellent facilities and faculty by beginning research projects as early as possible. Research expands experience beyond the classroom into the realm of new knowledge. Typical areas for research are:

Analytical chemistry, which focuses on the identification and measurement of chemical species wherever they are found. It involves the development and application of new methods of detection and measurement, the application of analytical methods in biological environments, and the use of nuclear and radio-chemical techniques in a wide range of applications.
Minor in Chemistry
Completion of a minor in chemistry requires at least 17 hours from 200-level and above chemistry courses. Three hours from MBioS 303, 304, 513, or 514 and up to 2 hours of Chem 499 may be used to satisfy this requirement.

LAB CHARGES
A charge for expendable laboratory supplies is made in each laboratory course.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

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

A student undertaking this curriculum after the beginning of the freshman year should consult with the department undergraduate coordinator to arrange a schedule which will permit completion of required courses in proper sequence. Course sequencing is particularly important in this option for physical chemistry (Chem 331 and 332). Calculus through multivariable calculus (Math 273) and calculus-based physics (Phys 201 and 202) are essential preparation for physical chemistry. This curriculum leads to a degree for which students will be certified to the American Chemical Society.

GENERAL CHEMISTRY OPTION

Freshman Year

First Semester
Chem 105 [P] (GER) or 1151 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 171 [N] (GER) 4
Elective 1

Second Semester
Biol 102 [B] or 103 [B] (GER) 4
Chem 106 [P] (GER) or 1161 4
GenEd 111 [A] (GER) 3
Math 172 4

Sophomore Year

First Semester
Arts & Humanities [H,G] (GER) 3
Chem 340 3
Chem 341 2
Math 273 2
Phys 201 [P] (GER) 4
Elective 1

Second Semester
Chem 342 3
Cpt S 203 2
Math 220 2
Phys 202 [P] (GER) 4

Junior Year

First Semester
Arts & Humanities [H,G], Intercultural [I,G,K] or Social Sciences [S,K] (GER) 6
Chem 220 2
Chem 222 2
Chem 330 1
Chem 331 3
Chem 333 1
Chem 398 1
Complete Writing Portfolio

Second Semester
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Chem 332 3
Chem 334 [M] 1
Chem 499 2
Engl 301 [W] or 402 [W] (GER) 3
Intercultural [I,G,K] (GER) 3

Senior Year

First Semester
Chem 425 2
Chem 426 2
Chem 499 2
Tier III Course (GER) 3
Electives 6

Second Semester
Chem 4012 3
Chem 410 [M] 3
Chem 495 2
Chem Electives3 3
MBioS 303 4

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 Offered alternate years only. Students may take this course during the second semester of their junior year.
3 Electives must include 3 hours of advanced chemistry courses based on physical (Chem 332) or organic (Chem 340) chemistry. The following chemistry courses meet this requirement: Chem 415, 421, 422, 424, 427, 430, 461, 480, 481, 482, 490, as does any 500-level chemistry course. Up to 3 hours of MBioS 303 or a 300-level course in Math or Physics may be used to meet this requirement upon permission from the associate chair.

ENVIRONMENTAL CHEMISTRY OPTION

Students completing this curriculum will not be certified to the American Chemical Society. Students wishing to be certified to the American Chemical Society with a specialization in environmental chemistry should take Chem 481 and 482 as electives in the curriculum above and should take 3 hours of biology or geology beyond that specified above.

Freshman Year

First Semester
Biol 103 [B] (GER) 4
Chem 105 [P] (GER) or 115 4
Engl 101 [W] (GER) 3
Math 107 4
Elective 1

SECOND SEMESTER

Chem 106 [P] (GER) or 1161 4
GenEd 111 [A] (GER) 3
Math 172 4

Sophomore Year

First Semester
Arts & Humanities [H,G] (GER) 3
Chem 340 3
Chem 341 2
Math 273 2
Phys 201 [P] (GER) 4
Elective 1

Second Semester
Chem 342 3
Cpt S 203 2
Math 220 2
Phys 202 [P] (GER) 4
### Second Semester

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<tr>
<td>Chem 106 [P] (GER) or Chem 116</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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### Sophomore Year

#### First Semester

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<td>Math 140 [N] (GER)</td>
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<td>Phys 101 [P] (GER)</td>
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#### Second Semester

<table>
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<td>Chem 222</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>NATRS 303</td>
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<td>Phys 102 [P] (GER)</td>
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### Junior Year

#### First Semester

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<tr>
<td>Chem 338</td>
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<td>Chem 398</td>
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#### Second Semester

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</tr>
<tr>
<td>Chem 481 [M]</td>
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### Senior Year

#### First Semester

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<td>Chem 425</td>
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<tr>
<td>Chem 426</td>
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</tr>
<tr>
<td>Chem 482 [M]</td>
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<tr>
<td>Engl 402 [W] (GER)</td>
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<td>Intercultural [L,G,K] (GER)</td>
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<td>Science Electives²</td>
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#### Second Semester

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<td>Chem 415</td>
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<td>Chem 416</td>
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<tr>
<td>Chem 489</td>
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<tr>
<td>Science Elective²</td>
<td>1</td>
</tr>
<tr>
<td>Tier III Course (GER)</td>
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</tbody>
</table>

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1. Chem 340 and 341 may be substituted.
2. Math 171 may be substituted.
3. Phys 201 and 202 may be substituted.
5. Offered alternate years only. Students may take this course during the second semester of the junior year.

### Preparation for Graduate Study

As preparation for work toward an advanced degree, it is expected that the student shall have completed courses totaling 40 semester hours of chemistry including inorganic, qualitative, quantitative, organic, and physical chemistry. The student should also present 8 hours of physics and mathematics through calculus. It is desirable that students interested in inorganic, analytical, or physical chemistry prepare advanced courses in chemistry, computer science, mathematics, or physics; advanced biological science courses are important preparation for students who propose to undertake graduate study in the field of biochemistry.

### Biochemistry

For course descriptions and schedule of studies in biochemistry, see the School of Molecular Biosciences.

### Description of Courses

#### General and Inorganic Chemistry

**Chem 101** [P] *Introduction to Chemistry* 4 (3-3) Prereq math placement beyond Math 103 or c/. Basic chemical concepts; atomic theory, periodicity, reaction stoichiometry, gases, solutions, acids, bases, pH, equilibrium, kinetics, energy, applications to life sciences.


**Chem 105** [P] *Principles of Chemistry I* 4 (3-3) Prereq one year high school chemistry or Chem 101; Math 107 or c/. Stoichiometry, structure, gases, liquids, solids, solutions, thermodynamics, kinetics, equilibrium, volumetric, and gravimetric analysis. Credit not granted for both Chem 105 and 115.

**Chem 106** [P] *Principles of Chemistry II* 4 (3-3) Prereq Chem 105 or 115 with a grade of C or better; Math 107 with a C or better or placement into Math 140 or higher. Acid-base, ionic, molecular, solubility, oxidation/reduction equilibria; kinetics, electrochemistry; systematic chemistry of the elements; coordination compounds. Credit not granted for both Chem 106 and 116.

**Chem 115** [P] *Chemical Principles Honors I* 4 (3-3) Prereq permission of dept; two years high school chemistry or one year Chem and one year Phys; Math 140 or 171 or c/. Stoichiometry, bonding, structure, gases, liquids, solids, solutions, thermodynamics, chemical reactions, analysis, spreadsheets in chemistry. Credit not granted for both Chem 115 and 105.

**Chem 116** [P] *Chemical Principles Honors II* 4 (3-3) Prereq Chem 115 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.

**Chem 150** [Q] *Molecules and Science* 5 (2-3) Chemical basis and molecular structure of everyday materials; polymers, medicines, etc.
350 [P] Chemistry in Contemporary Society 4
(3-3) Prereq junior standing. Principles and applications of chemistry in the context of contemporary society.

401 Modern Inorganic Chemistry 3 Prereq Chem 332 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 (1-0) Synthesis and characterization of organic and inorganic compounds and solid-state materials; modern synthetic technology, characterization methods, and laboratory techniques.

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.


503 Advanced Topics in Inorganic Chemistry V 1-3 May be repeated for credit. Rec Chem 501. Recent significant developments. Cooperative course taught by WSU, open to UI students (Chem 503).

504 Organometallic Chemistry 3 Prereq Chem 501. Structure, bonding, and reaction chemistry of organotransition metal compounds; applications to homogenous catalysis. Cooperative course taught by UI (Chem 506), open to WSU students.

507 Topics in Coordination Chemistry 3 Rec Chem 501. Principles, complex ions and coordination compounds; theory of acids and bases; bonding theory, nonaqueous solvent; familiar elements; periodicity. Cooperative course taught by UI (Chem 564), open to WSU students.

508 Topics in Inorganic Chemistry V 1-9 Rec Chem 501. Coordination compounds; halogens; less familiar elements; cathate, interstitial, nonstoichiometric compounds; chemical bonding; inorganic reaction mechanisms. Cooperative course taught by UI (Chem 565), open to WSU students.


Analytical, Environmental, and Radiochemistry

Chem

220 Quantitative Analysis 2 Prereq Chem 106, or Chem 116; Rec c// in Chem 222. Theories of quantitative chemical analysis; statistical evaluation of data; chemical equilibrium; volumetric and gravimetric method 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.

415 Trace Element Analysis 2 Rec Chem 425. Techniques for the analysis of inorganic materials at trace levels. Credit not granted for both Chem 415 and 515.

416 Trace Organic Analysis 2 Rec Chem 425. Methods for the determination of trace amounts of organic compounds. Credit not granted for both Chem 416 and 516.

421 Radiochemistry and Radiotracers 2 Prereq Chem 331. Credit not granted for both Chem 421 and 521.

422 Radiochemistry Laboratory 1 (0-3) Prereq Chem 222, 331; Phys 202. Credit not granted for both Chem 422 and 522.

424 Activation Analysis 2 (1-3) Prereq Chem 331 or 421. Credit not granted for both Chem 424 and 524.

425 Quantitative Instrumental Analysis 2 Prereq Chem 332 or c//, or Chem 336 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 or c//. Laboratory experience in modern analytical methods.


482 [M] Environmental Chemistry II 3 Prereq Chem 481 or 581. Chemistry and reactions of natural and pollutant species on the aquatic environment, sediments and soils. Credit not granted for both Chem 482 and 582.

489 Environmental Chemistry Project 2 (0-6) Prereq Chem 482. Laboratory projects in environmental chemistry or environmental analytical chemistry.

512 Bioanalysis 2 Rec Chem 220 or 425. Methods for the measurement of biological compounds.


515 Trace Element Analysis 2 Graduate-level counterpart of Chem 415; additional requirements. Credit not granted for both Chem 415 and 515.

516 Trace Organic Analysis 2 Graduate-level counterpart of Chem 416; additional requirements. Credit not granted for both Chem 416 and 516.

517 Chromatography 2 Prereq Chem 425.

518 Electrochemistry 2 Prereq Chem 425.

520 Advanced Analytical Chemistry 3 Prereq Chem 425. Statistics in chemical analysis; sampling; control of contamination and losses in analysis; electrochemical methods; separation in analysis; spectroscopic techniques.

521 Radiochemistry and Radiotracers 2 Graduate-level counterpart of Chem 421; additional requirements. Credit not granted for both Chem 421 and 521.

522 Radiochemistry Laboratory 1 (0-3) Graduate-level counterpart of Chem 422; additional requirements. Credit not granted for both Chem 422 and 522.

524 Activation Analysis 2 (1-3) Graduate-level counterpart of Chem 424; additional requirements. Credit not granted for both Chem 424 and 524.

527 Environmental Chemistry 2 Graduate-level counterpart of Chem 427; additional requirements. Credit not granted for both Chem 427 and 527.

529 Selected Topics in Analytical Chemistry V 1-3 May be repeated for credit. Selected current developments. Cooperative course taught by WSU, open to UI students (Chem 525).

581 Environmental Chemistry I 3 Prereq graduate standing. Graduate-level counterpart of Chem 481; additional requirements. Credit not granted for both Chem 481 and 581.

582 Environmental Chemistry II 3 Prereq Chem 581. Graduate-level counterpart of Chem 482; additional requirements. Credit not granted for both Chem 482 and 582.

Physical Chemistry

Chem

330 Problem Solving in Physical Chemistry I 1 Prereq Chem 106 or 116; Math 172. Quantitative methods of data analysis and chemical concept development; emphasis on multivariable, matrix, and computer methods.

331 Physical Chemistry 3 Prereq Math 172; Phys 202 c// in Chem 333. Concepts of physical chemistry; basic thermodynamics, free energy and entropy; phase equilibria; properties of solutions of electrolytes and non-electrolytes.

332 Physical Chemistry 3 Prereq Chem 331. Elementary quantum theory; molecular structure and spectra; bonding theory; reaction rates; photochemistry and radiation chemistry; energy states and statistical thermodynamics.

333 Physical Chemistry Laboratory I 1 (0-3) Prereq Chem 331 or c//. Experiments selected to meet the individual needs of students in BC/BR, Biol, C E, Chem, or MSE.


336 Classical Physical Chemistry 2 Prereq Chem 331. 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. Physical chemistry for students in the environmental and biological sciences; emphasis on results and applications of physical chemical principles.


461 Atomic and Molecular Phenomena 3 Prereq Chem 332, Math 273. Basic concepts of atomic structure and spectroscopy; quantum mechanics of atomic phenomena. Credit not granted for both Chem 461 and 561.

480 Solid State Chemistry 3 Prereq Chem 332. Properties, bonding and synthesis of solid state material; crystalline and amorphous solids and coatings.

499 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.

531 Advanced Physical Chemistry 3 Rec Chem 332. Physical chemistry; quantum mechanics, thermodynamics, chemical bonding, and electrochemistry.
Advanced Physical Chemistry 3 Rec Chem 332. Methods of quantum chemistry, atomic and molecular structure and spectra, chemical bonding, statistical mechanics, and kinetic theory, chemical kinetics.

Chemical Statistical Mechanics 3 Rec Chem 531, 532. Statistical theory of thermodynamic variables and chemical equilibrium; calculation of equilibrium properties from spectral data; fluctuation about equilibrium; quantum statistics.

Computational Quantum Chemistry 3 Rec Chem 332 or Phys 303. Computer simulation of chemical behavior using latest methods; theory and practice of quantum chemistry.

Quantum Chemistry 3 Rec Chem 332 or 531. Quantum mechanics applied to chemical systems: states of atoms and molecules, transitions and spectra.

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).

Atomics and Molecular Phenomena 3 Graduate-level counterpart of Chem 461; additional requirements. Credit not granted for both Chem 461 and 561.

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.

Organic Chemistry


340 Organic Chemistry I 3 (2-2) Prereq Chem 106 or 116. Structure and function in organic chemistry; reaction mechanisms; molecular orbital theory; alkanes, alkenes, alkydes, and aromatics; problem solving skill development. Credit not granted for both Chem 340 and 240.

341 Organic Chemistry Laboratory 2 (0-6) Prereq Chem 340.


343 Organic Chemistry Laboratory 2 (0-6) Prereq Chem 342 or c/.

345 Organic Reaction Mechanisms 3 Rec Chem 331, 342. The major classes of organic reaction mechanisms and their significance; kinetics and introductory theory.


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).

Spectroscopic Identification of Organic Compounds V 1-3 May be repeated for credit; cumulative maximum 3 hours. Rec Chem 342. Structural interpretation of 1H and 13C NMR, vibrational and mass spectra of organic compounds; audio-tutorial.

Chemistry for Teachers

Chem 411 General Chemistry from an Advanced Point of View 3 Prereq one year chemistry. Quantitative aspects of chemistry; first law of thermodynamics, solution theory, equilibrium, kinetics; electrochemistry and redox reactions; Precy per credit. Introduction to research and advanced laboratory methods; practice in written and oral scientific communication.

500 Special Topics in Physical Chemistry and Radioactive Waste Management V 1-3 May be repeated for credit; cumulative maximum 6 hours. Precy per credit. Introduction to the fundamental chemistry of the nuclear industry, chemical processing and waste management.

Teaching Chemistry 1 Teaching chemistry; some workshops for new graduate teaching assistants in chemistry focusing on tutorials and labs.

Introduction to Research Topics 1 Presentation and description of research areas and projects of current interest to faculty.

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.

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.

Seminar in Physical Chemistry 1 May be repeated for credit; cumulative maximum 6 hours. Presentation and discussion of topics in physical chemistry taken from research in progress or current literature.

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.

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

Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Civil and Environmental Engineering

Professor and Department Chair, M. G. Katona; Professors, D. A. Bender, K. J. Fridley, R. Y. Itani, B. K. Lamb, D. I. McLean, G. H. Mount, R. J. Watts, H. H. Westberg, D. R. Young; Associate Professors, M. E. Barber, C. S. Claiborn, W. F. Cofer, R. H. Hotchkiss, B. Muhunthan, A. T. Symans.

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.

Effective Spring 2000, all seniors will be 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 and (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.

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Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

All students completing the schedule of studies below earn a Bachelor of Science degree in Civil Engineering. 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.

**CIVIL ENGINEERING DEGREE PROGRAM (129 HOURS)**

**Freshman Year**

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<td>Math 171 [N] (GER)</td>
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**Second Semester**

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**Sophomore Year**

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<td>Math 220</td>
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<td>Math 273</td>
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**Second Semester**

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**Junior Year**

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<td>C E 330</td>
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<td>C E 341</td>
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**Second Semester**

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**Senior Year**

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**Second Semester**

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Departments of Regional Planning.

**The Alternate Senior Year Environmental Engineering Emphasis**

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.

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**Senior Year**

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[4] 3

[5] 2,3

[6] 3

[7] 2,3

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98
Civil Engineering

C E

120 Innovation in Design 2 Same as M E 120.

174 Introduction to Meteorology and the Atmospheric Environment 3 Introduction to meteorology, the atmospheric processes; weather, air pollution, and environmental topics.

211 Statics 3 Prereq Math 172 or c/c; Phys 201 or c/c. Engineering mechanics concepts; force systems; static equilibrium; centroids, centers of gravity; shear and moment diagrams; friction; moments of inertia. Cooperative course taught jointly by WSU and UI (Engr 210).

215 Mechanics of Materials 3 Prereq C E 211. Concepts of stress, strain, and their relationships; axial loads, torsion and bending; combined stress; properties of materials; columns, repeated loadings. Cooperative course taught jointly by WSU and UI (Engr 350).

Surveying for Engineers 3-2) Prereq M E 103; Math 171. Basic principles for using instruments and other equipment in conducting engineering surveys; analyses of errors in measurements; mathematical theories for horizontal and vertical highway curves.


317 [M] Geotechnical Engineering 3 2-3) Prereq C E 215, 313 or c/c. Structure, index properties, and classification of soils; compaction; effective stress; seepage; consolidation and shear strength.

322 Transportation Engineering 3 Prereq C E 260 or c/c; 301. Transportation engineering; demand and performance functions; geometric design; capacity and control of transport modes.

330 Introduction to Structural Engineering 3 Prereq C E 215; Math 220. Introduction to structural analysis and design; statically determinate systems; deflections; structural loads; design philosophies.

341 Introduction to Environmental Engineering 3 Prereq Biol 103 or M/BiS 101; Chem 105. Impact of pollutants on the environment; pollution sources and sinks; engineering aspects of air and water pollution, pollution reduction, and pollution control.

351 Water Resources Engineering 3 Prereq C E 315. Application of fluid mechanics to hydraulic infrastructure, principles of open channel flow, and introduction to surface and ground water hydrology.

400 Highway Materials Engineering 3 2-3) Prereq senior standing. Basic properties and mix designs of aggregates, asphalt, concrete and recycled materials; quality assurance, quality control.

401 [T] Global Climate Change 3 Prereq completion of one Tier I and three Tier II courses. Basic atmospheric processes; atmospheric change and climate change; global warming; impacts on society and science policy.

403 Environmental Geology 3 Same as Geol 403.

405 Geophysics 4 3-3) Same as Geol 405.

408 Air Pollution Control Engineering 3 Prereq senior in Engr or Ph. S. Measurement and control of air pollution; engineering design calculations; equipment and process. Cooperative course taught jointly by WSU and UI (Ch E 575). Credit not granted for both C E 408 and 508.

410 Experimental Methods in Geotechnical Engineering 3 1-6) Prereq C E 317. Experimental methods of evaluating geotechnical engineering properties including shear strength, stress/strain behavior, time-dependent behavior, and permeability. Credit not granted for both C E 410 and 510.

414 Structural Design Laboratory 3 1-6) Prereq C E 431, 433 or c/c. Senior lab requiring integration of previous course work into the execution of design projects and the assessment of experimental test data.

415 Environmental Measurements 3 1-6) Prereq C E 341. 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. 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. Cooperative course taught by WSU, open to UI students (CE 435). Credit not granted for both C E 418 and 518.

419 Hazardous Waste Treatment 3 Prereq C E 418. Principles of operation and application of processes in design of technologies used in hazardous waste treatment and remediation. Credit not granted for both C E 419 and 519.

425 Soil and Site Improvement 3 Prereq C E 317. Compaction theory and methods; deep densification of soils; advanced consolidation theory, preloading, vertical drains, chemical stabilization, grouting; design with geosynthetics. Credit not granted for both C E 425 and 525. Cooperative course taught by WSU, open to UI students (CE 567).

430 Analysis of Indeterminate Structures 3 Prereq C E 330. Classical and matrix-stiffness methods for the analysis of trusses, beams, and frames; computer applications.

431 Structural Steel Design 3 Prereq C E 330. Design of steel structures by load and resistance factor design (LRFD); behavior and design of beams, columns, tension members and connections.

433 Reinforced Concrete Design 3 Prereq C E 330. Behavior, analysis, and design of reinforced concrete structures; flexure; shear, bond; serviceability requirements; design of beams, columns, and slabs.

434 Prestressed Concrete and Reinforced Masonry Design 3 Prereq C E 433. Behavior, analysis, and design of prestressed 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. 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 Prereq C E 330. Engineering properties of wood products; analysis and design connection details, durability and moisture effects; lumber, plywood, glue-laminates, poles, adhesives. Cooperative course taught by WSU, open to UI students (CE 443).
442 Water and Wastewater Treatment Design  
3 Prereq C E 341; major in Engr or Env S. Water and wastewater treatment processes and design.

450 Hydraulic Engineering Design  
3 Prereq C E 351. Hydraulic design and planning of facilities associated with gravity controlled and pressurized flow. Cooperative course taught jointly by WSU and UI (CE 422).

451 Open Channel Flow  
3 Prereq C E 315. 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.

466 [M] Integrated Civil Engineering Design 3  
(1-6) Prereq senior in C E. Civil engineering applications to planning and design; problem synthesis, data analysis, decision making and reporting.

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 C E 471 and 571.

473 Pavement Design  
3 Prereq C E 215, 317; Econ 101 or 102, Math 360; c/l 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) Same as Geol 475.

480 [M] Ethics and Professionalism 1  
Prereq senior status. Professional aspects of civil engineering.

495 Engineering Internship  
V 1-4 May be repeated for credit; cumulative maximum 4 hours. By interview only. Placement in a professional, governmental, or industrial situation for specialized or general experience. S, F grading.

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).

506 Design and Construction of Water Wells 3  
Analysis of geologic and engineering factors important in design, construction, and maintenance of water wells. Cooperative course taught by UI (Hydr 575), open to WSU students.

507 Seepage and Earth Dams 3  
Principles of earthdam design, failures, considerations in construction; principles governing flow of water through soils. Cooperative course taught by UI (GeoE 535), open to WSU students.

508 Air Pollution Control Engineering 3  
Prereq graduate standing. Graduate-level counterpart of C E 408; additional requirements. Credit not granted for both C E 408 and 508.

509 Numerical Modeling of Geomaterials 3  
Prereq graduate geoengineering-related field, or by interview only. Modeling of the response of geomaterials to changes in imposed stresses or strains under both static and dynamic conditions.

510 Experimental Methods in Geotechnical Engineering 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, geotechnical earthquake engineering, theoretical soil mechanics, numerical methods in soil mechanics, and geohydrology, engineering geology, cold regions geoenvironmenting. Cooperative course taught jointly by WSU and UI (CE 423).

512 Dynamics of Structures 3  
Equations of motion, free vibration, damping mechanisms, harmonic response, complex 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) Graduate-level counterpart of C E 415; additional requirements. Credit not granted for both C E 415 and 515.

516 Unsteady Closed-Conduit Flow 3  
Prereq C E 351. Derivation of governing equations; finite difference methods; boundary characteristics; boundary conditions; computational procedures; transients caused by centrifugal pumps.

517 Unsteady Open-Channel Flow 3  
Prereq C E 451. Derivation of governing equations; explicit and implicit finite difference methods; computational procedures; stability and convergence.

518 Hazardous Waste Engineering 3  
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.

521 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).

525 Soil and Site Improvement 3  
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; interrelations of applied stresses, permeability, strain and shear strength of soils. Cooperative course taught by UI (CE 561), open to WSU students.

528 Advanced Foundation Engineering 3  
Prereq C E 317. Consolidation theories, bearing capacity, and settlements of foundations, pile group behavior, theory of subgrade reaction, materials foundations, laterally loaded piles. Cooperative course taught by UI (CE 562), open to WSU students.

529 Soil Dynamics 3  
Prereq graduate standing. Vibration theory; analysis of machine vibrations; wave propagation through soils; dynamic loading of soils; liquefaction. Cooperative course taught by UI (CE 565), open to WSU students.

531 Probabilistic Methods in Structural Design 3  
Probabilistic structural analysis and design; probabilistic characterization of material properties and load combinations (dead, live, earthquake, wind); LRFD structural design. Cooperative course taught jointly by WSU and UI (CE 445/545).

532 Finite Elements 3  
Theory of finite elements; applications to general engineering systems considered as assemblies 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 454 and 534. Cooperative course taught by WSU, open to UI students (CE 442).

535 Advanced Finite Elements 3  
Prereq graduate standing. Advanced topics in finite elements. Plate and shell analysis; nonlinear solution methods for finite strain/rotation and nonlinear materials.

536 Nondestructive Testing of Structural Materials 3  
Principles of nondestructive testing applied to wood-based materials, steel, concrete, and masonry. Cooperative course taught by WSU, open to UI students (ForP 535).

537 Advanced Topics in Structural Engineering 3  
May be repeated for credit; cumulative maximum 6 hours. Elastic stability, plates and shells, other relevant topics. Cooperative course taught by WSU, open to UI students (CE 542).

538 Earthquake Engineering 3  
Prereq C E 512. Seismology, size of earthquakes, seismic ground motion, seismic risk, behavior of structures subjected to earthquake loading seismic response spectra, seismic design codes, lateral force-resisting systems, detailing for inelastic seismic response.
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 electro-metric, spectrophotometric, and chromatographic techniques. Cooperative course taught by WSU, open to UI students (CE 551).

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 441; Math 315. Principles and design of physical and chemical unit operations of water and wastewater treatment systems. Cooperative course taught jointly by WSU and UI (CE 531).

543 Advanced Topics in Environmental Engineering Practice V 1-4 May be repeated for credit; cumulative maximum 8 hours. Analysis and evaluation of air/water/soil pollution problems, new measurement methods, hazardous waste treatment, global climate change, and water/wastewater treatment design. Cooperative course taught jointly by WSU and UI (CE 534).

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 6 hours. Analysis and evaluation of natural water systems for retention and transport of pollutants and their associated impacts.

550 Intermediate Fluid Mechanics 3 Prereq C E 315. Basic flow equations; Navier-Stokes equations; similitude, potential flow, boundary layers, turbulence, and diffusion; uniform and non-uniform conduit flow; drag and lift. Cooperative course taught by WSU, open to UI students (CE 525).

551 Open Channel Flow 3 Graduate-level counterpart of C E 451; additional requirements. Credit not granted for both C E 451 and 551.

552 Advanced Topics in Hydraulic Engineering V 1-3 May be repeated for credit; cumulative maximum 6 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).

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.

560 Advanced Hydrology 3 Graduate-level counterpart of C E 460; additional requirements. Credit not granted for both C E 460 and 560.

561 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).

562 Water Resources Planning 3 Prereq C E 351. Design and feasibility studies in water supply, power, flood problems, navigation, irrigation, recreation. Cooperative course taught jointly by WSU and UI (CE 524).

564 Applied Traffic Operations 3 Prereq C E 322 or instructor approval. Fundamentals of traffic operations needed to prepare a desing or evaluation of a signalized or unsignalized intersection.

565 Transportation Planning 3 Prereq by permission only. Concepts and methods of transportation planning, including network modeling, travel demand forecasting, and systems evaluation of multi-modal transportation systems.

566 Pavement Management and Rehabilitation 3 Prereq C E 322. Basics of pavement management systems development and implementation.

567 Advanced Characterization of Highway Materials 3 Basic and advanced level of the fundamentals of material response to static and repeated loading; emphasis on the deformation and fatigue behavior of asphalt mixtures.

569 Field Methods in Hydrogeology 2 (1-3) Same as Geol 569.

571 Meterology 3 Graduate-level counterpart of C E 471; additional requirements. Credit not granted for both C E 471 and 571.

572 Advanced Pavement Analysis 3 Prereq C E 474. Fundamentals of pavement-vehicle interaction and the mechanics of pavement response and damage.

573 Air Pollution Abatement and Administration 2 Air quality management, criteria, and standards; administration of air pollution Department of Civil and Environmental Engineering control agencies; enforcement, inspection and surveillance. Cooperative course taught by WSU, open to UI students (CE 552).


577 Advanced Groundwater Hydraulics 3 Prereq Geol 475; Math 315. Modeling of subsurface flow in saturated, unsaturated, and multilithic systems; analytic and numerical solutions techniques; review of statistical geohydrologic methods.

579 Groundwater Geochemistry V 2-4 May be repeated for credit; cumulative maximum 4 hours. Same as Geol 579.

580 Graduate Seminar 1 May be repeated for credit; cumulative maximum 2 hours. Lectures and reports on current developments in research and practice.

581 Environmental Engineering Analysis 2 (1-3) Prereq C E 541. Theoretical and laboratory methods for development of design criteria for environmental systems. Cooperative course taught by WSU, open to UI students (CE 534).

583 Engineering Aspects of Environmental Chemistry V 2-4 Prereq C E 442. Chemical principles as applied to water supply and pollution control engineering. Cooperative course taught by WSU, open to UI students (CE 553).

584 Environmental Microbiology V 2 (1-3) or 3 (1-6) Prereq C E 583. Current techniques in environmental engineering and science used to assess the biological quality, structure, and function of ecosystems, and microbial diversity of air, terrestrial, and aquatic environments. Cooperative course taught by WSU, open to UI students (CE 538).

585 Aquatic System Restoration 3 (2-3) Prereq Chem 240 or CE 583; MBioS 101 or C E 581. Study of natural and damaged water systems with emphasis on water quality protection and restoration.

586 Bioremediation of Hazardous Waste 3 Prereq C E 584. Applications of bioremediations to in situ subsurface treatment of hazardous waste; subsurface microbial degradation as related to microbial ecology.

588 Atmospheric Turbulence and Air Pollution Modeling 3 Prereq C E 571. Physical aspects of atmospheric turbulence, theoretical developments in atmospheric diffusion, and applied computer modeling with regulatory and research models.

589 Atmospheric Chemical and Physical Processes 3 Processes of removal of pollutants from the atmosphere; radical chain reactions, particle formation, model calculations.

590 Spectroscopy and Radiative Transfer of the Atmosphere 3 Prereq by interview only. Concepts of radiative transfer and molecular spectra in the troposphere and stratosphere with applications to trace gas measurements.

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

700 Master’s Research, Thesis and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Edward R. Murrow School of Communication


Communication is a vital force in society. New practices and techniques in communication require that instruction and research explain these phenomena and prepare students to take their place in this field. The curricula of the Edward R. Murrow School of Communication lead to the degrees of Bachelor of Arts in Communication and Master of Arts in Communication. The school also participates in the university’s interdisciplinary Ph.D. program. Students may major communication, with an emphasis in advertising, applied intercultural communication, broadcasting, broadcast management,
Freshman Year

communication studies, journalism, media and the law, organizational communication, or public relations. Students may also fashion a general communication curriculum. The undergraduate program reflects a blending of professional, liberal arts, and theory and research courses.

Students in newspaper journalism and communication studies may prepare for teacher certification through the Department of Elementary and Secondary Education. The School also cooperates with the College of Agriculture and Home Economics in support of the agricultural communications option.

Supplementing the classrooms and laboratories of the Murrow School are the professional internship program, campus radio and television facilities, and student publications, including a daily newspaper.

Certification Requirements

To certify a major in communication, a student must meet the following minimum requirements: (1) Complete Com 101, 245, 270, 295 and ComSt 102; (2) Earn a cumulative g.p.a. of 2.5 in all WSU courses; (3) Earn a cumulative g.p.a. of 2.7 in Com 245, 270, and 295; (4) Earn a grade no lower than C in Com 295. Students transferring into the department with 55 or more hours should complete the certification requirements within two semesters. All students should certify before earning 90 credit hours.

General School Requirements

Each student will complete the requirements of one of the following sequences and accumulate an emphasis of 18 hours (9 300-400-level hours) in a second department. At least 75 of the 120 hours required for the Bachelor of Arts degree in Communication must be taken in other departments. Transfer students, in meeting the requirements of their chosen sequence, must take a minimum of 15 credit hours in the school.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

All degree programs require a minimum of 39 semester hours in communication. Students have three options to meet the enrichment/internship requirements: 6 hours of internship credit; 3 hours of internship credit and 3 of communication literacy or development courses; or 3 hours of communication literacy and 3 of development courses.

First Year Requirements

The first year requirements are common to all communications degree programs:

**Freshman Year**

**First Semester**

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**Second Semester**

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**Sophomore Year**

**First Semester**

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**Second Semester**

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**Junior Year**

**First Semester**

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**Second Semester**

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**Senior Year**

**First Semester**

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**Second Semester**

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**Junior Year**

**First Semester**

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<tr>
<td>B Law 210 or Dec S 360</td>
<td>3</td>
</tr>
<tr>
<td>Bcst 355 or 365 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Com 415, satisfies Com Development</td>
<td>3</td>
</tr>
<tr>
<td>Mktg 360</td>
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<thead>
<tr>
<th>Senior Year</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>Bcst 455 or 465 [M]</td>
</tr>
<tr>
<td>Econ 320, 340, or Fin 325</td>
</tr>
<tr>
<td>Com Literacy (for Enrichment)</td>
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<tr>
<td>Emphasis Elective</td>
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<tr>
<td>Seminar [M]</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Com 409, satisfies Com Development</td>
<td>3</td>
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<tr>
<td>Com 440, satisfies Com Literacy</td>
<td>3</td>
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<tr>
<td>Com Development (for Enrichment)</td>
<td>3</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>6</td>
</tr>
<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
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</tbody>
</table>

Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.

For Broadcast News degree program, take Bdcst 365 [M]; for Broadcast Production, take Bdcst 355.

Any seminar numbered 475 in communication.

**COMMUNICATION STUDIES DEGREE PROGRAM (120 HOURS)**

<table>
<thead>
<tr>
<th>Sophomore Year</th>
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<tbody>
<tr>
<td>First Semester</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>Com 245</td>
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<tr>
<td>Com 295</td>
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<tr>
<td>ComSt 185 or 235</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</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>ComSt 251, 302, or 351</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<th>Junior Year</th>
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<tr>
<td>First Semester</td>
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<tr>
<td>ComSt 324 or 401</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
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<tr>
<td>Emphasis Electives</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level ComSt Elective</td>
<td>3</td>
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<tr>
<td>300-400-level Emphasis Electives</td>
<td>6</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Com Development Elective</td>
<td>3</td>
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<tr>
<th>Senior Year</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>300-400-level Emphasis Elective</td>
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<tr>
<td>Com Literacy Elective</td>
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<tr>
<td>Com Literacy (for enrichment)</td>
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<tr>
<td>Emphasis Elective</td>
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<td>Elective</td>
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<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>Com Development (for enrichment)</td>
<td>3</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>6</td>
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<tr>
<td>Seminar [M]</td>
<td>3</td>
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<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
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</table>

1 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
2 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
3 Any seminar numbered 475 in communication.

**JOURNALISM DEGREE PROGRAM (120 HOURS)**

<table>
<thead>
<tr>
<th>Sophomore Year</th>
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<tr>
<td>First Semester</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Com 245</td>
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<tr>
<td>Com 295</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<tr>
<td>Emphasis Elective</td>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
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<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<th>Junior Year</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>300-400-level Emphasis Electives</td>
</tr>
<tr>
<td>Com 415</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
</tr>
<tr>
<td>Jour 305</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>300-400-level Emphasis Elective</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<tr>
<td>Com Development Elective</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3</td>
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<tr>
<td>Jour 330</td>
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<th>Senior Year</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>Com Literacy (For Enrichment)</td>
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<tr>
<td>Com Literacy Elective</td>
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<tr>
<td>Emphasis Electives</td>
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<tr>
<td>Seminar [M]</td>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Com Development (For Enrichment)</td>
<td>3</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>6</td>
</tr>
<tr>
<td>Jour 425</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
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</table>

1 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
2 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
3 Any seminar numbered 475 in communication.

**MEDIA AND THE LAW DEGREE PROGRAM (120 HOURS)**

<table>
<thead>
<tr>
<th>Sophomore Year</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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</tbody>
</table>

1 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
Edward R. Murrow School of Communication

Com 245 3
Com 295 3
Math Proficiency [N] (GER) 3 or 4
Emphasis in Law1 3

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
Foreign Language, if necessary, or Emphasis in Law2 3
Intercultural [I,G,K] (GER) 3
Physical Sciences [P] (GER) 4
Social Sciences [S,K] (GER) 3

Junior Year
First Semester Hours
300-400-level Electives 6
Com 415 3
Foreign Language, if necessary, or Emphasis in Law2 3
Jour 305 or Bdcst 350 3
Complete Writing Portfolio

Second Semester Hours
300-400-level Elective 3
Biological Sciences [B] (GER) 4
Com Elective4 3
Jour 425 or Bdcst 365 3
Emphasis in Law1 3

Senior Year
First Semester Hours
300-400-level Elective 3
Com Elective or Bdcst 4651,4 3
Com Literacy5 3
Emphasis in Law1 3
Preprofessional Capstone6 or Seminar [M]7 3

Second Semester Hours
300-400-level Elective 3
Com Development8 3
Emphasis in Law1 3
Preprofessional Capstone6 or Seminar [M]7 3
Tier III Course (GER) 3

1 Students must develop an emphasis in law of 18 credits, at least 9 at the 300-400-level, to be allocated in either of two focal areas: Business Law or American Government. The student should consult with a School of Communication, including any communication courses used to satisfy general agricultural requirements. Engineering in cooperation with the School of Communication, including any communication courses used to satisfy general agricultural requirements. Engineering in cooperation with the School of Communication, including any communication courses used to satisfy general agricultural requirements. Engineering in cooperation with the School of Communication, including any communication courses used to satisfy general agricultural requirements. Engineering in cooperation with the School of Communication, including any communication courses used to satisfy general agricultural requirements. Engineering in cooperation with the School of Communication, including any communication courses used to satisfy general agricultural requirements.

2 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.

3 Communication Development Electives: Com 409, 415, 420, 470, 481, ComSt 435, 485, 488.

4 Communication Literacy Electives: Com 410, 440, 450, 460, ComSt 324, 385, 401, Jour 425.

5 Any seminar numbered 475 in communication.

SCHOOL MINORS

Students declaring a minor in communication must choose one of the following sequences and complete a minimum of 18 hours, including 9 300-400-level hours and the required courses: Advertising: Adver 380, 381, 382; Com 295. Broadcasting: Bdcst 350, 475, Com 295, 415. Communication Studies: 18 hours of approved ComSt courses. Journalism: Com 295, 410, 415, Jour 305, 330, 425. Public Relations: Com 295, Jour 305; ComSt 312, 313, 412.

Agricultural Communications

This is a major in the Department of Biological Systems Engineering in cooperation with the School of Communication. The student declaring this major must complete the requirements of the general agricultural curriculum and accumulate a minimum of 30 hours in the School of Communication, including any communication courses used to satisfy general agricultural requirements. Those electing this major should make that decision known as early as possible in their academic careers. Agricultural communications majors must complete the following: Broadcast Media: Bdcst 350, 355, 365; Com 295, 409; P R 312, 313, 412; and 6 elective hours in the School of Communication. Print Media: Com 253, 295, 409; Jour 305; P R 312, 313, 412; and 9 elective hours in the School of Communication. The student should consult with a School of Communication adviser before registering for elective courses. Specialized programs patterned for the individual career aspirations may be developed in conjunction with the head of the School of Communication or a designated representative.

ORGANIZATIONAL COMMUNICATION

DEGREE PROGRAM (120 HOURS)

Sophomore Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Com 245 3
Com 295 3
Math Proficiency [N] (GER) 3 or 4
Emphasis Elective1 3

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
ComSt 324, 325 3
Intercultural [I,G,K] (GER) 3
Physical Sciences [P] (GER) 4
Social Sciences [S,K] (GER) 3

Junior Year
First Semester Hours
300-400-level Emphasis Electives1 6
Jour 305 3
Mktg 360 3
P R 312 3
Complete Writing Portfolio

Second Semester Hours
300-400-level Emphasis Elective1 3
Biological Sciences [B] (GER) 4
Com 409 3
Com Development Elective1 3
P R 313 3

Senior Year
First Semester Hours
Emphasis Electives1 6
Com Literacy (for enrichment) 3
Com Literacy Elective1 3
Seminar5 3

Second Semester Hours
Com Development (for enrichment) 3
Foreign Language, if necessary, or Elective2 6
P R 412 3
Tier III Course (GER) 3

PUBLIC RELATIONS DEGREE PROGRAM
(120 HOURS)

Sophomore Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Com 245 3
Com 295 3
Math Proficiency [N] (GER) 3
Emphasis Elective1 3

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
Foreign Language, if necessary, or Elective2 3
Intercultural [I,G,K] (GER) 3
Physical Sciences [P] (GER) 4
Social Sciences [S,K] (GER) 3

Junior Year
First Semester Hours
300-400-level Emphasis Electives1 6
Jour 305 3
Mktg 360 3
P R 312 3
Complete Writing Portfolio

Second Semester Hours
300-400-level Emphasis Elective1 3
Biological Sciences [B] (GER) 4
Com 409 3
Com Development Elective1 3
P R 313 3

1 Students must develop an emphasis in law of 18 credits, at least 9 at the 300-400-level, to be allocated in either of two focal areas: Business Law or American Government. The student should consult with a School of Communication, including any communication courses used to satisfy general agricultural requirements. Engineering in cooperation with the School of Communication, including any communication courses used to satisfy general agricultural requirements. Engineering in cooperation with the School of Communication, including any communication courses used to satisfy general agricultural requirements. Engineering in cooperation with the School of Communication, including any communication courses used to satisfy general agricultural requirements. Engineering in cooperation with the School of Communication, including any communication courses used to satisfy general agricultural requirements.

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Description of Courses

Enrollment in all 300- and 400-level courses, except GER courses, is limited to certified communication majors or certified majors whose degree programs require these courses.

Intersequence Courses


138 Freshman Special Topics 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

253 Language and Human Behavior 3 Prereq sophomore standing. Theories of language as it influences human behavior in meaning production, problem solving and construction of social reality.

253 Photocommunications 3 (2-3)

270 Introduction to Mass Communication Theory 3 Prereq sophomore standing. Theories of mass communication and how it influences behavior.

295 Media Writing 3 (2-3) Prereq Com 101, 245, 270; typing proficiency. Writing for the media; journalistic and persuasive writing. (The typing proficiency may be waived on an individual basis for otherwise qualified disabled students.)

321 [I] Intercultural Communication 3 Culture and communication.

340 Ethics in Mass Media 3 Application of basic concepts of ethics to media performance in news, advertising and entertainment.

403 Media and the Canadian Experience 3 History, structure, function of Canadian media; multiculturalism, media imperialism, news production, management censorship, freedom of information. Cooperative course taught by U1 (Com 440), open to WSU students.

409 Quantitative Research 3 Measurement, questionnaire construction, sampling, data collection techniques, analysis and hypothesis testing in communication research.

410 History of Mass Communications 3 For seniors and graduate students. Credit not granted for both Com 410 and 510.

415 Law of Mass Communications 3 Prereq senior standing. Credit not granted for both Com 415 and 515.

420 New Communication Technologies 3 Prereq senior standing. New communication technologies, their impact on communication processes, access, regulation, and communication in organization/professional contexts. Credit not granted for both Com 420 and 520.

440 Media Ethics 3 Prereq senior standing. Foundations and frameworks of media ethics; case studies in assessing media performance. Credit not granted for both Com 440 and 540.

450 Mass Media and the First Amendment 3 Prereq senior standing. Theoretical and philosophical bases of press, individual and government interaction centering on First Amendment. Credit not granted for both Com 450 and 550.

453 Advanced Photography 3 (2-3) Prereq Com 253. Portfolio development/directional development of student work; advanced black and white printing techniques.

460 Mass Media Criticism 3 Prereq senior standing. Theoretical and philosophical basis for critical analysis of mass communication. Credit not granted for both Com 460 and 560.

464 Gender and the Media 3 Prereq Com 101 or W St 200. How news and entertainment media shape and reinforce societal expectations of gender; consideration of race, age, class, and sexual orientation.

470 Mass Communications Theories and Theory Construction 3 Prereq senior standing. Theories of mass communication and the process of theory construction.

471 [T,D] Stereotypes and The Media 3 Prereq completion of one Tier I and three Tier II courses. Examines portrayals of social groups in the media and the impact portrayals have on perceptions, expectations, and aspirations of members of portrayed groups and nonmembers.

481 Media Management 3 For seniors and graduate students.

495 Communication Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. By interview only. S, F grading.

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

501 Theory Building in Communications 3 Relationship of research to theory development; evaluation of current theory and research; planning and executing research within specified theoretical frameworks.

504 Instructional Practicum 1 May be repeated for credit; cumulative maximum 4 hours. S, F grading.

509 Quantitative Research 3 Introduction to quantitative research in communication; hypothesis development, testing; basic statistics, interpretation; field surveys, laboratory and field experiments, content analysis.

510 History of Mass Communications 3 Graduate-level counterpart of Com 410; additional requirements. Credit not granted for both Com 410 and 510.

515 Law of Mass Communications 3 Graduate-level counterpart of Com 415; additional requirements. Credit not granted for both Com 415 and 515 requirements.

520 New Communication Technologies 3 Graduate-level counterpart of Com 420; additional requirements. Credit not granted for both Com 420 and 520.

524 Criticism of Public Address 3 Graduate-level counterpart of ComSt 424; additional requirements. Credit not granted for both ComSt 424 and Com 524.

525 Rhetorical Theory 3 Major theories from classical to contemporary; analysis of symbolic action in public, political discourse.

526 Seminar in Classical Rhetoric and Its Influences 3 Same as Engl 509.

538 Seminar in Training and Development 3 May be repeated for credit; cumulative maximum 6 hours. Instructional aspects of training and consultation in organizational communication; team-building, presessional skills, conflict resolution, assessment leadership, group dynamics.

540 Media Ethics 3 Graduate-level counterpart of Com 440; additional requirements. Credit not granted for both Com 440 and 540.

550 Mass Media and the First Amendment 3 Graduate-level counterpart of Com 450; additional requirements. Credit not granted for both Com 450 and 550.

560 Mass Media Criticism 3 Graduate-level counterpart of Com 460; additional requirements. Credit not granted for both Com 460 and 560.

570 Communication Theory 3 Relevant theories and research from mass and interpersonal communication.

572 Mass Media, Social Control, and Social Change 3 Prereq graduate standing. Study of the forces that influence the media’s role as an agent of social control or social change.

580 Topics in Communication 3 May be repeated for credit; cumulative maximum 12 hours. Contemporary, specialized, or technical topics in communication.

585 Interpersonal and Small Group Communication 3 Theory and research in interpersonal and small group communication.

591 Qualitative Research Methods 3 Historical, textual, and legal methodologies for theory-based evaluative and discourse studies in communication.

599 Seminar in Communication 3 May be repeated for credit; cumulative maximum 6 hours. Special topics in rhetoric, communication, and public address.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Advertising

Adver

380 Advertising Principles and Practices 3 Advertising history, theory and practice by advertising agencies and organizations.


382 Media Planning 3 Prereq Adver 380. Media planning theories, strategies, and practices.

475 Seminar in Advertising 3 May be repeated for credit; cumulative maximum 9 hours. Prereq Com 409; for seniors and graduate students.

480 Advertising Agency Operation and Campaigns 3 Prereq Adver 381, 382, Mktg 360. Principles and functions of advertising management: campaign planning, execution, presentation and evaluation. Credit not granted for both Adver 480 and 580.

483 Advertising Research 3 Prereq Adver 380, 383, 382, Com 409, Mktg 360. Professional research practices in advertising.

495 Advertising Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. By interview only. Prereq Adver 381 or 382, Mktg 360. S, F grading.

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

522 Intercultural Processes in the Transnational Context 3 Transnational cultural processes, role of communication in negotiating meanings across borders, identify and difference.

580 Advertising Agency Operation and Campaigns 3 Graduate-level counterpart of Adver 480; additional requirements. Credit not granted for both Adver 480 and 580.

581 Advertising Psychology 3 Prereq graduate standing. Examination of social and cognitive psychological theories which have contributed to the practice of advertising.
582 Advertising Management 3 Prereq graduate standing. Case method approach to appraising market opportunities for the planning, development, implementation, and administration of advertising programs.

Broadcasting
Bdcst

150 Introduction to Broadcast Equipment 1 (0-3) By interview only. Orientation to broadcast equipment; audio, studio television, and field television, as applied to various functions. S, F grading.

350 Introduction to Telecommunications 3 (2-3) Prereq Com 295. Fundamentals of the history, structure, economics and operations of broadcasting and cable.

355 Studio TV Production 3 (1-6) Prereq Bdcst 150, 350.

360 Writing for Television 3 (2-3) Prereq Bdcst 350. Theory and practice of writing scripts: analysis of dramatic, comedic, commercial, documentary scripts; writing scripts for each genre.


485 Field TV Production 3 (1-6) Prereq Bdcst 355. May be repeated for credit; cumulative maximum 6 hours. Field production; editing; advanced studio production.

465 [M] Broadcast News Writing, Reporting, and Editing 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq Bdcst 365. Writing, reporting, and editing broadcast news; development and production of documentaries. Credit not granted for both Bdcst 465 and 565.

466 Advanced Reporting and Documentary 3 (2-3) Prereq Bdcst 465. Advanced writing and reporting for radio or television; feature-length reporting on news and public affairs topics; documentaries. Credit not granted for both Bdcst 466 and 566.

475 [M] Seminar in Broadcasting 3 May be repeated for credit; cumulative maximum 6 hours. By interview only. For seniors and graduate students.

481 Broadcast Management 3 Prereq senior standing. Credit not granted for both Bdcst 481 and 581.

495 Broadcasting Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. Prereq Bdcst 365, 455, or 465. By interview only; S, F grading.

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

565 Broadcast News Writing, Reporting, and Editing 3 (2-3) Graduate-level counterpart of Bdcst 465; additional requirements. Credit not granted for both Bdcst 465 and 565.

566 Advanced Reporting and Documentary 3 (2-3) Graduate-level counterpart of Bdcst 466; additional requirements. Credit not granted for both Bdcst 466 and 566.

581 Broadcast Management 3 Graduate-level counterpart of Bdcst 481; additional requirements. Credit not granted for both Bdcst 481 and 581.

Communication Studies
ComSt


185 Principles of Interpersonal Communication 3 Theory and practice of interpersonal communication; understanding and applying interpersonal information in interpersonal settings.

235 [C] Principles of Group Communication 3 Theoretical and practical aspects of communication in groups; classroom exercises and films demonstrate principles and develop skills.

251 Oral Interpretation of Literature 3 Analyzing and oral reading of prose, poetry, and drama; sharing literature with an audience.

302 [C] Advanced Public Speaking 3 Advanced principles of public speaking and their practical implementation for effective communication.

324 [C,M] Argumentation 3 Theory, analysis and application of written and oral arguments in everyday use.

334 Deliberative Decision-Making 3 Debate; researching the topic, case construction, analysis, and practice debating.

335 Organizational Communication 3 Prereq ComSt 235 or PR 312. Communication theory and organizational functions; communication influences on organizational behavior, managerial effectiveness, corporate culture, organizational power and politics.

351 Advanced Interpretation 3 Voice and dictation; interpretation of copy for broadcast.

385 Advanced Principles of Interpersonal Communication 3 Prereq ComSt 185. Theoretical literature relevant to analyzing relationships; students use this information to analyze a relationship.

401 Persuasion 3 Theories of persuasion and social action; study of strategies and techniques for the persuasive use of language and other symbols.

424 [M] 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 451 and 551.

471 [M] Specialized Writing 3 Prereq Jour 305. Reporting techniques and issues related to specialized media fields.


431 Advanced Editing 3 (2-3) Prereq Adver 381, Jour 330, or PR 312. Advanced copy editing and design techniques; emphasis on visual communication.

475 Seminar in Journalism 3 May be repeated for credit; cumulative maximum 9 hours. For seniors and graduate students.

481 Newspaper Management 3 Senior standing. Credit not granted for both Jour 481 and 581.

495 Journalism Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. By interview only. Prereq Jour 330, 425. S, F grading.

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

525 Reporting of Public Affairs 3 Graduate-level counterpart of Jour 425; additional requirements. Credit not granted for both Jour 425 and 525.

581 Newspaper Management 3 Graduate-level counterpart of Jour 481; additional requirements. Credit not granted for both Jour 481 and 581.

Public Relations
PR

312 Principles of Public Relations 3 Prereq Com 295. 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; PR 312. 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; PR 312, Jour 306 or PR 313. Application of public relations principles, management, persuasion theory and research methods to public relations issues. Credit not granted for both PR 412 and 512.
475 Public Relations Seminar 3 May be repeated for credit; cumulative maximum 9 hours. By interview only. For seniors and graduate students. Theory, methods, and applications of communication and campaign management; political communication, health communication, freedom of expression, special audiences. Credit not granted for both P R 475 and 575.

495 Public Relations Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. Prereq Jour 305, P R 313; by interview only. S, F grading.

499 Special Problems V 1-4 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.

512 Public Relations Management and Campaign Design 3 Graduate-level counterpart of P R 412; additional requirements. Credit not granted for both P R 412 and 512.

575 Seminar in Public Relations 3 Graduate-level counterpart of P R 475; additional requirements. Credit not granted for both P R 475 and 575.

COMMUNITY STUDIES MINOR
See Program in Rural Sociology.

Department of Comparative American Cultures

Professor and Chair, E. San Juan, Jr.; Professors, A. Kuo, J. Peterson; Associate Professors, D. Aguilera, Y. Flores Niemann, S. Fowler, R. Ong; Assistant Professors, K. Ervin, M. Guterl, B. Pinches, T. Schenck, L. Vo; Associate Professor Emeriti, T. Anderson, W. Willard.

The Department of Comparative American Cultures has a distinct function within the larger structure of Washington State University. It has the responsibility for providing the undergraduate student population with the critical understanding that ours is a complex multicultural society, made up of diverse racial and ethnic communities. The overall educational experience provides students with the opportunity to find significance and meaning in living within a complex multiracial and multi-cultural nation.

Comparative American Cultures offers an undergraduate major and minor. The undergraduate major has six different options, all leading to the Bachelor of Arts degree in Comparative American Cultures. Each option introduces students to sophisticated critical analyses of race, ethnicity, and culture. Students choose one of the options within the major, and some may choose to double-major in tandem with another discipline, such as American Studies, anthropology, business, communication, education, English, environmental science, history, political science, psychology, sociology, women's studies, and others. The option in Ethnic Studies is for students who wish to study indepth one particular ethnic group. Students choose among an African American studies, Asian/Pacific American studies, Chicana/o studies, or Native American studies area of concentration. The option in Multinational Studies offers students a broader perspective; the focus is more comparative and comprehensive in scope, as students take courses from all four of the ethnic studies areas. The option in Pre-Counseling is designed for those students thinking about pursuing a career in counseling (or related fields) within a specific cultural community, and who want to increase their understanding of cultural issues in psychology within a multicultural context. The option in Multicultural Literature and Pedagogy emphasizes multicultural literature and pedagogy within the coursework, and is often chosen as a second major by students who are interested in supplementing their training as pre-service teachers, or by those preparing for graduate study in ethnic literature or related fields. The option in Pre-Law is designed for majors planning to enter law school. This option emphasizes analytical and verbal skills, as well as an awareness of critical theoretical, historical, and multicultural perspectives on civil rights and social justice issues. The option in Cultural Studies offers students a multidisciplinary and multicultural approach and the ability to focus on diverse cultural studies issues.

CAC faculty bring to their instruction and research multidisciplinary expertise in the areas of literature, cultural studies, education, political science, psychology, history, sociology, and anthropology. Faculty teach courses and conduct research that reflects this multidisciplinarity, thereby enriching the intellectual climate for students across the university. Many CAC faculty also hold joint appointments with departments of their specialty and most are members of the graduate faculty.

In addition to its strong academic curriculum, the Department of Comparative American Cultures is committed to developing relationships with organizations in the Pacific Northwest whose work strengthens multicultural and multiracial relationships locally, regionally, nationally, and globally. Students involved in a major program of study within the department are encouraged to seek out internships which provide them the opportunity to incorporate community service with their academic work.

The Department of Comparative American Cultures publishes the Working Paper Series in Cultural Studies, Ethnicity, and Race Relations, an international scholarly project for the research and exchange of ideas on globalization, ethnic conflict, and new forms of racism and sexism in the world system. It awards several scholarships to deserving students. It sponsors a film and lecture series. It supports the Cultural Studies Club for CAC majors and the multicultural student centers of WSU. It cooperates with other programs and departments to promote multicultural democratic initiatives at WSU.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Students majoring in Comparative American Cultures are expected to fulfill all of the university’s requirements for graduation, as well as 99 hours in one of the following curricular options within the major. The coursework in each option fosters an indepth understanding of the complexities of American culture. The major in Comparative American Cultures prepares students to work and function in the multiracial and multicultural nation in which we live. Each option leads to the Bachelor of Arts degree in Comparative American Cultures.

FIRST YEAR REQUIREMENTS

The first year requirements for all Comparative American Culture degree programs are as follows:

Freshman Year

First Semester
CAC 101 [I] (GER) or 201
Engl 101 [W] (GER)
GenEd 110 [A] (GER)

Science Elective (GER)

Second Semester
Area Of Concentration
Arts & Humanities [H,G] (GER)
Biological Sciences [B] (GER)
GenEd 111 [A] (GER)
Social Sciences [S,K] (GER)

Second Year

First Semester
First Year Directed Access (FYDA)

Second Semester

COMPARATIVE AMERICAN CULTURES, OPTION IN ETHNIC STUDIES

120 HOURS

Sophomore Year

First Semester
CAC 303
Communication Proficiency [C,W] (GER)
Math Proficiency [N] (GER)
Outside Area Concentration
Electives

Second Semester

Area Of Concentration
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)
CAC 201
Intercultural [I,G,K] (GER)
Electives

1 Students electing the option in One Ethnic Area take CAC 101.
2 For the option in Ethnic Studies, choose 15 hours in one ethnic area of concentration, at least half must be at the 300-400-level. For the option in Multinational Studies, choose a total of 24 hours from the following: six credits in African American studies courses, six credits in Asian/Pacific American courses, six credits in Chicana/o studies courses, and six credits in Native American studies courses. For the option in Pre-Counseling, complete CAC 300, 302, 337, 403; and choose two from Psych 324, 350, or EdPsy 322. For the option in Multicultural Literature and Pedagogy, complete CAC 220, 313, 331, 353, 373; choose one from Engl 323 or 324; and one from CAC 405, 440, or 491. For the option in Pre-Law, complete CAC 300, 335, 440, 491; choose two from Soc 340, 363, or 364; and two from Pol S 300, 330, 404, or Circ J 403. For the option in Cultural Studies, complete CAC 405 and 491; choose one from CAC 220, 313, 331, 336, 338, 353, or 373; one from CAC 302, 337, 403, 411, 453, 454, 457, one from Am St 424, 471, or CAC 413, one from Engl 339 or 470, and one from W St 391 or 484.
3 For the option in Pre-Law, take Phil 201 [H]. For all other options, Am St 216 [H] is strongly recommended.
4 For the option in Pre-Counseling, take Psych 105 [S]. For all other options, W St 200 [S] is strongly recommended.
### Junior Year

**First Semester**
- Area Of Concentration\(^2\) 3
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- CAC 401 3
- Physical Sciences [P] (GER) 4
- Writing In The Major Elective [M] 3  

**Second Semester**
- Area Of Concentration\(^2\) 3
- CAC 405 3
- Outside Area Concentration\(^1\) 3
- Recommended Electives\(^3\) 3
- Writing In The Major Elective [M] 3

### Senior Year

**First Semester**
- 300-400-level Electives 3
- Area Of Concentration\(^2\) 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Outside Area Concentration\(^1\) 3
- Elective 3

**Second Semester**
- 300-400-level Electives 9
- Tier III Course (GER)\(^6\) 3
- Recommended Electives include CAC 300, 405, 440, and 491.

### Sophomore Year

**First Semester**
- Area Of Concentration\(^1\) 3
- CAC 303 3
- Communication Proficiency [C,W] (GER) 3
- Math Proficiency [N] (GER) 3
- Physical Sciences [P] (GER) 4
- Writing In The Major Elective [M] 3

**Second Semester**
- Area Of Concentration\(^1\) 6
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Outside Area Concentration\(^1\) 3
- Intercultural [I,G,K] (GER) 3

### Junior Year

**First Semester**
- Area Of Concentration\(^1\) 3
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Physical Sciences [P] (GER) 4
- Writing In The Major Elective [M] 3

**Second Semester**
- Area Of Concentration\(^1\) 3
- CAC 401 3
- Writing In The Major Elective [M] 3

### Senior Year

**First Semester**
- Area Of Concentration\(^1\) 6
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Physical Sciences [P] (GER) 4
- Electives\(^1\) 9

**Second Semester**
- 300-400-level Electives 9
- Tier III Course (GER)\(^6\) 3

### Sophomore Year

**First Semester**
- Area Of Concentration\(^1\) 6
- Communication Proficiency [C,W] (GER) 3
- Physical Sciences [P] (GER) 4

**Second Semester**
- Area Of Concentration\(^1\) 6
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Outside Area Concentration\(^2\) 6
- Intercultural [I,G,K] (GER) 3

### Junior Year

**First Semester**
- Area Of Concentration\(^1\) 3
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Physical Sciences [P] (GER) 4
- Writing In The Major Elective [M] 3

**Second Semester**
- Area Of Concentration\(^1\) 9
- CAC 405 3
- Complete Writing Portfolio

### Senior Year

**First Semester**
- Area Of Concentration\(^1\) 6
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Physical Sciences [P] (GER) 4
- Electives\(^1\) 9

**Second Semester**
- 300-400-level Electives 9
- Tier III Course (GER)\(^6\) 3

### Sophomore Year

**First Semester**
- Area Of Concentration\(^1\) 6
- Communication Proficiency [C,W] (GER) 3
### Junior Year

**First Semester**
- Area Of Concentration¹
- Math Proficiency [N] (GER) 3
- Physical Sciences [P] (GER) 4
- Pol S 101 [S] or 102 [S] (GER) 3
- Writing In The Major Elective [M] 3
- Complete Writing Portfolio 
- Electives² 9

**Second Semester**
- Area Of Concentration¹
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Electives² 6
- Writing In The Major Elective [M] 3
- Senior Year
- Math Proficiency [N] (GER) 3
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Electives² 9

### Senior Year

**First Semester**
- Area Of Concentration¹
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Electives² 9

**Second Semester**
- Area Of Concentration¹
- 300-400-level Electives 9
- Tier III Course (GER)³

### MINOR IN COMPARATIVE AMERICAN CULTURES

To receive a minor in Comparative American Cultures, the student is expected to fulfill all of the university's requirements for graduation, as well as 18 hours of coursework in Comparative American Cultures. At least 9 hours must be at the 300-400-level and must include 9 hours from the core sequence (CAC 101, 201, 303, 401), and 9 hours in one or more areas of emphasis.

### MINOR IN AFRICAN STUDIES

The African Studies minor provides a broad interdisciplinary program designed to present the unity and diversity of African peoples, economies, and cultures. Students minoring in African studies are expected to fulfill all of the university's requirements for graduation, as well as 18 hours of coursework in African Studies. At least half of the 18 hours must be at the 300-400-level. Core courses (9 hours): Anth 307, CAC 227, 439. Electives (9 hours): Three of the following: CAC 101, 201, 303, 401.

### Description of Courses

#### Comparative American Cultures

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAC 101</td>
<td>Introduction to Comparative American Cultures</td>
</tr>
</tbody>
</table>

#### African Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAC 300</td>
<td>Communication Proficiency [C,W] (GER)</td>
</tr>
<tr>
<td>CAC 330</td>
<td>African Languages: Students may take up to 6 hours of an African language to fulfill elective requirements by making special arrangements with Independent Study Program.</td>
</tr>
<tr>
<td>CAC 499</td>
<td>Independent Study: CAC 499</td>
</tr>
</tbody>
</table>

### Comparative American Cultural Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>FYDA</td>
<td>Comparative American Cultural Studies</td>
</tr>
</tbody>
</table>

### Race and Ethnic Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAC 101</td>
<td>Introduction to Comparative American Cultures</td>
</tr>
<tr>
<td>CAC 227</td>
<td>Introduction to the role of the law in American society</td>
</tr>
<tr>
<td>CAC 228</td>
<td>History and culture of African Americans in the United States, and their relations with other ethnic minority groups and the majority populations</td>
</tr>
<tr>
<td>CAC 301</td>
<td>Comparative analyses of the historic colonialist practices in the Americas and the continued colonial presence in contemporary culture</td>
</tr>
<tr>
<td>CAC 303</td>
<td>Historical and cultural perspectives on race, ethnicity, and culture</td>
</tr>
<tr>
<td>CAC 304</td>
<td>Quantitative, qualitative, and/or literary research methods and strategies particular to the study of race, ethnicity, and culture</td>
</tr>
</tbody>
</table>

1. Complete CAC 300, 335, 440, 491; choose two from Soc 340, 363, or 364; and two from Pol S 300, 330, 404, or Crm J 403.
2. Choose 9 credits: one from CAC 111, 131, 151, or 171; one from CAC 211, 235, 255, 411, or 454; one from CAC 372, 377, 378 or 475.
3. Recommended electives include relevant 300-400-level courses in Crm J, Hist, Phil, Pol S, or Soc.
4. W St 484 is recommended.

### COMPARATIVE AMERICAN CULTURES, OPTION IN CULTURAL STUDIES (120 HOURS)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAC 101</td>
<td>Introduction to Comparative American Cultures</td>
</tr>
<tr>
<td>CAC 227</td>
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<tr>
<td>CAC 301</td>
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</tr>
<tr>
<td>CAC 303</td>
<td>Historical and cultural perspectives on race, ethnicity, and culture</td>
</tr>
<tr>
<td>CAC 304</td>
<td>Quantitative, qualitative, and/or literary research methods and strategies particular to the study of race, ethnicity, and culture</td>
</tr>
</tbody>
</table>

### Cultural Studies Minor

- Realizing Justice in a Multi-Cultural Society: Same as Crm J 105.
- Introduction to Asian/Pacific American Studies: Examination of the social, political, economic, and cultural experiences of Asian/Pacific Americans in the historical and contemporary period.
- Introduction to Black Studies: An introduction to general knowledge concerning African Americans in the USA.
- Introduction to Chicano Studies: Chicano culture and peoples (Americans of Mexican descent); historical backgrounds and contemporary conditions.
- Introduction to Native American Studies: Introduction to Native American studies; introductory course to contemporary native America.
- Introduction to Comparative American Cultures - Honors: Same as Hist 275.
- Introduction to East Asian Culture: Same as Hist 275.
- Introduction to Multicultural Literature: Survey of multicultural literature including American, African American, Asian American, Chicana/o, and Native American authors.
- Introduction to African Studies: Same as Mus 265.
- Race and the Law in American History: Same as Hist 298.
- History of Women in American Society: Same as Hist 298.
- Intersections of Race, Class and Gender: Same as W St 300.
- Comparative American Cultural Studies: Comparative analyses of the historic colonialist practices in the Americas and the continued colonial presence in contemporary culture.
- Social Psychology of Prejudice: Causes and nature of prejudice from social, psychological, and cultural theoretical perspectives.
- Research Methods and Strategies: Quantitative, qualitative, and/or literary research methods and strategies particular to the study of race, ethnicity, and culture.
The student is required to complete collateral courses on the larger social, economic, and political environments in which crime and the criminal justice system operate. Taught by a multi-disciplinary faculty, these courses cover such areas as public administration, policy analysis, and research methods. Additional courses are taught by the Department of Sociology.

The courses of study lead to the degrees of Bachelor of Arts in Criminal Justice and Master of Arts in Criminal Justice.

### Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Students complete Honors Requirements in place of GERs.

Students who major in criminal justice must complete the 12 credit criminal justice core (Crm J 101, 150, 320, 330, 381, 400) plus an additional 12 credits of electives (with 9 of the 12 in Crm J courses); of these 24 hours no more than 3 can be taken in Crm J 490. In addition, the student must complete several collateral courses as outlined below. At least 40 of the total hours required for the bachelor’s degree in this program must be in 300-400-level courses. All criminal justice majors are required to complete a statistics course.

#### CRIMINAL JUSTICE DEGREE PROGRAM (122 HOURS) 3 FYIDA

<table>
<thead>
<tr>
<th>Year</th>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Year</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Crm J 101</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Communication [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Crm J 150</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Science Elective (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore Year</td>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Crm J 320</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Psych 311, Soc 321, or Approved Statistics Course</td>
<td>3 or 4</td>
</tr>
<tr>
<td></td>
<td>Two from: Pol S 300, 402, 404, 443 or Soc 364</td>
<td>6</td>
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**Junior Year**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>Crm J 330</td>
<td>3</td>
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<tr>
<td></td>
<td>Crm J Electives</td>
<td>12</td>
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<tr>
<td></td>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
<tr>
<td>Second Semester</td>
<td>One from: Pol S 316, 416, or Soc 424</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Pol S 340</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Soc 320</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Soc 361</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Soc 461</td>
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</table>

**Senior Year**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>Foreign Language, if necessary, or Electives</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>12</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Foreign Language, if necessary, or Electives</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Tier III Course (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

1. Students may substitute one four-credit Tier I Science course for both the three-credit Tier I Science and the Science Elective.
2. At least 9 hours in Crm J courses: Crm J 365, 370, 381, 400 [M] (may be taken twice), 403, 405 [M], 420 [M], 425, 490, 499; Soc 360, 362, 480.

**Minor in Criminal Justice**

The minor in criminal justice requires 18 credits of course work in criminal justice, including Crm J 101, 320, 330. Half of the courses must be taken at the 300-400-level. Students wishing to declare a minor in criminal justice should contact the Criminal Justice Program for details.

**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 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.

**Description of Courses**

#### Criminal Justice

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crm J 101 Introduction to the Administration of Criminal Justice</td>
<td>3</td>
</tr>
</tbody>
</table>

**Program in Criminal Justice**

105 [S,D] Realizing Justice in a Multi-Cultural Society

3 Critical analyses of policies related to cultural changes tied to race, class, gender, immigration, and sexual orientation.

150 Organizational Environment of Criminal Justice

3 Preq Crm J 101. Impact of organizational structures and dynamics on processes of decision making and the performance of criminal justice agencies. Cooperative course taught jointly by WSU and UI (CJ 135).

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).

330 Crime Control Policies

3 Preq 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


381 Crime and Justice in the Movies

3 (2-2) Preq: Crm J 101 or Pol S 101. Mass media as both refector and shaper of public attitudes and opinions about crime, criminals, law, order, and justice; using films.

400 [M] Issues in the Administration of Criminal Justice

3 May be repeated for credit; cumulative maximum 6 hours. Preq: Crm J 101. Selected topics in criminal justice. Cooperative course taught by WSU, open to UI students (CJ 401).

403 [TS] Violence Toward Women

3 Preq: Crm J 101 or W St 200; completion of one Tier I and one 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 Preq: 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] Law of Evidence and Criminal Procedure

3 Preq: Crm J 320 Principal court decisions concerning standards of conduct and rights in the criminal process; evidentiary principles and privileges. Cooperative course taught by WSU, open to UI students (CJ 420).

424 Community Corrections

3 Preq: Crm J 150. Theory practice and human impact of treating criminal offenders in the community.

425 Law of Corrections

3 Preq: Crm J 320. Impact of federal and state laws; court decisions regarding corrections.

490 Criminal Justice Internship

V 2-12 May be repeated for credit; cumulative maximum 12 hours. Preq: Crm J 101. By interview only. Off-campus professional internship in selected criminal justice agencies. 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 Same as Pol S 504.
CROP SCIENCE

Crop scientists (or agronomists) are involved in improving food, fiber and fuel 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) and The World Bank, international research institutes, church run agricultural development organizations, and the US Peace Corps. Teaching, research, and extension careers are available in community colleges and universities for graduates with advanced degrees.

An interdisciplinary curriculum in integrated pest management is available to those students whose interests span the areas of crop science and pest management. This curriculum is described under the entomology section of this bulletin.

SOIL SCIENCE

Soil scientists are concerned with the physical, chemical, and biological processes that govern natural and agricultural ecosystems. The study of soil science stresses an understanding of these fundamental processes as they apply to crop production, soil development, and environmental quality. Some of the areas of active interest include identification and transfer of best management practices for crop production, erosion control, and environmental protection; reclamation of contaminated soils; transport of pesticides through soils; bioremediation of hazardous wastes; soil-landscape development processes use of microbes to control weeds and plant diseases; surface chemistry of soil minerals; modeling of cropping systems; remote sensing of soils and vegetation; strategies in precision farming; and global change.

Graduates qualify for careers in agribusiness, consulting, waste management, research, and service positions. Positions are available with private consulting firms and commercial concerns dealing with farm products. In addition, government agencies including Agricultural Research and Extension, Agricultural Research Service, Departments of Agriculture, Natural Resources and Ecology, and the Natural Resource Conservation Service have need of soil science graduates. Opportunities also exist in international development.

Crop Science Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

At least 40 credit hours must be in 300-400-level courses. Core and option requirements cannot be taken pass, fail. Students must consult advisors.

All crop science majors must select one of the study options listed below in addition to completing the core courses above.

Crop science elective courses include: CropS 301, 302, 303, 360, 410, 469 and 498. A maximum of 3 credits of 498 can be used to satisfy a crop science elective. U H 450 may substitute for CropS 499.

Emphasis is on basic principles of plant science technology, business, industry, science, and end-product marketing. Various options offer specialized, professional, applied, and scientific training for a variety of career opportunities as well as thorough preparation for graduate school.

FIRST AND SECOND YEAR REQUIREMENTS

Requirements for the first and second years are common to all crop science degree programs.

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Econ 201 [S]</td>
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<tr>
<td>or Econ 101 [S]</td>
<td></td>
<td>3</td>
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<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
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<td>4</td>
</tr>
<tr>
<td>CropS 101</td>
<td></td>
<td>3</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td></td>
<td>3</td>
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<tr>
<td>Math 107</td>
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Second Semester

<table>
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<tr>
<th>Course Code</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>Biol 103 [B] (GER)</td>
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<tr>
<td>Chem 102 [P] or 106 [P] (GER)</td>
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<td>4</td>
</tr>
<tr>
<td>ComSt 102 [C] or H D 205 [C] (GER)</td>
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<tr>
<td>Elective</td>
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<td>3</td>
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</tbody>
</table>
Sophomore Year  

First Semester  
Arts & Humanities [H,G] (GER) 3
Biol 104 [B] or Bot 120 [B] (GER) 4
CropS 201 3
GenEd 110 [A] or 111 [A] (GER) 3
SoilS 201 [B] (GER) 3

Second Semester  
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Chem 240 4
GenEd 110 [A] or 111 [A] (GER) 3
Intercultural [I,G,K] (GER) 3
Stat 212 [N] (GER) 3

1 Students in the Science/Biotechnology degree program must take Chem 105 and 106.
2 Students in the Science/Biotechnology degree program must take Math 140 or 171 instead.

BUSINESS AND INDUSTRY DEGREE PROGRAM  
(124 HOURS)  

For students who wish to engage in farming, corporate farm management, production specialist positions, consulting, international careers, and agribusiness.

Junior Year  

First Semester  
Ag Ec Elective 2 or 3
Ag Ec Mgt or Mktg sequence\(^1\) 3
Bot 320 4
CropS 305 3
CropS 403 3
Complete Writing Portfolio

Second Semester  
Ag Ec Mgt or Mktg sequence\(^1\) 3
Crop Production Elective 3
SoilS 441 3
SoilS 442 2
Elective 3

Senior Year  

First Semester  
Ag Ec Elective 2 or 3
CropS 305 3
CropS 498 or 499 1-3
PIP 429 3
Production Elective 3
Tier III Course (GER) 3
Elective 3

Second Semester  
CropS 411 [M] 3
CropS 412 1
IPM 462 3
SoilS 442 2

ENVIRONMENTAL STEWARDSHIP DEGREE PROGRAM  
(126 HOURS)  

For students who wish to specialize in soil resource management, plant/soil relationships, and landscape conservation.

Junior Year  

First Semester  
Ag Econ 311 or NATRS 303 3
CropS 305 3
CropS 360 3
SoilS 301 3
Elective 3
Complete Writing Portfolio

Second Semester  
CropS 411 [M] 3
CropS 412 1
SoilS 441 3
SoilS 442 2

Senior Year  

First Semester  
CropS 498 or 499 1-3
PIP 429 3
Production Elective 3
Tier III Course (GER) 3
Elective 3

Second Semester  
CropS 411 [M] 3
CropS 412 1
SoilS 441 3
SoilS 442 2

SCIENCE/BIOTECHNOLOGY DEGREE PROGRAM  
(126 HOURS)  

This program prepares students for advanced studies as scientists in such areas as crop physiology, plant breeding, biotechnology and environmental quality. Students may qualify for research or teaching careers with universities, colleges, governmental agencies, or industry.

Junior Year  

First Semester  
Bot 320 4
Bot 332, 410, or Biol 372 4
CropS 305 3
MBioS 301 4
Elective 3

Second Semester  
Complete Writing Portfolio

Senior Year  

First Semester  
CropS 498 or 499 1-3
MBioS 401, 420 or 422 2 or 3
Lab Elective 1-4
PI P 429 3
Stat 412 3

TURF MANAGEMENT DEGREE PROGRAM  
(124 HOURS)  

For students who wish to specialize in golf course supervision, grounds maintenance, and similar recreation positions involving turfgrass management techniques and personnel relations.

Junior Year  

First Semester  
One from: AgTM 315, CropS 410, Hort 232, or 331 3
Hort 231 or L A 264 3
SoilS 301 3
Electives 6
Complete Writing Portfolio

Second Semester  
CropS 305 3
CropS 498 or 499 1-3
IPM 201 or 462 2 or 3
PI P 429 3
Elective 3

Senior Year  

First Semester  
AgTM 346 2
Bot 320 4
CropS 301 3
SoilS 441 3
SoilS 442 2

CROPPING SYSTEMS DEGREE PROGRAM  
(124 HOURS)  

For students who wish to emphasize pest control and environmental quality in cropping systems.

Junior Year  

First Semester  
CropS 305 3
CropS 360 3
CropS 403 3
CropS 410 3
Elective 3
Complete Writing Portfolio

Second Semester  
CropS 411 [M] 3
CropS 412 1
CropS 445 [M] 3
Tier III Course (GER) 3
Elective 3

1 First in sequence.

CROPPING SYSTEMS DEGREE PROGRAM  

For students who wish to emphasize pest control and environmental quality in cropping systems.

Junior Year  

First Semester  
CropS 305 3
CropS 360 3
CropS 403 3
CropS 410 3
Elective 3
Complete Writing Portfolio

Second Semester  
CropS 411 [M] 3
CropS 412 1
CropS 445 [M] 3
Tier III Course (GER) 3
Elective 3

1 Students in the Science/Biotechnology degree program must take Chem 105 and 106.
2 Students in the Science/Biotechnology degree program must take Math 140 or 171 instead.
Minor in Crop Science

A minor in crop science may be obtained by students from other departments. See crop science adviser.

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

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 above options with a strong emphasis in plant sciences, chemistry, computer science, mathematics, and statistics.

Soil Science Degree Program

Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

First Year Requirements

The first year requirements are common to all soil science majors:

First Semester

- Biol 103 [B] (GER) 4
- Chem 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 107 3

Second Semester

- Biol 104 [B] or Bot 120 [B] (GER) 4
- Chem 106 [P] (GER) 4
- Communication Proficiency [C,W] (GER) 3
- Math 140 [N] or 171 [N] (GER) 4

Based on the mathematics placement exam scores, students may not need to enroll in Math 107.

ENVIROMENTAL SOIL SCIENCE DEGREE PROGRAM (122 HOURS) ✔FYDA

This option emphasizes the basic principles of soils as they relate to the quality of the environment.

Sophomore Year

First Semester

- Ag Ec 201 [S] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Phys 101 [P] or 201 [P] (GER) 4
- SoilS 201 [B] (GER) 3
- Elective 3

Second Semester

- Ag Ec 210 or Cpt S 405 3
- Arts & Humanities [H,G] (GER) 3
- Chem 240 4
- Geol 102 [P] (GER) 4

Junior Year

First Semester

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- ES/RP 311 3
- ES/RP 444 3
- SoilS 301 [M] 3
- Elective 3

Second Semester

- Complete Writing Portfolio

Second Semester

- Intercultural [I,G,K] (GER) 3
- Stat 212 or 412 3 or 4
- SoilS 421 3
- SoilS 441 3
- SoilS 442 3

Senior Year

First Semester

- SoilS 414 3
- SoilS 413 3
- SoilS 412 1
- CropS 411 [M] 3
- Elective 3

Second Semester

- Complete Writing Portfolio

Second Semester

- CropS 302 or Hort 320 3
- Intercultural [I,G,K] (GER) 3
- SoilS 412 1
- Stat 212 or 412 3 or 4
- Tier III Course (GER) 3
- Elective 3

SUSTAINABLE AGRICULTURE DEGREE PROGRAM (125 HOURS) ✔FYDA

This option integrates concepts of biodiversity, cropping systems, farm management, soil quality, and agroecology.

Sophomore Year

First Semester

- GenEd 110 [A] or 111 [A] (GER) 3
- Phys 101 [P] or 201 [P] (GER) 4
- SoilS 201 [B] (GER) 3
- Elective 3

Second Semester

- Complete Writing Portfolio

Second Semester

- CropS 305, Entom 325, or Pl P 429 3
- SoilS 413 3
- SoilS 431 3
- SoilS 451 [M] 3
- SoilS 374 or 474 3

Junior Year

First Semester

- Ag Ec 340 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- SoilS 421 3
- SoilS 441 3
- SoilS 442 3

Second Semester

- Complete Writing Portfolio
### Minor in Soil Science

A minor in soil science may be obtained by students from other departments. Sixteen semester hours in soils is required, at least 8 of which must be in 300-400-level courses.

### Preparation for Graduate Study

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 coursework outlined under one of the above options plus completion of Math 171, Phys 102 or 202, and, if not specified in the option, Chem 240.

### Description of Courses

#### Crop Science

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CropS 101</td>
<td>Introductory Field Crop Science</td>
<td>3</td>
</tr>
<tr>
<td>CropS 201</td>
<td>Land Use and Soil Management</td>
<td>3</td>
</tr>
<tr>
<td>CropS 301</td>
<td>Turfgrass Culture</td>
<td>3</td>
</tr>
<tr>
<td>CropS 401</td>
<td>Growth and Development of World Crop Plants</td>
<td>3</td>
</tr>
<tr>
<td>CropS 501</td>
<td>Advanced Crop Physiology I</td>
<td>3</td>
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#### SoilS

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<th>Title</th>
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<tbody>
<tr>
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<td>Soil: A Living System</td>
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</tr>
<tr>
<td>SoilS 301</td>
<td>Plant Use and Soil Management</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 401</td>
<td>Crop Yield and Environment</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 462</td>
<td>Plant Tissue, Cell and Organ Culture</td>
<td>3</td>
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</tbody>
</table>

#### Description of Courses

- **318 Athletic Field Management**: Current athletic field management practices (BMPs) to turfgrass students and turfgrass industry professionals.
- **360 [I] World Agricultural Systems**: Prereq two semesters physical or biological sciences. Study of agro-environmental characteristics of world agriculture; historical and contemporary features of world food production.
- **403 Advanced Cropping Systems**: Prereq CropS 201; PI P 429 or C; graduate standing. Understanding the management of constraints to crop production and quality; biological, physical, and chemical approaches to crop health management. Field trips required. Credit not granted for both CropS 403 and 503. Cooperative course taught by WSU, open to UI students (PSC 412).
- **410 Seed Science and Technology**: Principles of seed biology, development and physiology; seed quality evaluation. Cooperative course taught by WSU, open to UI students (PSC 411).
- **411 [M] Crop Environment Interactions**: Principles of crop physiology, adaptation and management on crop growth and development.
- **412 Seminar**: May be repeated for credit. Current literature and reports on research or special topics.
- **413 Biology of Weeds**: Biology, ecology, and physiology of weeds; weed weed interactions and interference. Credit not granted for both CropS 413 and 513. Cooperative course taught by UI (PSC 410), open to WSU students.
- **445 [M] Plant Breeding**: Recombinant DNA. Principles of genetic engineering applied to the improvement of plants.
- **469 Seed Production**: Principles of seed production, seed quality evaluation and survey of seed industry. Field trip required. Cooperative course taught by WSU, open to UI students (PSC 469).
- **498 Professional Internship**: 1-2 May be repeated for credit; cumulative maximum 9 hours. Planned and supervised professional work experience. S, F grading.
- **499 Special Problems**: 1-4 May be repeated for credit. S, F grading.
- **503 Advance Cropping Systems**: 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 (PSC 512).
- **504 Plant Transmission Genetics**: Principles of genetics across generations; detailed study of the basic laws of genetics to predict and describe inheritance. Cooperative course taught by WSU, open to UI students (PSC 507).
- **505 Molecular Approaches for Improving Crop Quality and Adaptation**: Principles of improving crop quality and adaptation traits with emphasis on molecular breeding strategies. Cooperative course taught by WSU, open to UI students (PSC 515).
- **508 Advanced Crop Physiology**: Physiological responses of crops to light, water and temperature; physiology of seed germination and root and shoot development. Cooperative course taught by WSU, open to UI students (PSC 508).
- **510 Seminar**: 1-2 May be repeated for credit. Literature review; preparation and presentation of reports in crop science.
- **512 Topics in Crop Science**: 1-2 May be repeated for credit. Concepts of plant breeding, seed physiology, and technology; crop physiology and management.
- **513 Biology of Weeds**: Graduate-level counterpart of CropS 413; additional requirements. Credit not granted for both CropS 413 and 513.
- **520 Plant Cyto genetic Techniques**: Prereq MbioS 301. Plant genes and chromosomes. Cooperative course taught by UI (PSC 520), open to WSU students.
- **527 Experimental Methods in Weed Science**: Students. Hands-on exposure to methods and instrumentation commonly used in weed science research; emphasis on laboratory techniques with herbicides. Cooperative course taught by WSU, open to UI students (PSC 527).
- **533 Plant Tissue, Cell and Organ Culture**: Principles and practices of genetic plant improvement. Cooperative course taught by UI (PSC 546), open to WSU students.
- **546 Plant Breeding**: Prereq MbioS 301. Principles and practices of crop production. Cooperative course taught by UI (PSC 547), open to WSU students.
- **556 Insecticides**: Toxicology andMode ofAction: 1 Same as Entom 556.
- **557 Herbicides**: Toxicology and Mode of Action: 1 Same as Entom 557.
- **558 Pesticide Topics**: 1 Same as Entom 558.
- **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

#### Soil Science

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
<th>Hours</th>
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<tr>
<td>SoilS 201</td>
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<tr>
<td>SoilS 462</td>
<td>Plant Tissue, Cell and Organ Culture</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 490</td>
<td>Tier III Course (GER)</td>
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</table>

#### Department of Crop and Soil Sciences
374 Remote Sensing and Airphoto Interpretation 3 (2-3) Physical basis of remote sensing, fundamentals of aerial photography and image analysis applied to agriculture, forestry, wildlife management problems.

412 Seminar 1 Same as CropS 412.

413 Introduction to Soil Physics 3 (2-3) Prereq Math 107; Soils 201; Characterization of soil properties including water content and potential, and hydraulic conductivity; modeling water, solute transport, erosion, contamination of groundwater.

414 Environmental Biophysics 2 Prereq Math 107. Physical environment of living organisms (temperature, humidity, radiation, wind); heat and mass exchange and balance in plant and animal systems. Cooperative course taught by WSU, open to UI students (Bot 435). Credit not granted for both Soils 414 and 514.

415 Environmental Biophysics Laboratory 1 (0-3) Prereq Soils 414 or c//. Experimental methods and procedures in environmental measurements; temperature, wind, radiation, and humidity measurements in biological environment. Cooperative course taught by WSU, open to UI students (Bot 436). Credit not granted for both Soils 415 and 515.

421 Environmental Soil Chemistry 3 Prereq Chem 105, 106, Soils 201. Soil constituents; soil solutions: mineral equilibria; absorption reactions; acid/base reactions; oxidation-reduction; soil contaminants. Credit not granted for both Soils 421 and 521.

431 Soil Biology 3 (2-3) Prereq MBioS 101 or 201; Soils 211. Basic aspects and significance of soil biology as related to soil ecology, soil biology, plant growth, and environmental problems.

441 Soil Fertility 3 Prereq Soils 201. Nutrient management impacts on crop productivity, soil and water quality; mineral requirements; soil testing; plant analysis; inorganic and organic fertilizers.

442 Soil Analysis for Environmental and Crop Management 3 (2-3) Prereq Soils 421, 441, or c//. Analysis and amendment of soils for plant growth and toxicity.


462 Systems in Integrated Crop Management 3 (2-3) Same as Entom 462. Credit not granted for both Soils 462 and 562.

464 Airphotos and Geomorphology 3 (2-3) Prereq physical geology. Remote sensing and photointerpretation methods applied to terrain landforms, soils, land use, vegetation. Cooperative course taught by WSU, open to UI students (For 415).

490 Composting 2 Composting industry, including biology, methods, benefits, management, regulations, and environmental concerns.

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

501 Seminar 1 May be repeated for credit. Presentation of research information.

502 Advanced Topics in Soils V 1-3 May be repeated for credit; cumulative maximum 6 hours. Interpretation, presentation, and discussion of current research on soils, uses, and management.

503 Advanced Soil Analysis V 1-3 May be repeated for credit; cumulative maximum 6 hours. By interview only. Soil research techniques; application of modern instrument to soil analysis.

504 Research Presentation Techniques 1 Preparation of visual aids and oral presentation of research findings. S, F grading.

505 Teaching Practicum 1 May be repeated for credit; cumulative maximum 4 hours. Supervised experience in classroom teaching; classroom preparation for lectures, discussions, laboratories; preparation and grading of exams. S, F grading.

513 Models for Vadose Zone Transport 2 Prereq Soils 413. Numerical methods and computer models for water, heat, vapor, and solute transport in soils; measuring spatial and temporal variability. Cooperative course taught by WSU, open to UI students (Soils 513).

514 Environmental Biophysics 2 Graduate-level counterpart of Soils 414; additional requirements. Credit not granted for both Soils 414 and 514. Cooperative course taught by WSU, open to UI students (Bot 435).

515 Environmental Biophysics Laboratory 1 (0-3) Prereq Soils 514 or c//. Graduate-level counterpart of Soils 415; additional requirements. Credit not granted for both Soils 415 and 515.

517 Fate and Effects of Environmental Contaminants 3 Same as ES/RP 517.

521 Environmental Soil Chemistry 3 Graduate-level counterpart of Soils 421; additional requirements. Credit not granted for both Soils 421 and 521.

526 Soil Mineralogy 2 (1-3) Prereq Soils 421, 451. Distribution and significance of soils minerals; weathering and reactivity of mineral structures; techniques of mineral identification including x-ray diffraction, chemical dissolution, optical and electron microscopy. Cooperative course taught by UI (Soils 526), open to WSU students.

531 Advanced Soil Biochemistry and Microbiology 2 May be repeated for credit; cumulative maximum 4 hours. Prereq MBioS 303; Soils 421, 431. Biochemical and microbiological processes in soil-water environments; nutrient cycling; pesticide behavior; agricultural waste disposal; nitrogen fixation; advanced techniques. Cooperative course taught by UI, open to UI students (Soils 531).

537 Soil Biochemistry 3 Prereq MBioS 303; Micro 201; Soils 421. Enzyme activity; microbial activity/biomass; rhizosphere; carbon, nitrogen phosphorus, sulfur, and micronutrient cycles. Cooperative course taught by UI (Soils 537), open to WSU students.

541 Soil-Plant-Microbial Interactions 3 Prereq Soils 421, 431, or 441. Soil-plant-microbial relationships to plant nutrition, plant health, and environmental cleanup; rhizosphere chemistry and microbial ecology. Cooperative course taught by WSU, open to UI students (Soils 541).

547 Soil Fertility Management 3 Prereq Soils 441. Philosophy of fertilizer recommendations based on soil and plant tissue testing; principles of fertilizer manufacture, placement and use. Cooperative course taught by UI (Soils 547), open to WSU students.

551 Advanced Pedology 3 Prereq Soils 451. Origin and development of soil; geochemical and biochemical weathering processes; dynamics of organic matter; soil development cycles. Cooperative course taught by WSU, open to UI students (Soils 551).

557 Advanced Soil Genesis and Classification 3 (2-3) Prereq Soils 451. Genesis, classification and interpretation of soils, including field investigation emphasizing existing interrelationships. Cooperative course taught by UI (Soils 557), open to WSU students.

562 Systems in Integrated Crop Management 3 (2-3) Graduate-level counterpart of Soils 462; additional requirements. Credit not granted for both Soils 462 and 562.

574 Advanced Remote Sensing 3 (1-4) Prereq basic remote sensing. Digital image processing theory and the techniques applied to satellite and other remote sensing systems. Cooperative course taught jointly by WSU and UI (for 572).

575 Seminar in Remote Sensing 1 Prereq for the consideration of alternative criteria. All students are eligible to apply for certification. Additional information is available in Todd 442.

Department of Economics


The curriculum in economics addresses the disturbing problem that most of the American public’s knowledge of basic economic forces is sadly deficient. Knowledge of economics is a prerequisite for many careers. The course of study for economic majors is sufficiently flexible to accommodate students with a variety of career interests, including business, law, government, education, public administration, and general economics. The undergraduate economics major is also excellent preparation for graduate study in many fields, such as business, law, and economics. Courses of study in economics allow sufficient time for electing courses outside the department while meeting all departmental requirements and General Education Requirements.

The department offers courses of study leading to the degrees of Bachelor in Economics, Bachelor of Arts in Business, Master of Arts in Economics, and Doctor of Philosophy.

Certification Requirements

Students must have completed at least 30 semester credits, including at least 6 credits of economics core courses (i.e., Econ 101, 102, 198, 301, and 320) and have a cumulative g.p.a. of 2.5 or higher to be eligible to apply for certification. All students are eligible to petition for the consideration of alternative criteria. Transfer student expectations and other unique cases will be dealt with individually.

Additional information is available in Todd 442.
Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

During the freshman and sophomore years the economics major should normally begin economics courses and complete a major portion of the General Education Requirements. In the junior and senior year the economics major may choose from a variety of courses to prepare for employment or postgraduate education. Majors must complete courses in the following area:

- Core: Econ 101 (or 198), 102 (or 198); 301 or 302; 311, 401, one Econ 400 elective, 490, three 300-400-level Econ electives.

- Fields: 12 hours of 300-400-level Econ and/or related courses, at least 6 hours of which must be at the 400-level.

- Mathematics: One of: Math 140, 171, 202, or 206.

- The chair of the department and/or the dean of the college must approve in writing any portion of the 300-400-level credit which is to be satisfied by transfer, correspondence, independent study, or other credit which may not carry WSU grade points. 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 GERs, not core/major requirements, and not a course offered by the CBE may be taken pass, fail. A 2.0 cumulative economics g.p.a. is required for graduation.

An honors senior project is required for Honors students.

Options in Economics

Students majoring in economics and satisfying the core, field, and math requirements may elect, in consultation with their major adviser, either to self-design an additional 12-hour area of specialization or to choose from one of the 12-hour options below:

- Economics of Financial Markets. Econ 320, 420, Fin 325, one of Econ 411, 499; Fin 421, 422, 425, 427.
- Economics of Public Policy. Econ 340, 499; two of Econ 320, 345, 350, 411, 420, 450, 455, 460, 481.
- International Economics. Two of Econ 416, 418, 470, 472; two of Ag Ec 420, 425; Anth 418, 419; Econ 499, ES/RP 450, I Bus 380, 481, 482; Pol S 460.
- Labor Economics. Econ 350, 450; two of Econ 312, 455, 499; Mgt 450, 456.
- Preparation for Graduate Study. 12 hours of 300-400-level courses.

The FYDA schedule below allows students to complete any of the options within the Economics Department.

General Program Requirements

Students in the College of Business and Economics must demonstrate performance at a level expected of seniors in their major by presenting WSU graded course work to satisfy at least 75% of the 300-400-level courses required by the major program. The chair of the department and the dean of the college must approve in writing any portion of 300-400-level credits which is to be satisfied by transfer, correspondence, independent study, or other credit which does not carry WSU grade points. 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.

ECONOMICS DEGREE PROGRAM (120 HOURS) ✓FYDA

Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I, G, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)</td>
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Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
</tr>
<tr>
<td>Econ 101 [S] or 102 [S] (GER)</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
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<tr>
<td>Math 171 [N] (GER)</td>
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Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Communication [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Econ 301 or 302</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
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<table>
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<tr>
<th>Elective</th>
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Second Semester

<table>
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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>Econ 311 or 411</td>
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<td>Econ 401</td>
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<tr>
<th>Electives</th>
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Junior Year

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<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Econ Core Electives</td>
<td>6</td>
</tr>
<tr>
<td>Econ Option Elective</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Electives</td>
<td>6</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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<table>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Econ Core Elective</td>
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<tr>
<td>Econ Option Elective</td>
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<tr>
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Senior Year

<table>
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<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>400-level Econ Core Elective</td>
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<tr>
<td>Econ Option Elective</td>
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<table>
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<tr>
<th>Electives</th>
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<table>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Econ Option Elective</td>
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</tr>
<tr>
<td>Econ 490 [M]</td>
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<tr>
<td>Tier III Course (GER)</td>
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<thead>
<tr>
<th>Electives</th>
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1 Math 171 is recommended. Acceptable alternatives are Math 140, 202, 206.
2 At least one of the Econ core or option courses must be a [M] course.

Minor in Economics

A minor in economics is often a desirable complement to majors such as business administration, engineering, education, agricultural economics, forestry, political science, and history. To be eligible to certify in an economics minor, students must have a cumulative 2.5 g.p.a. A minor in economics requires 18 hours of economics, nine of which must be at the 300-400-level with an overall 2.0 g.p.a. in the required courses. Courses for the minor may not be taken pass, fail. Consult the department for an acceptable program of study.

Program in Sustainable Development

Interim Director, M. Nziramasanga

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 build 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.

Minor in Sustainable Development

The program offers a minor in sustainable development. The minor is comprised of Econ/I Bus/Soc/ES/ RP 375; one course from each of the following four aspect areas: policy, history, theory; environmental; social/cultural; economic; and one additional course from any of the aspect areas. The minor requires 18 credit hours, with at least 9 hours at the 300-400 level. All coursework for the minor must be graded and a minimum g.p.a. of 2.0 shall be maintained. Students interested in the minor should consult with an adviser 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.

Bachelor of Arts in Business, Economics Major

A degree in business with a major in economics is also available. Students in this program take business core courses in accounting, business law, decision sciences, finance, management, and marketing along with 24 hours of economics courses. For certification requirements, please refer to the business administration section of this catalog.

Students planning to begin a career immediately after graduation will find openings in many areas of business and government. Special programs of study for particular areas can be developed with the departmental advisers.

Preparation for Graduate Study

Better economics programs expect calculus through linear algebra (Math 220), and econometrics (Econ 311 or 411). Students planning on graduate study in economics are urged to select an appropriate program of study, including a self-designed additional 12 hours, in consultation with a member of the faculty of the Department of Economics.
Students planning graduate study, whether in economics, law, business, or public administration, are advised to develop skills through courses in English composition and additional work in statistics. Recommendations for specific graduate areas include:

**Law School:** Acctg 230; B Law 210; Pol S 300; and, depending on legal interests, elective Econ courses from the following: Econ 340, 364, 450, 460, 470, 481; B Law 410, 411 suggested.

**Business School:** Acctg 230; MIS 250. Additional courses in business are not required for admission to most graduate schools of business. It might be useful, however, to take a second course in accounting, Acctg 231, and to take introductory courses in the major areas of business: B Law 210, Fin 325, Mgt 301, Dec S 340, Mktg 360.

**Economics:** Math 171 and 220 are recommended to satisfy the major's math requirements. Calculus through Math 273 and Econ 408 may also be useful.

**Public Administration:** Acctg 230 and Pol S 443, 446 recommended. Elective: Econ 340.

**Transfer Students**
Students planning to transfer into economics by the end of their sophomore year should have completed the introductory economics courses if they plan to complete the required work for a degree in two additional years.

### Description of Courses

#### Economics

**Econ 101** [S] Fundamentals of Microeconomics 3
Theory and policy of human responses to scarcity; how this affects business competition, international trade, industrial organization, investment, income distribution.

**Econ 102** [S] Fundamentals of Macroeconomics 3
Theory and policy related to unemployment, inflation, foreign trade, government spending, taxation, and banking.

**138 Freshman Special Topics** 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

**198** [S] Economics Honors 3
Introduction to economic theory and policy issues. Open only to students in the Honors College.

**301 Theory of the Firm and Market Policy** 3
Prereq Econ 101. Price determination and market behavior under different market structures and the problems posed for public policy; not calculus-based. Credit not granted for both Econ 301 and 302.

**302 Intermediate Microeconomic Theory** 3
Prereq Econ 101; Math 171 or 202. Calculus-based intermediate microeconomic theory for majors in economics and agricultural economics. Credit not granted for both Econ 301 and 302.

**311 Introductory Econometrics** 3
Prereq Econ 101, 102. Methods of empirical analysis in the context of economic analysis and forecasting problems. Credit not granted for both Econ 311 and 411.

**312 [M] Applied Econometrics** 3
Prereq Econ 311. Applied empirical methods for economic analysis.

**320 Money and Banking** 3
Prereq Econ 102. Analysis of banking institutions and monetary policy in the US, with comparison to abroad.

**330 Economics of Sports in America** 3
Prereq Econ 101. Economic aspects of American sports; fan demand; advertising; team output decisions; league/conference organization; government regulations and sports.

**340 [M] Public Finance and Taxation** 3
Prereq Econ 101, 102. Theory and practice of the public sector; taxes, expenditures, and administration at local, state, and federal levels.

**345 Public Policy Analysis** 3
Prereq Econ 101, 102. Economic impact of public policy on business; health care, environment, airline deregulation, trade and growth.

**350 Labor Economics and Problems** 3
Prereq Econ 101. Functioning of labor markets; introduction to collective bargaining and labor law.

**360 [M] The Economics of Organization, Contracting, and Law** 3
Prereq Econ 101. Examination of the economic and legal aspects of contractual and non-contractual ways of organizing transactions by business.

**364 Transport Economics** 3
Prereq Econ 301. Characteristics of transportation systems; market structure; public policy of transport logistics.

**375 Aspects of Sustainable Development** 3

**377 Topics - Study Abroad** 3
Special topics in economics taught in NCSEA study abroad programs.

**401 Intermediate Macroeconomic Analysis** 3
Rec Math 171 or 202. Income, employment, and inflation theory with policy implications.

**402 History of Economic Thought** 3
Prereq Econ 102. Development of economic thought; special focus on selected schools, including Greeks, scholastics, mercantilists, physiocrats, classical, and neo-classicals. Cooperative course taught by UI (Econ 455), open to WSU students.

**408 Mathematics for Economists** 3
Same as Math 408.

**410 Elements of Mathematical Economics** 3
Prereq Econ 301; Math 273. Introduction to mathematical optimization in economic theory.

**411 [M] Introduction to Econometrics** 3
Prereq Econ 301. Analysis and description of the statistical aspects of economic and social phenomena. Credit not granted for both Econ 311 and 411.

**416 Comparative Economic Systems** 3
Prereq Econ 102. Key institutions, policies, and economic performance of different capitalist and socialist systems; transition of Soviet-type socialist economies, Eastern Europe, capitalism as a global system.

**418 [T,S] Global Capitalism Today: Perspectives and Issues** 3
Prereq GenEd 111; Econ 101 or 102. Logic and consequences of capitalism as a global system; multinational corporations; underdevelopment and overdevelopment; external debt, population, and environmental crisis.

**420 Monetary Theory and Policy** 3
Prereq Econ 320. Current issues in monetary economics with a special emphasis on policy.

**430 [M] American Economic History** 3
Prereq Econ 101 or 102; Rec Econ 301. Development and changes in the American economy from the colonial period to the present.

**450 Collective Bargaining** 3
Collective bargaining from an economic perspective; union-management negotiations in the U.S. private sector.

**451 Introduction to Micro and Macro Economics** 3
Prereq admission to MBA program. Topics in calculus and principles of micro and macro economics for entering MBA students.

**455 The Economics of Health Care** 3
Prereq Econ 101. The economics of allocating, financing and delivering medical care services. Cooperative course taught by WSU, open to UI students (Econ 450).

**460 Concentration of Corporate Power and Antitrust Policy** 3
Prereq Econ 101. Extent, causes, and effects of economic power held by US corporations; antitrust laws and other legislation and regulating business practices.

**470 International Trade and Finance** 3
Prereq Econ 102. Analysis and description of international trade flows; commercial policy; multinational firms, foreign exchange markets; open economy macroeconomics; international monetary systems.

**471 Economics of Regional Integration** 3
Prereq Econ 102. Economic and political of regional integration and economic reforms in Western Europe, North America, East Asia, Eastern Europe and Russia.

**472 Economic Development and Underdevelopment** 3
Prereq Econ 102; Rec Econ 301. Development theories, policies, and performance of Third World economies; population, land reform, foreign trade, aid, investment, debt, dependency.

**475 Regional/Urban Economics** 3
Prereq Econ 101, 102. Location of economic activity; transportation problems, resource and product distribution methods, urban structure and growth, and related policy issues. Cooperative course taught by UI (Econ 430), open to WSU students.

**481 Economics of Environmental Issues** 3
Prereq Econ 101; Rec Econ 301. Environmental interactions; efficient allocation of environmental resources; market failure and environmental degradation; economic analysis of environmental policies.

**490 [M] Economics Capstone** 3
Prereq senior in Econ, completion of Econ core. Integration of economic theory and field courses; assessment.

**497 Economics Internship** 3
V 1-12 May be repeated for credit; cumulative maximum 12 hours. Professional off-campus internships arranged or coordinated by departmental faculty according to student's field of specialization. S, F grading.

**499 Special Problems** 3
V 1-4 May be repeated for credit. S, F grading.

**500 Economic Theory I** 3
Prereq Econ 401; 408. Introduction to dynamics, growth and investment, overlapping generations models, Ramsey model, consumption and investment. Cooperative course taught by WSU, open to UI students (Econ 522).

**501 Economic Theory II** 3
Prereq Econ 301; 408, or one year calculus, or c// in Econ 408. Microeconomic theory, multivariate optimization, consumer and producer theory, competitive partial equilibrium, introduction to imperfect competition. Cooperative course taught by WSU, open to UI students (Econ 510).

**502 Economic Theory III** 3
Prereq Econ 500. Macroeconomic theory, short-run fluctuations and nominal rigidities, monetary economics and inflation, real business cycle models, unemployment international macroeconomics.
501 Applied Social Statistics 3 Prereq Econ 500. Analysis of data; inferences from sample to population; differences among groups; use of computers in data analysis. Techniques of hypothesis testing; correlation and regression; some simple analysis of variance.

502 Advanced Economics I 3 Prereq Econ 501. Integration of theories of the firm, the market, and the macroeconomy. The role of government in the economy.

503 Economic Theory IV 3 Prereq Econ 501. General equilibrium, welfare economics and social choice, market failure, game theory, economics of information.

504 Economic Theory V 3 Same as Ag Ec 504.

510 Statistics for Economists 4 Same as Ag Ec 510.

511 Econometrics I 3 Prereq Econ 510. Single equation linear and nonlinear models; estimation, inferences, finite and asymptotic properties, effects and mitigation of violations of classical assumptions.

512 Econometrics II 3 Same as Ag Ec 512.

520 Seminar in Monetary Economics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 501, 502. Analysis of money demand models, money supply models, and the role of money in a modern economy.

530 Economic History 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 411 or 511; Rec Econ 501. Changes in the American economy; introduction to the new economic history.

540 Advanced Public Finance 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 503. Positive effects of government policy, optimal tax theory; public goods; social choice theory; cost-benefit analysis.

552 Labor Theory 3 May be repeated for credit; cumulative maximum 6 hours. Developments in labor theory; wage theory and recent journal literature.


556 Special Topics in International Business Economics 1 May be repeated for credit; cumulative maximum 3 hours. Prereq Econ 101, 102, 301, Math 202. Topics on Economic Analysis applied to international business situations.

560 Seminar in Industrial Organization 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 460. Industrial organization, market conduct, and performance; appraisal of antitrust legislation.

570 International Factor Movement 3 Prereq Econ 470, 501. The basic nonmonetary theory; new theories of international trade; tariffs and commercial policy; effects of economic integration; international movements factor.

571 Monetary Aspects of International Economics 3 Prereq Econ 470, 500. Balance-of-payments; adjustment to payments imbalance; the foreign exchange market; open economy macroeconomic models and macroeconomic policy coordination; international monetary institutions.

572 Theoretical and Institutional Aspects of Economic Development 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 500. Selected topics in the political economy of developing nations.

590 Advanced Topics in Mathematical and Quantitative Methods V 1-6 Same as Ag Ec 590.

591 Advanced Topics in Monetary and Public Economics V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Econ 500 and 501 or permission of instructor. Topics may include money supply monetary policy, public policy analysis, taxation, externalities, public goods, public finance, open economy macroeconomics.

592 Advanced Topics in Development and Economic Development Economics V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Econ 500 and 501 or permission of instructor. Topics may include international trade theory, trade policy, trade and environment, economic integration, open economies, economic development analysis.

593 Advanced Topics in Health, Education, Labor, and Demographic Economics V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Econ 500 and 501 or permission of instructor. Topics may include labor analysis, human capital investment, personnel economics, health care markets, life and health risk valuation, immigration economics.

594 Advanced Topics in Markets and Industrial Organization V 1-6 Same as Ag Ec 594.

595 Advanced Topics in Resource and Production Economics V 1-6 Same as Ag Ec 595.

596 Advanced Topics in Financial Economics V 1-6 Same as Fin 596.

599 (590) Special Topics in Economics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Educational Leadership and Counseling Psychology


The department offers courses of study leading to a Bachelor of Arts in Sport Management, Bachelor of Science in Kinesiology (majors in athletic training and movement studies), undergraduate minors in leadership studies and sport management, graduate degrees of Master of Education, Master of Arts in Education, Doctor of Education and Doctor of Philosophy (Education). For the master's and doctoral degrees, students may specialize in athletic administration, administration, higher education, curriculum and instruction, counseling (master's level), counseling psychology (PhD level), educational psychology (master's, EdD, and PhD levels), and student affairs (PhD level). Each area of specialization has a required core of courses. Information on the specific requirements for each degree is available from the Department of Educational Leadership and Counseling Psychology.

Admission to Graduate Study

(Educational Administration)

Admission to the graduate programs in educational administration will be determined as soon as a completed departmental application, three letters of recommendation, GRE scores, and all transcripts of past academic work are received and evaluated.

Qualifications of students to continue in the program will be reviewed after the completion of 9 hours of graded course work or the first full-time semester or summer session in residence.

The Doctoral Degree in graduate programs offered lead to either the Doctor of Education or the Doctor of Philosophy. The Educational Administration Program holds membership in the University Council for Educational Administration (UCEA). Programs of study for the doctoral degree must include a common core of required courses plus a major emphasis in one area of specialization. A minor in a second area of specialization is required for the EdD. The following areas of specialization are approved: administration, higher education, and curriculum and instruction, and student affairs. Each area of specialization requires a specific cluster of courses. The doctoral program may include courses from a department other than the Department of Educational Leadership and Counseling Psychology or a cluster of support courses.

Doctoral students will be considered for candidacy after they successfully complete the majority of their course work and pass a written comprehensive examination.

A thesis is required in each of the doctoral programs. There is a requirement of teaching or related experience for the Doctor of Education. A student pursuing a program leading to the Doctor of Philosophy degree is required to fulfill a research competency requirement, since the pursuit of research is emphasized in the program of study for the PhD.

The Master's Degree in the Master of Education degree program requires at least 35 semester hours of approved graduate credit. Although a thesis is not required, candidates for the degree are required to write a six-hour comprehensive examination.

The Master of Arts in Education degree program (minimum of 30 semester hours) is recommended for students who plan to continue work toward the doctoral degree. A thesis is required for the degree, and the program and thesis topic are designed to advance the career goals and professional aspirations of the candidate.

Admission to Graduate Study

(Counseling and Educational Psychology)

Individuals applying for admission to graduate study must make application to the Graduate School and submit the following materials to the Department of Educational Leadership and Counseling Psychology Associate Chair: letter of application describing professional objectives; completed departmental application form; vita; Graduate Record Examination scores; official college transcripts; and three letters of recommendation from individuals qualified to comment on the applicant's academic and professional abilities.

The Doctor of Philosophy in Education, with a specialization in counseling psychology, is designed for individuals who intend to become licensed counseling psychologists. The doctoral specialization in counseling psychology is designed for full-time study and is accredited by the American Psychological Association. For persons interested in the PhD specialization in counsel-
Admission to the certification program is granted on a competitive basis. All candidates for advanced degree or certificate must submit their materials to the associate chair of the department by February 1 for admission the following summer or fall semester.

The Department of Philosophy in Education and the Doctor of Education, with a specialization in educational psychology, is designed for individuals who intend to enter the professional fields of: (a) college or university teaching in the areas of general educational psychology and/or educational measurement, evaluation and research design; (b) public school service in the role of a testing program director or coordinator of curriculum and program evaluation; and/or (c) research and/or administration in research units such as the Northwest Regional Lab or an office of institutional studies at a college or university. These applicants must submit their materials to the associate chair of the department by February 1 for admission the following summer or fall semester.

The Philosophy of Education and the Doctor of Education, with specialization in educational psychology, is designed for individuals who intend to enter the professional fields of: (a) college or university teaching in the areas of general educational psychology and/or educational measurement, evaluation and research design; (b) public school service in the role of a testing program director or coordinator of curriculum and program evaluation; and/or (c) research and/or administration in research units such as the Northwest Regional Lab or an office of institutional studies at a college or university. These applicants must submit their materials to the associate chair of the department by February 1 for admission the following summer or fall semester.

Applications for admission to a graduate program are reviewed by faculty on an individual basis, and notification of the faculty’s action is provided in writing by the chair of the department.

**Certification (Educational Administration)**

A certification program for the initial and continuing certificates for superintendents, principals, and program administrators is offered in the Department of Educational Leadership and Counseling Psychology. Candidates for administration certification must comply with the following requirements:

1. All candidates for advanced degree or certificate must be formally admitted to the university as specified in the current Graduate Study Bulletin. Admission will be considered after transcripts have been received from the institution which granted the baccalaureate degree as well as from institutions which have granted postgraduate credit.

2. All candidates not holding a master’s degree in an appropriate area of specialization must be admitted to the university and the master’s degree program in the respective department.

3. All candidates for certification must submit the following: application to the Graduate School; application for certification; three reference forms.

4. Admission to the certification program is granted only after the WSU Professional Education Advisory Board (PEAB) reviews the completed application process.

**ESU Counselor Certification**

The Department of Educational Leadership and Counseling Psychology offers a major in sport management which leads to a Bachelor of Arts in Sport Management. The sport management major provides professional preparation for those students wishing to pursue a management career with sport organizations or in sport businesses. Students must complete a core program in sport management and must select an area of specialization from business, communications, or leadership studies. Additional information on the areas of specialization can be obtained from the department.

Practice application of theory and knowledge is obtained through enrollment in practicum hours during the junior and senior years and through the completion of a 10-12 credit internship at the end of the required coursework. The internship serves as the bridge between the student’s college career and opportunities for employment as a sport manager.

General Education Requirements must be completed by all students enrolled in the university. Sport management majors are required to complete Engl 101 and ComSt 102. Majors are encouraged to enroll in introductory courses in sociology and psychology. Transfer students are encouraged to complete the AA degree and to contact the department for additional information on courses that may apply to the major and/or the area of specialization.

**Bachelor of Science in Kinesiology**

Two kinesiology majors in the Department of Educational Leadership and Counseling Psychology (athletic training and movement studies) and one major in the Department of Teaching and Learning (health and fitness education) share core kinesiology and health courses. The kinesiology core is composed of a broad spectrum of courses designed to expose students to a variety of experiences, concepts, and philosophies. A grade of C or better must be obtained in all core courses. In addition, each major has a specialized curriculum designed to meet the requirements of the appropriate professional experience in which the student is interested.

Professional Core for the Bachelor of Science in Kinesiology.

GER Courses. Specific to each major.

Kinesiology Core Courses required for Athletic Training, Health and Fitness, and Movement Studies.

**Health and Wellness**

FHSN 130, H Ed 361, 363, PEACT (2 hours), MtStv 364, Psych 105, 201, 221, 305, or SpEd 161, 301; or the core course requirement of an appropriate area of specialization.

**Record of Distinction**

The Department of Educational Leadership and Counseling Psychology sponsors and hosts a number of state, national and international programs including the A. A. Cleveland Conference, High School Equivalency Program and the Center for Academic Leadership. The Assessment and Evaluation Center serves school districts and state agencies by providing high-quality assessment and evaluation services through grant and contract agreements. The center also provides funding opportunities for graduate students interested in assessment and evaluation. Superintendent certification course work is also offered throughout the state at branch campuses in Spokane, Tri-Cities, Vancouver, and internationally in the Far East, as well as on the Pullman campus. Counseling certification is offered at the Tri-Cities branch campus.

The College of Education has excellent facilities for graduate study and research. Modern facilities in Cleveland Hall include a comprehensive George B. Brain Education Library, Mark W. Brands Computer Lab and research studies in the Attentional Processes Laboratory. Extensive use also is made of the university Computing Service Center and the university Instructional Support Services.
### Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

### SPORT MANAGEMENT DEGREE PROGRAM (120 HOURS)

#### Freshman Year

**First Semester**
- Arts & Humanities [H,G] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Social Sciences [S,K] (GER) 3
- Tier I Science [Q] (GER) 3

**Second Semester**
- Biological Science [B] (GER) 4
- GenEd 111 [A] (GER) 3
- Intercultural Studies [I,G,K] (GER) 3
- Mathematics Proficiency [N] (GER) 3 or 4
- SpMgt 276 3

#### Sophomore Year

**First Semester**
- Area of Specialization 3
- ComSt 102 [C] (GER) 3
- Physical Science [P] (GER) 4
- SpMgt 284 2
- SpMgt 290 or additional GER [H,G,S,K] 3

**Second Semester**
- Area of Specialization 6
- PEACT 1
- SpMgt 290 or additional GER [H,G,S,K] 3
- SpMgt 394 2
- Elective 3

#### Junior Year

**First Semester**
- Area of Specialization 6
- H Ed 363 2
- SpMgt 365 or 367 3
- SpMgt 394 1
- Elective 3
- Complete Writing Portfolio

**Second Semester**
- Area of Specialization 6
- Engl 402 [W] (GER) 3
- PEACT 1
- SpMgt 365 or 367 3
- SpMgt 394 1
- Elective 3

#### Senior Year

**First Semester**
- SpMgt 464 3
- SpMgt 468 3
- SpMgt 477 3
- SpMgt 488 2
- SpMgt 490 1
- Tier III Course (GER) 3
- Elective 2 or 3

**Second Semester**
- SpMgt 491 10-12

### ATHLETIC TRAINING DEGREE PROGRAM (121 HOURS)

Accredited by the Commission on Accreditation of Allied Health Education Programs, the athletic training curriculum is designed to provide students with the necessary academic and clinical competency required to be certified by the National Athletic Trainers’ Association. 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 curriculum accreditation guidelines for student/faculty ratio, the program admits a limited number of students into the clinical internship. Application into the clinical internship occurs in the second semester of the freshman year. Academic requirements for this application process include but are not limited to 1) completion of H Ed 363, MvtSt 262, 266, and 2) a minimum g.p.a. of 2.8. Students are advised to consult with athletic training advisers early in their academic careers for specific application procedures.

Internship experiences combine the theory and management of sport-related injury/illness under the direct supervision of certified athletic trainers. Twelve hundred hands-on clinical hours are arranged over five semesters within collegiate, High School Athletic Training facilities, and sport medicine centers. Students are expected to maintain high academic standards and clinical competence to remain a part of the athletic training student clinical staff. Specific policies and procedures governing the clinical experience are available through athletic training advisers.

#### Freshman Year

**First Semester**
- Engl 101 [W] (GER) 3
- MvtSt 199 3
- MvtSt 262 4
- MvtSt 364 3
- PEACT 112 1
- Psych 105 [S] (GER) 3

**Second Semester**
- Ath T 266 2-3
- Biol 102 [B] or 103 [B] (GER) 4
- ComSt 102 [C] (GER) 3
- H Ed 363 3
- Phar 217 2

#### Sophomore Year

**First Semester**
- Ath T 390 or 391 1
- Ath T 491 3
- Chem 101 [P] (GER) 4
- FSHN 130 [B] (GER) or 233 3
- GenEd 110 [A] (GER) 3
- H Ed 361 3

**Second Semester**
- Ath T 390 or 391 1
- Ath T 400 Series 3
- GenEd 111 [A] (GER) 3
- MvtSt 311 3
- MvtSt 362 3
- Zool 251 4

#### Junior Year

**First Semester**
- Arts & Humanities [H,G] (GER) 3

### MOVEMENT STUDIES DEGREE PROGRAM (120 HOURS)

The kinesiology curriculum is designed to provide students with the education basis for successfully pursuing a professional career in movement-related fields. Students must demonstrate proficiency in four of five activity areas: aquatics, individual/dual sports, team sports, dance and gymnastics-related. Students will have an excellent foundation to continue for their teaching certification and/or master's degree in teaching physical education.

#### Freshman Year

**First Semester**
- Engl 101 [W] (GER) 3
- FSHN 130 [B] (GER) or 233 3
- H Ed 363 2
- MvtSt 199 3
- Psych 105 [S] (GER) 3
- PEACT 112 1

**Second Semester**
- Arts & Humanities [H,G] (GER) 3
- Biol 103 [B] (GER) 4
- GenEd 110 [A] (GER) 3
- MvtSt 262 3
- MvtSt 364 3
- PEACT Elective 1

#### Sophomore Year

**First Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- GenEd 111 [A] (GER) 3
- H Ed 361 3
- Intercultural [I,G,K] (GER) 3
- PEACT Elective 1

**Second Semester**
- ComSt 102 [C] (GER) 3
- Math Proficiency [N] (GER) 3 or 4

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1. Ath T 400 Series are chosen from Ath T 465, 466, 467, 468, and 469 in consultation with an adviser.

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Department of Educational Leadership and Counseling Psychology

121
512 Theories, Research, and Techniques in Counseling Psychology II 3 or 4 Prereq CoPsy 511. Advanced study of process techniques and outcome research in the field of counseling and psychotherapy; nonspecific process skills are presented and integrated into specific, empirically validated interviews.

513 Career Development 3 or 4 Theories, concepts, methods and findings in career development; vocational assessment and prediction, career counseling intervention outcomes.

518 Theoretical Foundations of Group Counseling 3 Prereq CoPsy 512 or c/. History, philosophy and theoretical foundations; the group counselor, members, and issues in group counseling.

522 Introduction to Family Counseling 3 Counseling in the family context; intervention strategies, theoretical models, and professional ethics and issues.

529 Counselor Supervision: Theory, Research, and Practice 3 or 4 Prereq admission to Counseling Psychology PhD program. Survey of major theoretical approaches, techniques, and research in models of counselor supervision and training.


532 Current Issues in School Counseling II 3 Prereq CoPsy 531. Additional coverage of contemporary issues of concern to school counselors; comprehensive developmental school programs, school community dynamics, parental involvement, consultation.

557 Chicano/Latino Psychology 3 Graduate-level counterpart of CAC 457; additional requirements. Credit not granted for both CAC 457 and CoPsy 557.

561 Continuing Counseling ESA Certification 3-6 May be repeated for credit; cumulative maximum 6 hours. Prereq Initial Counselor Certification; equivalent of 180 full days of school counselor experience. Peer review requirements for continuing level ESA Counselor Certification.

562 Advanced Hypnosis and Therapy 3 Prereq CoPsy 512 or equivalent, or by permission. Advanced training emphasizing mind-body therapies and primary health care including hypnosis, biofeedback, and ego-state therapy.

578 Career Services and Programs for Persons with Disabilities 3 Graduate-level counterpart of CoPsy 478; additional requirements. Credit not granted for both CoPsy 478 and 578.

590 Seminar in Research in Counseling Psychology 4 By interview only. Recent developments in counseling psychology research and design applied to PhD dissertation proposals. S, F grading.

595 Counseling Psychology Internship V 2-4 May be repeated for credit; cumulative maximum 8 hours. Supervised internship experience, individual and group counseling, evaluation, assessment, supervision, and teaching. S, F grading.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.
506 Social Context of Education 2 The interpretation of social context issues including historical, legal and cultural factors as these influence policies and practice in education.

507 Social Foundations of Education 3 Educational adaptations to the economic and social trends and forces.

510 Improvement of Instruction 3 Read teaching experience. Analysis and evaluation of instructional models with emphasis on information processing; implications for changing teaching style.

511 Models of Teaching 2 Theoretical models and strategies of teaching in classrooms; relationships between specific models and curriculum priorities.

514 Basic Principles of Curriculum Design 2 or 3 Read teaching experience. The application of theoretical concepts and approaches in the planning and design of curricula.

515 Curriculum Implementation 3 Read teaching experience. Research and practice; innovation and change in curricular organization emphasizing implementation.

516 Instructional and Curricular Leadership 2 or 3 Read teaching experience. Theory, research, and practice of providing instructional and curricular leadership in schools and other educational settings.

517 In-service Programs 3 Research, theory, and practice in staff development in K-12, higher education, and non-school settings; for administrators, teachers, and other staff.

518 Educational Technology 3 Read C & L 445 or 446. Research and theory of communication related to instructional resources and current educational technology; problems of planning and administering programs.

520 Seminar in Curriculum and Instruction 2 or 3 Read 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 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 applications in selected areas of education.

530 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Topics in education responding to shifting demands and skills needed by parents, teachers, school administrators and community leaders.

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535 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Topics 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 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 Read teaching experience. Advanced theory and methods of qualitative research; theoretical foundations, data collection and analysis, and reporting.

538 Special Topics in Qualitative Research in Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Read teaching experience.

540 Current Issues in Sports 3 Current issues and problems in sports, and their effect on the administration of sport programs.

560 Student Personnel Services in Higher Education 2 or 3 Philosophy, structure, functions, and organization of student personnel services.

561 Students Development Theory, Research, and Application 3 Student development theory, related research and the application of theory to practice in student affairs work.

562 Professional Problems in Student Affairs 3 Read teaching experience. Examining the intrapersonal, organizational politics and political dilemma, particularly as they pertain to marginalized groups.

563 Models of College Student Social Identity 3 Read teaching experience. Understanding social identity models as they relate to teaching, advising, and working with diverse student populations.

564 Seminar in Student Affairs 3 Read teaching experience. Contemporary issues, analyses, and development of student affairs programs and institutions.

565 Master’s Practicum in Student Affairs 3 (0-9) Read teaching experience. Bulletin courses required in professional student affairs settings which provide for the investigation/application of theory/methods gained through formal course work.

567 Organizational Leadership of Multicultural Change 3 Read teaching experience. 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 Read undergraduate macro and microeconomics of by permission of instructor; graduate standing. Exposes students to the fundamentals of higher education budgeting and finance.

570 Community and Technical Colleges 3 For teachers and community administrators. Development and function of community and technical colleges.

571 Undergraduate and Community/Technical College Teaching 3 Read teaching experience. Concepts, principles, issues, and procedures in undergraduate curriculum development; goal-oriented educational strategies and delivery systems.

572 The American College and University 3 History, philosophy, objectives, and issues of colleges and universities as social institutions.

573 Issues in Higher Education 3 Selected contemporary issues in higher education.

574 Finance and Budget in Higher Education 3 Read teaching experience. Current issues, analyses and developments of higher education programs and institutions.

575 Administrative Concepts for Physical Education, Sport and Athletics 3 Administration focusing on interpersonal and human behavior in organizations with specific attention to the leader, the setting, and the process.

576 Promotions and Management of Sport Programs 3 Public relations, promotions, assessment and fiscal management of sport programs.

577 Sport Law 3 Read teaching experience. Readings and discussions on the theories and practices of school organization and administration. Cooperative course taught jointly by WSU and UI (EdAd 509).

578 Higher Education Law and Ethics 3 Legal and ethical aspects of higher education with special reference to administrators, faculty, and students in higher education institutions.

579 Administration of Higher Education 3 Organization, administration and leadership of universities, colleges, and community colleges.

580 School Organization and Administration 3 Read teaching experience. Readings and discussions on the theories and practices of school organization and administration. Cooperative course taught jointly by WSU and UI (EdAd 509).

581 Politics in Education 3 Read teaching experience. Examining the intrapersonal, organizational politics and political dilemma, particularly as they pertain to marginalized groups.

582 Policy Formation and Analysis in Education 3 Political and organizational policy formation processes in educational organizations; policy analysis in education.
583 Community and Communications 3 Social, political, and economic relationships between education and the community; methods of public polling and campaign strategy techniques.
584 Human Resource Management 3 Human relations in education; problems involved and practical solutions considered.
585 Financial Management in Education 3 Economics and financing of education; financial planning, budget development, investment analysis, bonding, cost effectiveness; current trends in educational finance. Cooperative course taught jointly by WSU and UI (EdAd 535).
586 Management of Facility Planning 3 Principles and procedures in the development of educational specifications, conducting needs assessment, forecasting; selecting an architect.
587 Effective Communication Skills for Education Leaders V 1-6 May be repeated for credit; cumulative maximum 6 hours. Interdisciplinary seminars; related studies; discussions in several areas by specialists.
588 The Law and Education 3 Fundamental legal principles within which public education functions; applicable school codes of Washington and other states; review important court cases.
589 Leadership Development Seminar 3 Improving knowledge and skills in strategic planning, decision making, leadership issues, conflict, motivation, staff development, productivity, and stress.
590 Internship 3 or 6 May be repeated for credit; cumulative maximum 12 hours. By interview only. Internship in professional positions. S, F grading.
591 Educational Internship V 2-9 May be repeated for credit; cumulative maximum 9 hours. Same as Kin 594.
596 Preparing Grant Proposals 3 Identification of funding sources; analysis, evaluation, and production of grant proposals.
599 Superintendent Institute 1 May be repeated for credit; cumulative maximum 4 hours. By interview only. Intensive seminar in the superintendent: policy, planning, and implementation techniques. 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.
701 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.
824 Introductory Principles of Coaching 2 Overview of coaching responsibilities and basic understanding in the sport sciences utilized in coaching.
820 Sport Programs 3 (2-3) 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 sophomore 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 SpMgt 276 or C/. Examination of the role of sport in contemporary American society as well as the relationship between sport and other social institutions.
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 sophomore standing, by interview only. Paid or volunteer, off-campus work experience with a sport organization. S, F grading.
464 Sport Marketing 3 Prereq SpMgt 365, 367. An examination of sport as a consumer product and as a medium by which to sell consumer products.
477 Sport Law 3 Legal aspects of coaching, teaching, and administering sport programs.
488 Current Trends in Sport Management 2 Prereq senior standing. Current trends and issues; research resources; professional presentations.
489 Theory and Application 3 Prereq SpMgt 367; senior standing. Investigation and application of the components of the sport management profession.
490 Internship Seminar V 1-4 May be repeated for credit; cumulative maximum 6 hours. S, F grading.
491 Internship V 10-12 Prereq SpMgt 489; major or minor with 15 hours completed in sport management course work. By interview only. Supervised practicum in agency or business. S, F grading.
496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Special topics in exercise and sports studies.
497 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Special topics in sport studies.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.
Athletic Training

Ath T

266 Care and Prevention of Athletic Injuries 3 (2-3) Prereq MvStT 262 or c/. Administration of school sports health care program; prevention, treatment, and rehabilitation of sports injuries.

305 Nutrition Related to Fitness and Sport 3 Prereq FSHN 130 or 233. Identification of energy, macro/micro nutrient and fluid requirements during exercise; evaluation of dietary regimens and ergogenic aids for pre and post competition, weight management, and wellness. Cooperative course taught by UI (FCS 305), open to WSU students.

311 (Kin) Strength Training 3 Prereq ExSci 264, MvStT 262, PEACT 112. Basic information and guidelines for enhancement of athletic performance, injury prevention, rehabilitation and general fitness. Cooperative course taught by WSU, open to UI students (PEP 311).

349 Advanced Athletic Injuries 3 (2-3) Prereq Ath T 266. Etiologic symptoms of sports-related injuries; diagnostic emphasis given to specific injuries of the extremities. Cooperative course taught by UI (H&S 349), open to WSU students.

390 Athletic Training High School Practicum V 1-4 May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. Cooperative course taught by WSU, open to UI students (H&S 390). 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. Cooperative course taught by WSU, open to UI students (PEP 391). S, F grading.

392 Advanced Strength Training Practicum V 1-4 May be repeated for credit; cumulative maximum 8 hours. By interview only. Intermediate-level practical experience in the Varsity Weight Room. S, F grading.

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.


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.


466 Athletic Training Evaluation 3 Prereq Ath T 266. Advanced injury evaluation theory and techniques in athletic training. Cooperative course taught by WSU, open to UI students (H&S 466).

467 [M] Athletic Training Rehabilitation 3 Prereq Ath T 266. Advanced injury rehabilitation theory and techniques in athletic training. Cooperative course taught by WSU, open to UI students (H&S 467).

468 Athletic Training Modalities 3 Prereq Ath T 266. Advanced theory and techniques of modality use in athletic training. Cooperative course taught by WSU, open to UI students (H&S 468).

469 [M] Athletic Training Organization and Administration 3 Prereq Ath T 266. The organization and administration of athletic training programs. Cooperative course taught by WSU, open to UI students (H&S 469).

490 Internship Seminar 1 May be repeated for credit; cumulative maximum 6 hours. Overview of policies and requirements; guidance through site selection and application process; communication skills for the business/sport environment. S, F grading.

491 Athletic Training Clinical Internship I 3 (0-9) By interview only. Beginning techniques in management of sport injury/illness under supervision of a certified athletic trainer. S, F grading.

492 Athletic Training Clinical Internship II 3 (0-9) By interview only. Intermediate techniques in management of sport injury/illness under supervision of a certified athletic trainer. S, F grading.

493 Athletic Training Clinical Internship III 3 (0-9) By interview only. Advanced techniques in management of sport injury/illness under supervision of a certified athletic trainer. S, F grading.

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

Movement Studies

MvSt

196 Introductory Topics 1 May be repeated for credit; cumulative maximum 4 hours. Physical education, leisure, recreation, dance, health sports.


262 Human Anatomy 4 (3-3) Comprehensive survey of the structure and organization of the human body; emphasis on skeletal/muscular, cardiovascular, nervous, and respiratory systems. Cooperative course taught by WSU, open to UI students (PE 261).

289 Introduction to Youth Sports 2 Same as RLS 289.

296 Applied Computer Technology 1 (0-3) Application of scholarly concepts with the help of multimedia technology.


314 Philosophy of Human Movement 3 The philosophical dimensions of physical education, sport, and dance.

317 Practicum and Seminar 3 (1-6) 10 hours in the subject-matter major. S, F grading.

362 Biomechanics 3 Prereq junior standing; MvStT 262 or Zool 315; math proficiency requirement. Anatomical and mechanical influences on human movement.

384 Lifeguard Instruction 1 (0-3) Prereq ARC life guard training; CPR; first aid. Methods, materials, and resources; American Red Cross lifeguard instructor certificates awarded to those who qualify.

385 Methods of Water Safety and Swimming Instruction 3 (2-3) Prereq ARC Lifeguard Training or Emergency Water Safety certificates; ARC Swimmer Certificate, or equivalent ability. Methods, materials, and resources; American Red Cross certificates awarded to those who qualify.

Practicum in Coaching

V 1-4 1-6 May be repeated for credit; cumulative maximum 8 hours. Combined maximum for MvStT 300-level practicum courses 8 hours. By interview only. Supervised practicum. S, F grading.

Practicum in Physical Education

V 1 (0-3) 4 (0-6) May be repeated for credit; cumulative maximum 8 hours. Combined maximum for MvStT 300-level practicum courses 8 hours. By interview only. Supervised practicum. S, F grading.

Practicum in Special Populations

V 1 (0-3) 4 (0-6) May be repeated for credit; cumulative maximum 8 hours. Combined maximum for MvStT 300-level practicum courses 8 hours. By interview only. Supervised practicum. S, F grading.

School of Electrical Engineering and Computer Science

The School of Electrical Engineering and Computer Science offers courses of study leading to the degrees of Bachelor of Science in Electrical Engineering (BSEE) or Computer Science (BSC), Bachelor of Arts in Computer Science (BACS), Bachelor of Science in Computer Engineering (BSCPE), Master of Science in Electrical Engineering (MSEE) or Computer Science (MSCS), and Doctor of Philosophy. The program leading to the BSEE is accredited by the Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology, while the program leading to the BSCS is accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board.

Electrical Engineering

The curriculum in electrical and computer 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, 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. Special programs may be designed for students planning to continue on to advanced studies in law, medicine, or business administration and for those who wish to pursue undergraduate study in more than one field.

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 course-work 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 B.S in Computer Science, and the B.A. in Computer Science. Graduates in both the degree programs will have a solid technical background in mathematics and sciences. The B.S. degree requires substantial basic and advanced computer science course work and is the traditional computer science degree. The B.A. 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 course-work is supplemented by several general-purpose computing labs dedicated to computer science students, and specialized labs for courses such as operating systems, software engineering, computer animation, and computer networking. 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. An option area course sequence allows students to specialize in specific areas such as computer graphics and animation, computer systems software, software engineering, or computer engineering.

Computer Engineering

Computer engineering is a multidisciplinary program. It is a field which includes engineering science and design courses to provide a balanced view of digital hardware, software, application trade-offs, and basic modeling techniques used to represent the computing process. It draws on basic courses from both electrical engineering and computer science. Therefore, the first part of the curriculum is very similar to these other two degree programs. The curriculum has been carefully designed to allow the student to enter any one of the three degree programs and to switch to another at a point before certification without serious consequences. Similarly, courses can be transferred from community colleges with minimal difficulty. Like all engineering fields, computer engineering utilizes basic courses in mathematics, science, and other engineering disciplines to build a knowledge foundation and to develop breadth.

Core course sequences are completed in the junior year, allowing the senior year to include various electives. Some students will have a strong interest in digital system hardware design and will pursue courses that require some depth in electrical circuits along with expertise in logic components and systems. Another path emphasizes the software aspects of digital systems where programmability and the human/computer interface are designed. A senior design project course is required in one of the three areas: (1) Digital hardware and VLSI design, (2) Microprocessor and embedded systems, or (3) Software engineering.

Certification

Students may apply for certification into any of the three Bachelor of Science degree programs of study after completion of 30 semester hours to include Bio S 102 or Chem 105; Cpt S 150 or 251; Math 171, 172; Phys 201, 202. For the Bachelor of Arts degree program the 30 semester hours must include Math 201, 202, 216; Cpt S 150, 250. Math 171 and 172 may be substituted for Math 201 and 202. Three semesters of laboratory science are required in the schedule of studies but need not be completed prior to certification. Applications for certification are accepted prior to November 15 and March 15 for certification effective the following spring and fall, respectively. Eligible students will be ranked in accordance with several criteria including WSU and transfer g.p.a. and g.p.a. in mathematics, science and in electrical engineering or computer science courses. Final acceptance will be made after current semester grades are available, and students will be notified of the decision as soon as possible. It is strongly recommended that certified students own their own computer. Equipment specifications are available at http://www.eecs.wsu.edu/cs-major-computer.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

No courses listed in the chosen schedule of studies may be taken on a pass, fail basis. All listed E E and Cpt S courses and prerequisites to these courses must be completed with a grade of C or better.

**ELECTRICAL ENGINEERING DEGREE PROGRAM (128 HOURS)**

**Freshman Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First</td>
<td></td>
</tr>
<tr>
<td>Math 110 [P] (GER)</td>
<td>4</td>
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<tr>
<td>E E 120</td>
<td>2</td>
</tr>
<tr>
<td>Eng S 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Second</td>
<td></td>
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<tr>
<td>Cpt S 251</td>
<td>2</td>
</tr>
<tr>
<td>GenEd 110 or 111 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Math 172</td>
<td>4</td>
</tr>
<tr>
<td>Math 220</td>
<td>2</td>
</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
<td>4</td>
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**Sophomore Year**

<table>
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<tr>
<th>Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First</td>
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<tr>
<td>Biological Science [B] (GER)</td>
<td>3</td>
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<tr>
<td>C E 211</td>
<td>4</td>
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<td>E E 214</td>
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<td>Math 273</td>
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<td>Math 315</td>
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**Junior Year**

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<td>E E 361</td>
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<tr>
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**Senior Year**

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<tr>
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<td>E E 415</td>
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<td>E E 489</td>
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</table>

**Certification**

Students may apply for certification into any of the three Bachelor of Science degree programs of study after completion of 30 semester hours to include Bio S 102 or Chem 105; Cpt S 150 or 251; Math 171, 172; Phys 201, 202. For the Bachelor of Arts degree program the 30 semester hours must include Math 201, 202, 216; Cpt S 150, 250. Math 171 and 172 may be substituted for Math 201 and 202. Three semesters of laboratory science are required in the schedule of studies but need not be completed prior to certification. Applications for certification are accepted prior to November 15 and March 15 for certification effective the following spring and fall, respectively. Eligible students will be ranked in accordance with several criteria including WSU and transfer g.p.a. and g.p.a. in mathematics, science and in electrical engineering or computer science courses. Final acceptance will be made after current semester grades are available, and students will be notified of the decision as soon as possible. It is strongly recommended that certified students own their own computer. Equipment specifications are available at http://www.eecs.wsu.edu/cs-major-computer.

**Electrical Engineering Degree Program (128 Hours)**

**Freshman Year**

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<tr>
<th>Semester</th>
<th>Hours</th>
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<tbody>
<tr>
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**Sophomore Year**

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**Junior Year**

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<td>MSE 302</td>
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**Senior Year**

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</table>
Computer Engineering Degree Program (129 Hours)

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<th>Courses</th>
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<tr>
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<td>Chem 105 [P] (GER)</td>
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<td>Cpt E 150 Prog Design</td>
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<td>Math 171 [N] (GER)</td>
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<td></td>
<td>GenEd 110 or 111 [A] (GER)</td>
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<td></td>
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<td>Math 273</td>
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<tr>
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<td>E E 261/262, 321, 341, 441,</td>
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<td></td>
<td>Engl 402 [W] or 403 [W] (GER)</td>
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<td></td>
<td>Engr Sci Elec I</td>
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<td>E E 424</td>
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<td></td>
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<td>Stat 360</td>
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<td><strong>Senior Year</strong></td>
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<tr>
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<td>Arts and Humanities [H,G] (GER)</td>
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<td>Design I</td>
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<td>Cpt E 450</td>
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<td>Cpt E Option Course</td>
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<td><strong>Second Semester</strong></td>
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<td>Approved Cpt E Technical Electives2</td>
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<td>Cpt E 360 or 466</td>
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<td>Tier III Humanities or Social Sciences Course (GER)</td>
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1. Cpt E 150 can be substituted for Cpt E 251.
2. E E 362 and Engl 402 are taken concurrently.
3. Technical electives must be selected with an adviser's approval.

Technical Electives

- E E 415
- E E 416
- S or T
- Math 315
- Econ 101 [S] or 102 [S] (GER)

BACHELOR OF SCIENCE, COMPUTER SCIENCE DEGREE PROGRAM (126 HOURS)

The B.S. degree requires substantial basic and advanced computer science course work and is the traditional computer science degree.

Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
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<tr>
<td>Sophomore</td>
<td>4</td>
</tr>
<tr>
<td>Junior Year</td>
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Computer Science Option Areas

The computer science degree program includes an elective group of 15 credits (minimum) called an option area. Courses in the option area can reflect a technical emphasis (e.g., computer graphics or mathematics), a business emphasis (management information systems), or may be chosen for technical breadth in consultation with an academic adviser.

Students are required to propose a preliminary set of option area courses at the time of certification. This proposed option sequence must be approved by the Computer Science Undergraduate Coordinator. Changes to the set of option courses may be made until the final semester, but must be approved by the Computer Science Undergraduate Coordinator.

Note that Cpt S 451, 452 cannot be counted as option courses if taken as part of the required list of courses.


Management Information Systems: Cpt S 451, 455; MIS 375 or 472; two from Mgt 301, 401, 489.


Networks and Distributed Systems: Cpt S 455, 464, and three from Cpt S 425, 427, 451, 452, and 466.

Note that Cpt S 451, 452 cannot be counted as option courses if taken as part of the required list of courses.


Note that Cpt S 451, 452 cannot be counted as option courses if taken as part of the required list of courses.

BACHELOR OF ARTS, COMPUTER SCIENCE DEGREE PROGRAM (122 HOURS)

The B.A. 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.

Freshman Year

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<tr>
<th>First Semester</th>
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<tbody>
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127
### Sophomore Year

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<td>Math Elective</td>
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### Junior Year

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<td>Cpt S 355</td>
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<td>Intercultural [I,G,K] (GER)</td>
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### Senior Year

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<td>Social Sciences Course (GER)</td>
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### Description of courses

#### Electrical Engineering

**E E**

120 **Innovation in Design** 2 Same as M E 120.

214 **Design of Logic Circuits** 3 (2-3) Prereq Cpt S 121 or 251. Design and application of combinatorial logic circuits with exposure to modern methods and design tools; introduction to sequential logic circuits.

261 **Electrical Circuits I** 3 Prereq Math 315 or c//; Phys 202; or c// in E E 262. Application of fundamental concepts of electrical circuit in linear circuit analysis; mathematical models of electrical components and circuits.

262 **Electrical Circuits Laboratory** 1 (0-3) Prereq E E 261 or c//. Electrical instruments; laboratory applications of electric laws; transient and steady-state responses of electrical circuits.

304 **Introduction to Electrical Circuits** 2 Prereq Math 315 or c// ; Basic DC and AC circuits.

308 **Introduction to Microprocessors** 2 Prereq Cpt S 121, 203, or 251. Digital components, circuits, and number representation; microprocessor organization, instruction sets, and system design.

311 **Electronics** 3 Prereq E E 214, 261 with grade of C or better; major or minor in E. Fundamental device characteristics including diodes, MOSFETS and bipolar transistors; small- and large-signal characteristics and design of linear circuits.

314 **Microprocessor Systems** 3 (2-3) Prereq E E 214. Microprocessor system architecture, instruction sets, and interfacing; assembly language programming.

321 **Electrical Circuits II** 3 Prereq E E 261 with grade of C or better; major or minor in E. State space analysis, Laplace transforms, network functions, frequency response, Fourier series, two-ports, energy and passivity.

324 **Fundamentals of Digital Systems** 4 (3-3) Prereq E E 261, 314. Design and analysis of synchronous sequential machines; module and bit-slice devices; alternative architectures; system-level design; asynchronous sequential machines.

331 **Electromagnetic Fields and Waves** 3 Prereq Math 315, Phys 202; major or minor in E. Fundamentals of electric fields, magnetic fields, and electromagnetic waves.

341 **Signals and Systems** 3 Prereq E E 321. 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. Transmission lines, plane waves, waveguides, antennas, fiber optics.

352 **Electrical Engineering Laboratory** 3 (1-4) Prereq Cpt S 121, 203, or 251; E E 311, 321, or c//; major in E. Experiments in electrical circuits, measurements and electronics; principles of measurements and measuring instruments.

361 **Electrical Power Systems** 3 Prereq E E 321, 331. Power system hardware; transformers, and electromechanical machinery; introduction to power system operation.

362 [M] **Power System Laboratory I** V 1 (0-3) to 2 (0-6) Prereq c// in E E 361, c// in E E 341, c// in Engl 402 or 403. Experiments in simulation, modeling, transformers, rotating machines, and transmission lines.

380 **Preparation for Professional Practice** 1 Prereq junior standing in Cpt E, Cpt S, or E E. Re-sume writing, investigation of job and internship opportunities; curriculum integration; professional ethics; continuity of design experience. S, F grading.

415 **Design Project Management** 2 Prereq senior standing. Project scheduling/planning, technical writing, oral presentation skills, working in teams, TOC, TQM, market-driven organizations.

416 [M] **Electrical Engineering Design** 3 (1-6) Prereq E E 415; Engl 402 or 403. Electrical engineering design of several specific open-ended projects including design specifications, codes, costs, EIS; written and oral presentations and reports.

417 **Numerical Solutions to EM Problems** 3 Prereq E E 351. Numerical solutions to EM problems including the moment method; finite element method; finite difference method, numerical integration, and matrix operations. Cooperative course taught by WSU, open to UI students (E E 483). Credit not granted for both E E 417 and 517.

424 **Digital System Architecture** 4 (3-3) Prereq E E 314, 324. Modern developments in digital system design, parallel structures, pipelining, input/output, high speed circuits, laboratory experience in digital system design; emphasis on CPU architecture.

426 **Introduction to Electromagnetic Compatibility** 3 Prereq E E 341, 351. Electromagnetic compatibility requirements and principles, nonideal component behavior, conducted and radiated emissions and susceptibility, crosstalk, shielding, system design. Credit not granted for both E E 426 and 526.
477 Analog Integrated Circuits Labora-
478 tory 3 Preq E.E. 341, 351. Design and implementation of RF/microwave modules and systems for telecommunications; Microstrip, filters, mixers, amplifiers, frequency synthesizers and transceivers.

473 RF Engineering for Telecommunications Laborat-
474 ory 3 (3-3) Preq E.E. 341, 351. System and propagation issues for wireless telecommunications; cellular, PCS, microwave, and satellite system analysis, design, measurement, and testing.

483 VLSI Systems 1 3 (2-3) Preq E.E. 314; 324; 466 or c/; System, circuits, and physical level design of very large scale integrated circuits using CAD software; project specification, documentation, and reporting.

441 Digital Control Systems 3 Preq E.E. 341, 489. Linear difference equation, Z-transform, discretization, A/D and D/A conversion, sampled data system analysis, frequency domain design, state space design, quantization effects.

442 Robotics 3 Preq E.E. 489 or M.E. 481 or c/; Robotic, kinematics, inverse kinematics, Jacobians, dynamics, sensors, actuators, position control, force control, hybrid control, trajectory generation.

445 Digital Image Processing 3 Same as Cpt S 445.


455 Introduction to Computer Networks 3 Same as Cpt S 455.

464 Digital Signal Processing 3 Preq E.E. 341. Discrete and fast Fourier transforms; Z-transforms; sampling; discrete convolution; digital filter design; effects of quantization.


472 Power Systems Laboratory II 2 (0-6) May be repeated for credit; cumulative maximum 4 hours. Preq E.E. 362; c/ in E.E. 486, 491, or 493. Experiments and design projects related to E.E. 486, 491 and/or 493.

475 Electrical Measurements and Transducers 3 1-6 Preq E.E. 352. Principles of electrical measurements and techniques with individual transducer design, development and test problem; formal report.

476 Analog Integrated Circuits 3 Preq E.E. 311; 351 or c/; 489 or c/; in 477 for capstone design credit. Analysis and design of analog integrated circuits in CMOS and BiCMOS technologies; current mirrors, gain stages, operational amplifiers, frequency response, and compensation. Credit not granted for both E.E. 476 and 576.

507 Random Processes in Engineering 3 Preq Stat 443. Functions of random variables; random sequences; stochastic processes; mean-square stochastic calculus; ergodicity; spectral density; linear transformations, filtering, dynamic systems. Cooperative course taught jointly by WSU and UI (EE 570).

508 Estimation Theory for Signal Processing, Communications, and Control 3 Preq E.E. 501, 507, or equivalent. Principles of statistical estimation; LSE; Kalman filtering; smoothing; prediction; maximum-likelihood and Bayesian estimation.


511 Protection of Power Systems II 3 Preq 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.

512 Active Network Synthesis 3 Preq E.E. 341. Devices and classical network synthesis, two-port network theory, filters, active filters.

514 Optoelectronics Lab IV 1 (0-3) to 3 (0-9) Same as Phys 514.

515 Optoelectronics Lab II V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 3 hours. Same as Phys 515.

516 Wave Propagation and Scattering 3 Preq E.E. 518. Radiative transfer theory; rough surface scattering; scattering in random media; scattering by random discrete scatterers; the T-matrix method; inverse scattering. Cooperative course taught by WSU, open to UI students (E.E. 536).

517 Numerical Solutions to EM Problems 3 Preq graduate standing. Graduate-level counter-parts and E.E. 417; additional requirements. Credit not granted for both E.E. 417 and 517.

518 Advanced Electromagnetic Theory I 3 Preq 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 Preq E.E. 518. Exact solutions to canonical electromagnetic diffraction problems; high and low frequency limits, foundations of numerical solutions to electromagnetic scattering problems. Cooperative course taught by WSU, open to UI (EE 531).

520 Plasma Engineering 3 Preq E.E. 351 or Phys 342. Electromagnetics, kinetic theory, and fluid mechanics of plasmas in space, arc, plasma processing, coronas, and fusion reactors.

521 Analysis of Power Systems 3 Preq E.E. 491. Concepts and practices of modern power engineering, including steady-state and dynamic analysis, economics and control design.

522 High Voltage Engineering 3 Preq E.E. 331. High voltage-high power phenomena; design and measurements associated with electrical transmission, current interruption, insulation, transformation, lightning, and corona.
524 Advanced Digital System Architecture 3 Prereq: E E 424. Parallel and distributed processors; multiprocessors; interconnection topologies; language directed architecture; special purpose architecture.

526 Introduction to Electromagnetic Compatibility 3 Prereq graduate standing. Graduate-level counterpart of E E 426; additional requirements. Credit not granted for both E E 426 and 526.

527 Antenna Theory and Design 3 Prereq: E E 351. Antenna fundamentals, analytical techniques, characteristics and design procedures for selected types of wire, broadband, and aperture antennas. Cooperative course taught jointly by WSU and UI (E E 533).

528 Advanced Topics in Electromagnetics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq E E 351. Advanced topics of current interest in wave propagation (electromagnetics, acoustics, or optics).


531 Energy Management and Planning 3 Available energy resources; energy issues, economic analysis of energy alternatives; energy future.

534 High Performance Computing 3 Prereq E E 324. Development, current state and future of high speed computing; application of existing commercial supercomputers to engineering problems. Cooperative course taught by UI (EE 504) and WSU students.

538 EM Simulation 3 Prereq by interview only. Computer simulation of electromagnetics using the finite-difference time-domain (FDTD) method; theory of finite-difference simulation, techniques for modeling EM propagation in lossy and dispersive media, boundary conditions for time-domain simulation, Cooperative course taught by UI (EE 338), open to WSU students. 3 (0-3) Prereq E E 441. State space approach, SISO, optimal control, State estimators, stochastic systems, State estimation in the presence of noise.

543 Signal Theory 3 Prereq: E E 341. Theory of signals; signal spaces; basis sets; signal representations; projection theorem; Fourier transform; optimum signal design.

544 Neural Computation 3 Same as Cpt S 544.

545 Data Compression 3 Prereq: E E 507, 543. Source coding with a fidelity criterion; quantization theory; predictive, transform and subband coding; noiseless source codes.

548 Information Theory and Channel Coding 3 Prereq E E 451, 507. Information theory: entropy, mutual information, source and channel coding theorems, channel capacity, Gaussian channels; channel coding: block and convolutional codes.

551 Data Communication Systems 3 Prereq E E 341, 507. Digital communications; multi-amplitude/phase signal constellations; probability of error performance; cutoff rate; Viterbi algorithm; trellis coded modulation.

554 Asynchronous Digital Systems 3 Prereq: E E 324. Analysis and design of high speed asynchronous state machines, timing defect analysis, modular elements, arbiters, programmable sequencers, system level design. Cooperative course taught jointly by WSU and UI (EE 540).


561 Fault Tolerant Computer Systems 3 Same as Cpt S 562.

564 Advanced Signal Processing 3 Prereq Stat 443. Signal processing and communication theory aspects of frequency domain analysis of continuous and discrete random signals.

574 Optoelectronics 3 Prereq: E E 496 or Phys 463. Methods of modulating, generating, and detecting light; display techniques; display devices; fiber optics.

576 Analog Integrated Circuits 3 Prereq graduate standing. Graduate-level counterpart of E E 476; additional requirements. Credit not granted for both E E 476 and 576.

578 Microelectronic Fabrication 3 Graduate-level counterpart of E E 478; additional requirements. Credit not granted for both E E 478 and 578.

581 Advanced Topics in Power Systems 2 or 3 May be repeated for credit; cumulative maximum 6 hours. Prereq: E E 521. Power system operations including AGC, economic dispatch and security; power system dynamics; intelligent systems applications. Cooperative course taught jointly by WSU and UI (EE504).

582 Advanced Topics V 1-3 May be repeated for credit.

584 Parallel Processing: Systems and Applications 3 Same as Cpt S 584.

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 Semiconductor Device Modeling 3 Electron transport in semiconductors; scattering processes, Monte-Carlo technique, numerical techniques for solving Poisson and continuity equations for device modeling.

598 High Speed Semiconductor Devices 3 Prereq: E E 496. Transit-time effects, negative resistance devices; ballistic transport in high electric fields; GUNN effect devices; resonant tunneling, IMPATT, HEMTs, and HBTs.

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.

Computer Skills and Literacy Courses

Cpt S

100 General Computer Literacy 2 Computer literacy for a general audience; hardware, operating systems, applications, social issues, and emerging themes.

101 Personal Computer Tools V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 3 hours. Prereq Cpt S 100 or computer science placement examination. Personal computer tools for a general audience; laboratory exposure; PC applications.

105 Computer Literacy and Applications 4 Computer competency for a general audience; PC components, operating systems (Windows), and applications (MS Office Pro., email, Web Browsers).

110 Computer Science Overview 3 Prereq Math 107 or 108. Central concepts of computer science; algorithms, computability, complexity, artificial intelligence in the context of current computational devices and software.

153 BASIC Programming 2 Comprehensive programming practice using BASIC.

203 FORTRAN Programming 2 Prereq Math 171 or 172. Comprehensive programming practice using FORTRAN.

207 Introduction to the Internet 3 Prereq Cpt S 105 or 150. Skills and strategies for utilization of the resources of the Internet.

223 Advanced Data Structures 3 Prereq Cpt S 122; Math 216 or equivalent. Advanced data structures, object oriented programming concepts, concurrency, and program design principles.

224 Programming Tools 2 Prereq Cpt S 122, rec 223 or equivalent. Debugging tools, scripting languages, UNIX programming tools, introduction to graphical user interface programming.

251 C Programming Language 2 Prereq Math 171 or 172. Comprehensive programming practice using C.


253 Java Programming Language 3 Prereq Cpt S 121, 153, 203, or 251. Comprehensive programming practice using Java.

283 Topics in Computer Skills and Literacy V 1-3 May be repeated for credit; cumulative maximum 9 hours. Current topics in computer skill development and computer literacy.

284 Unix System Administration 3 (2-3) Prereq Cpt S 121. Functions and responsibilities of Unix system administrators; disks, networking, accounting and policy.

290 Programming for Engineers I 3 Prereq Math 220, 273, 315. Problem-solving methods, software development principles structured programming with engineering applications.

297 Programming for Engineers II 3 Prereq Cpt S 306. Continuation of Cpt S 306; advanced programming topics and data structures with engineering applications.

401 [T] Computers and Society 3 Prereq Cpt S 105, 121, 153, 203, or 251; Phil 260 or Soc 101; completion of one Tier I and three Tier II courses. Ethical and societal issues related to computers and computer networks; computers as enabling technology; computer crime, software theft, privacy, viruses, worms.

Computer Science Courses

Cpt S

120 Innovation in Design 2 Same as M E 120.
121 (150) Program Design and Development 4 (3-3) Prereq Math 107. Formulation of problems and top-down design of programs in a modern structured language for their solution on a digital computer.

122 (250) 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.

317 Automata and Formal Languages 3 Prereq Math 216. Finite automata, regular sets, pushdown automata, context-free language, Turing machines and the halting problem.

322 (350) [M] Software Engineering Principles I 3 Prereq Cpt S 224, Math 216, c// in Engl 402. Introduction to software engineering; requirements analysis, definition, specification including formal methods; prototyping; design including object and function oriented design.

330 Numerical Computing 3 Prereq Cpt S 121, 203, or 251; c// in Math 315. Power and limitation of numerical solutions; design, analysis and implementation of numerical algorithms; visualization and rendering.

355 Programming Language Design 3 Prereq Cpt S 223, 224. Design concepts of high-level programming languages; survey of existing languages, experience using some languages.

360 Systems Programming 4 (3-3) Prereq Cpt S 223, 224; E E 314. Implementation of system programs, concepts of computer operating systems; laboratory experience in using operating system facilities.

380 Preparation for Professional Practice 1 Same as E E 380.

422 [M] Software Engineering Principles II 3 Prereq Cpt S 322. Dependable software systems; software verification and validation, testing; CASE environments; software management and evolution.

423 Software Engineering Laboratory 3 (1-6) Prereq Cpt S 422. Laboratory/group design project for large-scale software development; requirements analysis, estimation, design, verification techniques.

425 Network Security 3 Prereq Cpt S 360. Practical topics in network security; policy and mechanism; intrusion, detection, prevention, response, cryptography. Cooperative course taught by UI (CS 425), open to WSU students.

427 Computer Security 3 Prereq Cpt S 223, 224. Computer security concepts, models and mechanisms; encryption technologies, formal models, policy and ethical implications. Credit not granted for both Cpt S 427 and 527.

430 Numerical Analysis 3 Same as Math 448. Credit not granted for both Cpt S 430 and 530.

434 Neural Network Design and Application 3 Prereq Stat 360, computer programming skills. 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.

440 Introduction to Artificial Intelligence 3 Prereq Cpt S 223, 224. 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. Cooperative course taught by WSU, open to UI students (CS 404). Credit not granted for both Cpt S 442 and 542.

443 Computer-Human Interaction 3 Prereq Cpt S 223, 224. Topics in computer-human interaction; screen based paradigms and Fitt's law; audio and haptic interfaces, virtual reality.

445 Digital Image Processing 3 Prereq Cpt S 330 or E E 341; Math 315; c// in Stat 443 or 360. Digitization, coding enhancement, restoration, reconstruction, segmentation, and description of digital images. Cooperative course taught by WSU, open to UI students (CS 404).

446 Animation Programming 3 (1-4) Prereq Cpt S or E E major; Cpt S 122. Introduction to computer animation production, animation programming techniques, simulation, and dynamic visualization.

450 Design and Analysis of Algorithms 3 Prereq Cpt S 223, 224, 317, Stat 360. Analysis of data structures and algorithms; computational complexity and design of efficient data-handling procedures.

451 Introduction to Database Systems 3 Prereq Cpt S 223, 224. Introduction to database concepts, data models, database languages, database design, implementation issues.


453 Graph Theory 3 Same as Math 453. Credit not granted for both Cpt S 453 and 553.

455 Introduction to Computer Networks 3 Prereq Cpt S 223, 224. Concepts and implementation of computer networks; architectures, protocol layers, internetworking and addressing case studies.

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.

464 Distributed Systems Concepts and Programming 3 Prereq Cpt S 360. Concepts of distributed systems, including naming, security, networking, replication, synchronization, quality of service. Programming middleware including CORBA, XML, DCOM/SOAP. Credit not granted for both Cpt S 464 and 564. Cooperative course taught by WSU, open to UI students (CS 404/504).

465 Microcomputer Systems 3 (2-3) Prereq Cpt S 360; E E 214. Design and implementation of a microcomputer system including the system hardware and firmware (BIOS).

466 Embedded Systems 3 (2-3) Prereq Cpt S 360. The design and development of real-time and dedicated software systems with an introduction to sensors and actuators. Cooperative course taught by WSU, open to UI students (CS 404).

483 Topics in Computer Science V 1-4 May be repeated for credit. Prereq Cpt S 350. Current topics in computer science or software engineering.

490 Work Study Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq Cpt S 150, 153, or 241; E E 314; Cpt S 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. By interview only. S, F grading.

500 Proseminar 1 Faculty research interests, departmental computer systems, computer science research, report preparation. S, F grading.

511 Computational Structures 3 Prereq Cpt S 317 or Math 421; graduate standing. Categories as theories; formal approaches to specifications and homomorphisms of computational structures.

516 Algorithms 3 Prereq Cpt S 450. Discrete structures, automata, formal languages, recursive functions, algorithms, and computability.

518 Programming Language Theory 3 Prereq Cpt S 516 or Math 421. Syntax; operational and denotational semantics. Cooperative course taught by WSU, open to UI students (CS 510).

519 Introduction to Computational Geometry 3 Prereq Cpt S 450. Graduate standing. Introduction to computational geometry; data structures and algorithms, with motivating applications.

521 Software Engineering Analysis 3 Prereq Cpt S 322. Introduction to research in software engineering; strong emphasis on application of quantitative techniques in the software life cycle; students will develop a command of current software engineering literature; exploration of techniques of mathematical modeling and related solutions to software engineering problems. Cooperative course taught by UI (CS S81), open to WSU students.

522 Software Reuse 3 Prereq Cpt S 422. Basic principles of software reuse, compositional and generative reuse, with specific topics selected from current literature, reverse engineering.

523 Software Engineering Measurement 3 Prereq Cpt S 521. Measurement methodology is the foundation of the emerging discipline of software engineering; software products are constructed by people engaged in software development process in a development environment; focus on learning to measure the attributes of these four measurement domains; examples of software measurement and the applications of these measurements; using these techniques as the basis for the design of software engineering experiments; application of the scientific method in evaluation of programming methods and models; extension of the measurement concepts into the area of statistical modeling. Cooperative course taught by UI (CS S83), open to WSU students.

524 Software Specification and Analysis 3 Prereq Cpt S 422 or instructor's permission; Math 216. Formal specification, abstraction, and analysis of software using a formal specification language; case studies of design.

527 Computer Security 3 Graduate-level counterpart of Cpt S 427; additional requirements. Credit not granted for both Cpt S 427 and 527.

530 Numerical Analysis 3 Prereq graduate standing. Graduate-level counterpart of Cpt S 430; additional requirements. Credit not granted for both Cpt S 430 and 530.

531 Computational Linear Algebra 3 Same as Math 544.
### Program in Engineering Management

**Program Director:** J. A. Ringo; Teaching Faculty, W. J. Gray, J. R. Holt, E. R. Ladd, H. A. Ramsey.

Engineering management is a graduate program designed to help technical professionals become effective managers. The program is administered by the College of Engineering and Architecture. Management training is integrated with upgraded technical skills to meet industry needs for the management of technology and the management of technical professionals. Engineering management focuses on the management of those activities that have a high technological content.

This interdisciplinary master's degree is offered to the working engineer. Engineering management is integrated with upgraded technical skills to meet industry needs for the management of technology and the management of technical professionals. Engineering management focuses on the management of those activities that have a high technological content.

### 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. The program of studies leads to a Master of Engineering Management degree. An overview of the engineering management curriculum can be summarized as follows:

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Hours</th>
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<tbody>
<tr>
<td>E M 501</td>
<td>3</td>
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<tr>
<td>E M 505</td>
<td>3</td>
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<tr>
<td>E M 540</td>
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<td>E M 564</td>
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<td>E M 591</td>
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<td>E M 702</td>
<td>2-4</td>
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<tr>
<td>Stat 430</td>
<td>3</td>
</tr>
</tbody>
</table>

**Pre-Approved Elective Courses**

Students need to have four three-semester credit hour electives to total 12 hours of electives: E M 517, 526, 530, 545, 560, 565, 570, 575, 580, 585, 590, 595, 596.

### Admission Requirements

Students who apply to the Master of Engineering Management degree program will have earned a Bachelor of Science in Engineering from an accredited program with a minimum g.p.a. of 3.0. Working engineers with undergraduate degrees in other fields, particularly mathematics, physics, or other physical sciences, may be accepted for this program; requirements for additional undergraduate work in engineering (nonengineering majors) are evaluated on an individual basis. Prospective students must score above 500 on the Graduate Management Admission Test (GMAT), provide three letters of recommendation, a resume showing significant engineering experience, and a brief personal statement outlining the appropriateness of the program in light of career goals and work history. For information on the certificate program, please contact the Pullman office, (509) 335-0125.

### Description of Courses

#### Engineering Management

- **E M 460 Manufacturing and Operations Design and Strategy** 3 Prereq junior standing. Concepts and techniques for design and managing manufacturing and service, operations intended to develop a world class organization.

- **E M 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.

- **E M 501 Management of Organizations** 3 Same as Mgt 501.

- **E M 505 Financial Management for Engineers** 3 Time value of money, capital budgeting, accounting principles, cost, valuation, risk, cost accounting and sensitivity analyses: concepts for engineering decision-making.
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.

526 Constraints Management 3 Factors that block improvement in any system; effective breakthrough solutions; continual systems improvements for manufacturing, administration, projects.

530 Applications of Constraints Management 3 Preq graduate standing. Understanding and applying proved solutions developed by the Theory of Constraints in areas of production, project management, finance, and distribution.

540 Operations Research for Managers 3 Rec Math 273. Applying linear, integer, goal programming; network optimization; queuing analysis; dynamic programming; simulation; Markov analysis; and forecasting to engineering management decisions.

545 Decision Analysis for Engineering 3 Structured discipline for describing, analyzing, and finalizing decisions involving uncertainty.

560 Manufacturing and Operation Design and Strategy 3 World-class concepts, tools and techniques for designing and operating manufacturing and service operations; layout, capacity planning, inventory management scheduling.

564 Project Management 3 Rec basic statistics course. Planning, organizing, scheduling, and controlling major projects; human dimensions, PERT and CPM scheduling models, resource allocation, and cost controls.

565 Systems Engineering Management 3 Preq graduate standing. Design manufacture, operation of complex system development for engineering managers; project planning, organizing, and controlling tools for engineering system constraints.

570 Quality Management 3 Overview of the total field of quality, including strategic quality management programs, quality assurance, quality control, and product design.

575 Performance Management in Technical Organizations 3 Rec Mgt 501 or c/. Management of high technology organizations; planning, measurement, and human factors in improving high technology organizations; productivity, motivation and performance systems.

580 Quality Control and Reliability Design 3 Quality improvement analysis for process and product quality; statistical process control; capability studies; acceptance sampling concepts; reliability models for predictions and testing.

585 Quality Engineering Using Experimental Design 3 Design of quality into products and processes using design of experiments including robust/parameter design and tolerance design techniques.

590 Design for Manufacturability (DFM) 3 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 3 Rec final year. Management of innovation and technological innovation, integrating technological strategy, new product development, and corporate entrepreneurship and innovation.

595 Advanced Topics in Engineering Management 1 V 1-3 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.

596 Advanced Topics in Engineering Management II 3 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.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Electronic Media and Culture

V. Villanueva (Pullman), and T. Hunt (Vancouver), Coordinators.

Electronic Media and Culture (EMC) is an option within General Studies that provides an interdisciplinary course of study leading to the BA in Humanities. Administered on the Pullman campus by the Department of English, this degree aims to enable students:

• to acquire a historically grounded understanding of the role of computing and computers as media for communication and sites for human interaction;
• to develop intellectual tools to investigate the nature and implications of computer-mediated communications of all kinds;
• to develop an understanding of hypermedia and multimedia rhetorics;
• to develop the ability to compose for computer-based environments (DVD, web pages, etc.) both individually and as a team leader with collaborators in design, writing, and computing whose skills complement one’s own expertise;
• to understand how computing is transforming the nature of information; how information is accessed; and how knowledge is constructed, represented, stored, transmitted, and used; and
• to master the tools of electronic research and the skills of analysis, synthesis, extrapolation, organization, and symbolic translations needed to construct and apply knowledge.

The EMC curriculum draws on investigations in such areas as language and culture (anthropology, writing, the history and theory of rhetoric, linguistics); cognition and learning (psychology, linguistics, education); language and society (anthropology, sociology, rhetoric, communications, political science); design and visual communications (fine arts); and information science.

This program addresses a growing regional and national need for trained information technology (IT) and multimedia professionals, prepared for careers in information design and management, electronic publishing and research, educational technology, etc.

The EMC option emphasizes the following skills and knowledges:

• The facility to mix art and technology
• An understanding of the interaction between humans and machines
• The capability to manage both creative and technical endeavors
• The ability to communicate with a wide variety of professionals
• The competence to analyze end-user needs and preferences and apply them to the development of process
Course of Study (39 credits):

The EMC program can be completed in the junior and senior years, in part to better accommodate transfer students and students who discover their academic direction only after a year or two of college study. While several lower division courses (noted below) are recommended and can be counted in the program, all specifically required courses are upper division courses. The required 39 credits are composed of a "core" of 20 credits, a "concentration" of at least 12 additional credits, and a senior capstone in the major (as distinct from the General Education capstone) of at least 3 credits.

GENERAL STUDIES ELECTRONIC MEDIA AND CULTURE DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester

Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Science Elective (GER) 4

Second Semester

Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Communication Proficiency [C,W] (GER) 3
FA A 110 2
GenEd 111 [A] (GER) 3

Sophomore Year

First Semester

Cpt S 105, 110, or 150 3 or 4
EMC Core 2
Liberal Arts [H,G,S,K,I] (GER) 3
Social Sciences [S,K] (GER) 3
Elective 3

Second Semester

Engl 300 1
Engl 304 3
Liberal Arts [H,G,S,K,I] (GER) 3
Physical Sciences [P] (GER) 4
Elective 3

Junior Year

First Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
EMC Core 2
Liberal Arts [H,G,S,K,I] (GER) 3
Social Sciences [S,K] (GER) 3
Elective 3

Second Semester

EMC Concentration 3
EMC Core 2
Engl 355 3
Intercultural [I,G,K] (GER) 3
Elective 3

Senior Year

First Semester

EMC Concentration 3
Electives 9

Second Semester

EMC Concentration 3

Senior Seminar, Senior Thesis, or Internship 3
Tier III Course (GER) 3
Electives 6

1 Students are encouraged to take an introductory Fine Arts course and introductory Computer Science course. Up to 6 credits of such course work can be counted toward the 39 credits required in Electronic Media and Culture.
2 Students are expected to take three of the following as part of the "Core" in Electronic Media and Culture: Engl 338, Anth 355, Com 420, FA A 331, Psych 301.
3 Students are expected to complete an appropriate (as determined by the student's faculty adviser) "Concentration" of at least 12 upper-division credits in one of the following areas or a combination of two of them: "Language, Technology, and Culture"; "Professional Authoring in Hyper/multimedia Environments"; and "Electronic Research and Knowledge Management."

English Major Options

Five programs are offered for the English major, all leading to the degree of Bachelor of Arts in English.

Option I is for students who desire a general liberal arts education emphasizing literature, critical thinking and writing; it is often selected by students with double majors or minors in other departments. Option I is designed for students preparing for graduate study in English and related fields. Option III is for students who need specific training in the teaching of language and literature at the secondary level; it is coordinated with the Department of Teaching and Learning. Option IV is for English majors planning to enter law school; it emphasizes analytical and verbal skills and breadth requirements in areas identified as requisite to success in the profession by law schools and the Law School Admissions Council. Option V is for English majors planning for a career in business; it emphasizes analytical and communication skills, a broad liberal arts background, and a core of business, economics, and computer science courses required for most business careers.

All options in the major include a four-course upper-division concentration, which must include an appropriate senior seminar, senior project (the latter possible with an acceptable proposal and adviser available to direct), or internship, the whole making up a coherent area of study. Concentrations must be approved by adviser, may include one nondepartmental or 100-200 level course if appropriate, and must fall into one of the following categories: English Literature, American Literature, Literature and Criticism, World Literature/ Humanities, Writers of Color/Ethnic Studies, Gender Identity and Literature, Literature and Cultural Studies, Language and Linguistics, or Writing and Rhetoric (Professional Writing, Creative Writing, or Rhetoric and Theory Emphasis).

Some 300-400-level courses offered only on alternate semesters; please check time schedule when planning these suggested sequences.

FIRST SEMESTER REQUIREMENTS

The first semester requirements are common to all English degree programs:

Freshman Year

First Semester

Hum 101 [H] or 103 [H] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Science Elective (GER) 4

I. ENGLISH MAJOR: GENERAL DEGREE PROGRAM (120 HOURS) ✔FYDA

Freshman Year

Second Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biological Sciences [B] (GER) 4
Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER) 3
GenEd 111 [A] (GER) 3
Social Sciences [S,K] (GER) 3

Sophomore Year

First Semester

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 6
Engl 302 [M] [W] (GER) 3
Engl 305 [H] or 306 [H] (GER) 3
Physical Sciences [P] (GER) 4

Junior Year

First Semester

American Writers of Color 1
Concentration Elective 3
Engl 380, 381, or 382 2
English Literature Elective 3
Electives 3
Complete Writing Portfolio

Second Semester

Concentration Elective 3
Electives 9

Senior Year

First Semester

Concentration Elective 3
Electives 12

Second Semester

Senior Seminar, Senior Thesis, or Internship 3
Tier III Course (GER) 3
Electives 6

1 One from Engl 311, 314, 321, 322, 341, 345, or 346.
2 If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.
3 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.
4 Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).

II. GRADUATE-STUDY PREPARATION DEGREE PROGRAM (120 HOURS) ✔FYDA

Freshman Year

Second Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biological Sciences [B] (GER) 4
Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER) 3
GenEd 111 [A] (GER) 3
Social Sciences [S,K] (GER) 3

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### Sophomore Year

**First Semester**
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 6
- Engl 302 [M] [W] (GER) 3
- Engl 305 [H] or 306 [H] (GER) 3
- Physical Sciences [P] (GER) 4

**Second Semester**
- Engl 383, 384, 385, or 386 3
- Engl 387, 388, or 389 3
- Intercultural [I,G,K] (GER) 3
- Electives 6

### Junior Year

**First Semester**
- American Writers of Color 3
- Concentration Elective 3
- Engl 380, 381, or 382 3
- English Literature Elective 3
- Elective 3
- Complete Writing Portfolio

**Second Semester**
- Concentration Elective 3
- Engl 324 3
- Electives 9

### Senior Year

**First Semester**
- Concentration Elective 3
- English Option Elective 3
- Electives 9

**Second Semester**
- Senior Seminar, Senior Thesis, or Internship 3
- Tier III Course (GER) 3
- Elective 3

1. Psych 105 [S] (GER) required of students planning to certify to teach 4-12; see Dept. of Teaching and Learning for additional requirements for those accepted for certification. (Certification requirements typically add one to two semesters for students.)

2. If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.

3. 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.

4. 300-400-level Engl or Hum course appropriate to future graduate study; if Engl 499, total maximum of 3 credit hours.

5. Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).

### III. ENGLISH TEACHING DEGREE PROGRAM (120 HOURS) ✓FYDA

#### Freshman Year

**Second Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Biological Sciences [B] (GER) 4
- Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER) 3
- GenEd 111 [A] (GER) 3
- Social Sciences [S,K] (GER) 3

#### Sophomore Year

**First Semester**
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 6
- Engl 302 [M] [W] (GER) 3
- Engl 305 [H] or 306 [H] (GER) 3
- Physical Sciences [P] (GER) 4

#### Second Semester
- Biological Sciences [B] (GER) 4
- Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER) 3

### IV. ENGLISH/PRE-LAW DEGREE PROGRAM (120 HOURS) ✓FYDA

Requirements in this option include those of the general degree plus 6 credit hours each in philosophy and political science and 3 in Macroeconomics (among these, Phil 201 Elementary Logic and Phil 260 Ethics are required, with a range of course selections specified for the other areas). In addition to satisfying these requirements, students in this option are urged to elect GER courses in either American cultures, history, or society to round out the broad-based liberal-arts education recommended by law schools.

#### Freshman Year

**Second Semester**
- ComSt 102 [W] (GER) 3
- Engl 383, 384, 385, or 386 3
- Engl 387, 388, or 389 3
- Grammar/Linguistics Elective 3
- Intercultural [I,G,K] (GER) 3

#### Junior Year

**First Semester**
- American Writers of Color 3
- Concentration Elective 3
- Engl 300 1
- Engl 380, 381, or 382 3
- English Literature Elective 3
- Elective 3
- Complete Writing Portfolio

**Second Semester**
- Concentration Elective 3
- Engl 324 3
- Electives 9

#### Senior Year

**First Semester**
- Concentration Elective 3
- Engl 323 3
- Electives 9

### V. ENGLISH/BUSINESS DEGREE PROGRAM (120 HOURS) ✓FYDA

Requirements in this option include those of the general degree plus 22 credit hours distributed as follows: 15 hours in business core courses (B Law 210; Econ 102 or 198; MSF 350; Mgt 301 or Dec S 340; and Mktg 360); 4 hours in computer applications in business (Cpt S 105 or Cpt S 100 and 101); and 3 in ethics (Phil 260). In addition to satisfying these requirements, students in this option are urged to elect GER courses in either ecology, American cultures, history, or society to round out the broad-based liberal-arts education that they will bring to careers in business.
**Freshman Year**

**Second Semester**

- **Hours**
  - Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 6
  - Biological Sciences [B] (GER) 4
  - Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER) 3
  - GenEd 111 [A] (GER) 3

**Sophomore Year**

**First Semester**

- **Hours**
  - Econ 102 [S] or 198 [S] (GER) 3
  - Engl 302 [M] [W] (GER) 3
  - Engl 305 [H] or 306 [H] (GER) 3
  - Physical Sciences [P] (GER) 4
  - Elective 3

**Second Semester**

- **Hours**
  - Cpt S 105 or Cpt S 100 and 101 4
  - Engl 383, 384, 385, or 386 3
  - Engl 387, 388, or 389 3
  - Intercultural [I,G,K] (GER) 3
  - Elective 3

**Junior Year**

**First Semester**

- **Hours**
  - American Writers of Color 1 3
  - B Law 210 3
  - Concentration Elective 3
  - Engl 380, 381, or 382 3
  - MIS 250 or 350 3
  - Complete Writing Portfolio 3

**Second Semester**

- **Hours**
  - Concentration Elective 3
  - English Literature Elective 3
  - Mgt 301 or Dec S 340 3
  - Phil 260 [H] (GER) 3
  - Elective 3

**Senior Year**

**First Semester**

- **Hours**
  - Concentration Elective 3
  - Mktg 360 3
  - Electives 9

**Second Semester**

- **Hours**
  - Engl 402 [M] [W] (GER) 3
  - Senior Seminar, Senior Thesis, or Internship 3
  - Tier III Course (GER) 3
  - Electives 3

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1. One from Engl 311, 314, 321, 322, 341, 345, or 346.

2. If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.

3. 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.

4. If not taken as concentration elective, required for this option.

5. Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).

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**English Minor**

The student must complete a minimum of 16 hours in English courses (excluding 101 and 198), half of which must be 300-400-level. The 16 hours must also include one composition course beyond Engl 101. Engl 209 or 210 is strongly recommended.

**Professional Writing Minor**

The student must complete 16 hours in the following or writing-related courses: Engl 255, 300; Engl 256, 354, 355, 401, or 458; 301 or 302; 402/403; 405 or 498.

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**Preparation for Graduate Study**

Students interested in a graduate program in English at Washington State University should offer preparation in English courses generally approximating one of the five undergraduate programs described above. Students with undergraduate majors in such subjects as philosophy, foreign languages, and history may also be accepted for graduate study in the department. Every student should be well grounded in at least one modern foreign language.

**Description of Courses**

**English**

100 **Basic Writing** 3 Prereq writing placement exam. Designed to introduce students to writing and reading in the university. S, F grading.

101 [W] **Introductory Writing** 3 Prereq writing placement exam or Engl 100. Designed to develop students’ academic writing, critical thinking, rhetorical strategies, reading and library skills. Credit not granted for more than one: Engl 101, 105, and 198.

102 **Writing Tutorial** 3 May be repeated for credit; cumulative maximum 5 hours. Prereq writing placement exam. Student-centered group tutorial focusing on writing improvement usually connected to the Engl 101 or 105 course.

103 **Basic Skills in English ESL** 3 Prereq placement exam. English grammar, composition, and pronunciation for non-native speakers of English. No credit earned toward degree; not qualified for financial aid; course satisfies credit-load requirement for international students on visas.

104 **Intermediate Grammar and Basic Skills ESL** 3 Prereq writing placement exam. Designed to introduce non-native speakers of English to writing and reading in the university.

105 [W] **Composition for ESL Students** 3 Prereq writing placement exam. Designed to develop academic writing, critical thinking, reading, library skills, and rhetorical strategies for non-native speakers of English. Credit not granted for more than one: Engl 101, 105, 198.

106 **Conversation ESL** 1 (0-2) May be repeated for credit; cumulative maximum 2 hours. Oral communication designed specifically to fit the needs of international students.

108 [H] **Introduction to Literature** 3 Reading short stories, novels, plays, and poetry by diverse voices; role of conventions, culture, history in interpretation of literature. Credit not granted for both Engl 108 and 199.

138 **Freshman Special Topics** 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

198 [W] **English Composition Honors** 3 Credit not granted for more than one: Engl 101, 105, and 198. Open only to students in the Honors College.

199 [H] **English Composition and Literature Honors** 3 Credit not granted for both Engl 108 and 199. Open only to students in the Honors College.

200 [W] **Expository Writing** 1 or 2 Prereq sophomore standing. For transfer students who need to make up writing credits.

201 [W] **Writing and Research** 3 Prereq Engl 101 or 105. Designed to develop students’ researching skills for writing across the disciplines.

209 [H] **Readings in English Literature** 3 Selected works by diverse voices from different eras of English literature; importance of conventions, cultural contexts, for interpretation and understanding.

210 [H] **Readings in American Literature** 3 Selected works by diverse voices from different eras of American literature; importance of conventions, cultural contexts, for interpretation and understanding.

216 [H] **American Culture** 3 Introduction to the interdisciplinary study of American cultures and the field of American studies.

220 [H, D] **Introduction to Multicultural Literature** 3 Same as CAC 220.

222 [G] **World Literature in English** 3 Literature in English from such regions as Africa, Asia, and the Caribbean.

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.

261 [H] **Literary Masterpieces** 3 Prereq Engl 101. Works of lasting appeal in world literature from 1800 to the present.

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 [WM] **Writing About Literature** 3 Prereq Engl 101; one college-level literature course or c/+. Rhetorical and problem-solving skills in writing analysis of literary texts; critical approaches, theories of interpretation, use of research.

303 **Revision Workshop - ESL** 3 Prereq [W] 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 [W] 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.
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 CAC 313.
314 [M] Topics in Asian/Pacific American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Same as CAC 314.
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.
332 [M] Topics in Poetry 3 May be repeated for credit; cumulative maximum 6 hours. Forms, history, development of poetry; the epic, the lyric, verse satire, dramatic monologue, modernist verse.
333 [M] Topics in Fiction 3 May be repeated for credit; cumulative maximum 6 hours. Forms, history, development of narrative fiction: the tale, short story, Continental and experimental novel.
334 [M] Topics in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Forms, history, development of drama: comedy, tragedy, Medieval religious drama, theatre of the absurd.
335 [H] The Bible as Literature 3 Historical and literary approach to texts of the Jewish and Christian scriptures; emphasis on history, interpretation, and influence.
338 [M] Topics: Major Trends and Figures 3 May be repeated for credit; cumulative maximum 6 hours. Literary trends or major writers.
339 Topics in Film as Literature 3 May be repeated for credit; cumulative maximum 6 hours. Analytical study of film as major literary genre.
341 [G,M] Native American Literature 3 Same as CAC 373.
346 Vanguard Poetics in Chicano/Latino Writers 3 Same as CAC 354.
351 Creative Writing: Prose 3 Prereq Engl 101. Writing the short story: practice and theory.
352 Creative Writing: Poetry 3 Prereq Engl 101. Workshop approach to poetry writing.
353 Creative Writing: Nonfiction 3 Prereq Engl 101. Writing literary nonfiction: practice and theory.
354 History of the English Language 3 Prereq one year For L. Language related to the origin, history, and literature of its speakers.
355 Multimedia Authoring: Exploring New Rhetorics 3 Prereq Engl 301 or F A 331. 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.
357 Topics in Magazine Editing and Creative Writing 3 May be repeated for credit; cumulative maximum 6 hours. Magazine editing, audience, and cultural contexts; professional publishing techniques; other specialized topics in professional and creative writing.
366 [H] The English Novel to 1900 3 Classic English novels in cultural perspective by such authors as Defoe, Fielding, Austen, the Brontës, Thackeray, Dickens, George Eliot, Hardy.
368 [H] The American Novel to 1900 3 Classic American novels in cultural perspective by such authors as Cooper, Hawthorne, Melville, Stowe, Twain, James, Jewett, Chopin, Crane, Dreiser.
380 American Literature to 1855 3 Prereq Engl 302 or substitutions approved by adviser. American writing from Settlement and Revolution through the times of Irving, Poe, Emerson, Hawthorne, Fuller, Thoreau, and Melville.
381 American Literature 1855-1916 3 Prereq Engl 302 or substitutions approved by adviser American writing in an era of expansion, social and literary ferment: Whitman, Dickinson, Frost, the literature of realism and naturalism.
382 Modern American Literature 3 Prereq Engl 302 or substitution approved by adviser. Major literary movements and alternate voices in American poetry, fiction, and drama from WW I to the present.
383 Chaucer and Medieval Literature 3 Prereq Engl 302 or substitution approved by adviser. Chaucer's Canterbury Tales in the context of Medieval culture and literary tradition.
385 Milton and English Literature of the 17th Century 3 Prereq Engl 302 or substitution approved by adviser. Nondramatic literature from the Metaphysicals and Jonson through Milton, against background of scientific revolution, religious controversy, and civil war.
386 English Literature of the Restoration and 18th Century 3 Prereq Engl 302 or substitution approved by adviser. Neo-classical literature from 1660 to the Romantic era: Dryden, Swift, Pope, Johnson, Gray, Goldsmith, Burns, and others.
387 English Romantic Literature 3 Prereq Engl 302 or substitution approved by adviser. Major works by Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, and others during Romantic literary revolt, especially 1798-1832.
388 Victorian Literature 3 Prereq Engl 302 or substitution approved by adviser. Major works by Tennyson, Dickens, Browning, Swinburne, Wilde, and others in a dynamic age of change in Britain, 1832-1901.
389 Modern British Literature 3 Prereq Engl 302 or substitution approved by adviser. Fiction, drama, poetry in age of conflict, artistic experimentation: Joyce, Woolf, Lawrence, Murdoch, Shaw, Pinter, Auden, and others.
391 Topics—Study Abroad 3
392 Topics—Study Abroad 3
394 Topics—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.
401 History of Rhetoric 3 Survey of influential theories of rhetoric, ancient to modern.
402 [WM] Technical and Professional Writing 3 Prereq Engl 101, junior standing. Research writing: defining, proposing, reporting progress; presenting a final product; other professional writing needs. Credit not granted for both Engl 402 and 403.
405 Advanced Professional Writing and Editing 3 Prereq Engl 402 or by interview. Professional writing and editing: textual alterations, design, and layout, including internship experience.
409 [T,H] 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 Cultural Criticism and Theory 3 Same as CAC 405.
415 [T,H] 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,H] 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. Technical introductions to generative analysis of sentences and to sound systems of human languages. Credit not granted for both Engl 443 and 543.
451 Advanced Creative Writing: Prose 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Engl 351 or consent of instructor. Writing the novel.
452 Advanced Creative Writing: Poetry 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Engl 352 or consent of instructor. Workshop approach to poetry writing for the advanced student.
458 Topics in Sociolinguistics and Psycho-linguistics 3 May be repeated for credit; cumulative maximum 6 hours. Relationship of language to social and psychological structures.
470 [T] Literature and Culture of the American West 3 Prereq completion of one Tier I and three Tier II courses. Cultural exploration of American West in written texts; outsider and insider visions of reality and imagination of its diverse peoples.
471 [H] Cultural Politics Since World War II 3 Same as Am St 471.
472 [T] Ecological Issues and American Nature Writing 3 Same as Am St 472.
492 [M] Advanced Topics in English Literature 3 Prereq senior in English. 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 Prereq senior in English. Not open to graduate students. Seminar with term paper project; focused studies in English literature.
494 M Advanced Topics in American Literature 3 Prereq senior in English. 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 Engl. Cooperative learning experience in business, education, or industry in English-related jobs. S, F grading.

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

500 Introduction to Graduate-Level Writing for ESL Students 3 Prereq graduate standing. Introduction to the linguistic and rhetorical conventions of graduate-level writing, including the preparation and defense of master's theses and dissertations.

501 Seminar in the Teaching of Writing: Methodology of Composition 3 Development of a workable definition of the methods of composing through a review of relevant research and problem-solving exercises.

502 Seminar in the Teaching of Writing: Contemporary Theories 3 Contemporary theories of composition and their application to the classroom.

503 Old English: Anglo-Saxon 3 Old English language and its literature with emphasis on short lyrics and prose.

504 Old English: Beowulf 3 Prereq Engl 503. Advanced study of Old English language and literature with focus on the epic Beowulf.

506 Seminar in 16th Century English Literature 3 May be repeated for credit; cumulative maximum 6 hours. Theoretical issues and practical experience in ESL classroom situations. Cooperative course taught by WSU; open to UI students (Eng 514).

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 Major theories and methods currently used by American Studies scholars; key concepts in cultural analysis.

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 susasive 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 Lab 3 Prereq Engl 501 or 502 or consent of Writing Lab Director. Combining theory and practice in writing lab supervision and management. Interns will work under direct faculty supervision.

532 Teaching Writing to Nontraditional Students 3 Prereq Engl 501, 502, or by interview only. 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.

541 Seminar in TESOL and Linguistics 3 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught by UI (Eng 510), open to WSU students.

543 Problems in English Linguistics: Syntax and Phonology 3 May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of Eng 443; additional requirements. Credit not granted for both Eng 443 and 543. Cooperative course taught jointly by Wsu and UI (Eng 543).

544 TESOL: Theory and Methods 3 May be repeated for credit; cumulative maximum 6 hours. Theoretical issues and practical experience in ESL classroom situations. Cooperative course taught by Wsu; open to UI students (Eng 514).

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.

560 Seminar in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Historical and generic studies in dramatic literature.

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.

591 The Teaching of Literature 3 Prereq two semesters full-time enrollment in program or consent of adviser. The theory and practice of designing and teaching courses in literature.

592 Language Arts: Methods of Composition 3 Methods of composition and relevant research in language arts.

593 Language Arts: Theories of Composition 3 Contemporary theories of composition and their application to the language arts classroom.

595 Topics in English 3 May be repeated for credit; cumulative maximum 6 hours. Language, English pedagogy, or literature of special or current interest; reading theories, teaching of writing, current literary theories.

596 Topics in American Studies 3 May be repeated for credit; cumulative maximum 9 hours. Graduate-level counterpart of Engl 496; additional requirements. Credit not granted for both Engl 496 and 596.

597 Topics in Composition and Rhetoric 3 May be repeated for credit; cumulative maximum 6 hours. Rhetoric and composition theory and practice.

598 Teaching Apprenticeship 1 May be repeated for credit. S, F grading.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Entomology


Insects and other related arthropods are the dominant consumers in all terrestrial ecosystems. There are far more kinds of insects than all other creatures combined. They compete at all levels with humans in the production, processing and use of food and fiber resources. They are a major health threat to most of the world's people. In-depth knowledge in basic areas of insect identification, morphology, physiology, behavior and ecology are prerequisites to developing and applying control measures against our arthropod competitors. Ecological and legal restrictions on pesticide usage require people who are knowledgeable in the safe use of pesticides and in the effect of such use on the environment.

The entomology curriculum provides the opportunity to study the basic and applied aspects of entomology. 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.

The curriculum prepares students for graduate study in entomology or for employment in institutional or...
private pest control oriented areas. 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: apiculture behavior, integrated biological control and sustainable pest management, ecology, forest entomology, insect/plant relationships, medical/veterinary entomology, population genetics, physiology, systematics, and environmental toxicology. Departmental faculty at outlying research centers also serve as advisers for graduate student research and sometimes teach over WHETS. Extensive insect collections, insectary, quarantine, computer and video facilities support teaching, extension, and research. The department is committed to developing an integrated biological control approaches to pest management. This commitment is reflected in the broad involvement of the faculty and evolving curricula in biocontrol.

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.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

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

Students planning to become pest control consultants or pest management specialists should include the following courses: Ag Ec 201, CropG 305; IPM 201, 452, 462; PI P 429; SoilS 201; Stat 310 or 412 and crops courses in CropS and Hort.

ENTOMOLOGY DEGREE PROGRAM (120 HOURS) ✓FYDA

Freshman Year

First Semester

Biol 103 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
GenEd 110 [A] (GER) 3
English 101 [W] 4

Second Semester

Biol 104 [B] (GER) 4
Chem 102 [P] or 106 [P] (GER) 4
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3

Sophomore Year

First Semester

Ag Ec 201 [S] or Econ 102 [S] (GER) 3
Arts & Humanities [H,G] (GER) 3
Entom/IPM Elective 2 or 3

Second Semester

Biol 372 4
Chem 240 or 340 3 or 4
MBioS 301 4
Social Sciences [S,K] (GER) 3

Junior Year

First Semester

Bot 320, Zoology 353, or 353 3 or 4
Entom 344, 344 [M] 4
Math 140 [N] or 205 [N] (GER) 4
Electives 6

Complete Writing Portfolio

Second Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Bot 120, 320, or 332 4
Entom 439 or 440 [M] 4
Electives 6

Senior Year

First Semester

Entom/IPM Electives 7 or 8
Electives 7 or 10

Second Semester

Tier III Course (GER) 3
Electives 12

ENTOMOLOGY HUMAN/ANIMAL HEALTH DEGREE PROGRAM (120 HOURS) ✓FYDA

The Human/Animal Health option is geared toward students interested in pre-professional training and will prepare students for medical, dental, or veterinary professional schools, and will also give a fall-back opportunity for degree holders in the areas of professional human and animal health, including public health and animal care organizations. Entomology represents a unique discipline that easily bridges between several diverse biological disciplines. Students completing this option should be highly trained pre-professional graduates who will be prepared to enter the public or veterinary health areas or pursue a career in entomology.

Freshman Year

First Semester

Biol 103 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W], 201 [W] or 301 [W] (GER) 3
GenEd 110 [A] (GER) 3

Second Semester

Biol 104 [B] (GER) 4
Chem 102 [P] or 106 [P] (GER) 4
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3

Sophomore Year

First Semester

Ag Ec 201 [S] or Econ 102 [S] (GER) 3
Arts & Humanities [H,G] (GER) 3
Entom/IPM Elective 4 or 5

Second Semester

Biol 372 4
Chem 341 2
MBioS 301 4
Phys 102 [P] or 202 [P] (GER) 4

Junior Year

First Semester

Biol 372 4
Chem 342 3
Entom 439, 440 [M], or 550 4
Stat 212 [N] (GER) or 412 3 or 4

Second Semester

Biol 372 4
Chem 342 3
Entom 439, 440 [M], or 550 4

Second Semester

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

Program Options 5 or 6

Tier III Course (GER) 3

Soo 253, 450, MBioS 340, or 311 4

Entomology Minor

A minimum of 16 hours is required for the minor and must include Entom 343, 344, 439, or 440 and 9 hours from: Entom 348, 441, 448, 449, 450, 462, IPM 201, 452, 462.

Preparation for Graduate Study

As preparation for work toward an advanced degree in entomology, a student should have completed an undergraduate major in some field of biological science, chemistry, forestry or agriculture. Background work should include courses in general biology, organic chemistry, genetics, ecology, entomology, plant science, physical science, and zoology.

INTEGRATED PEST MANAGEMENT

The integrated pest management (IPM) major is a multidisciplinary course of study sponsored by the Department of Entomology. Students electing the IPM major will take courses in the Departments of Crop and Soil Sciences, Entomology, Horticulture and Landscape Architecture, and Plant Pathology. Students acquire a holistic perspective and ecological understanding of the philosophy, principles, and practices of pest management and are trained to become professional crop protection specialists. Students in this major have the option of obtaining a general background in pest management or specializing in the areas of entomology, weed science, and tree fruit IPM within pest management. All students also participate in a summer internship program whereby they have the opportunity to gain work experience through supervised off-campus employment with pest management individuals or organizations.
All students are required to complete a minimum of 120 semester hours of course work, including the internship, to earn the Bachelor of Science degree in Entomology with a major in IPM. At least 40 of the total hours required must be in 300-400-level courses.

**FIRST AND SECOND YEAR REQUIREMENTS**

The requirements for the first two years are common to both integrated pest management degree programs:

### Freshman Year

**First Semester**
- Biol 103 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- IPM 201 2

**Second Semester**
- Biol 104 [B] or Bot 120 [B] (GER) 4
- Chem 102 [P] or 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 140 [N] or Stat 212 [N] (GER) 4
- Psych 105 [S] (GER) 3

### Sophomore Year

**First Semester**
- Ag Ec 201 [S] (GER) 3
- CropS 201 or Hort 201 4
- ES/RF 101 [B] (GER) 4
- ES/RF 174 3
- H D 205 [C] (GER) 3

**Second Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Chem 240 4
- ES/RF 150 [Q] or Zool 150 [Q] (GER) 3
- Intercultural [L,G,K] (GER) 3
- SoilS 201 [B] (GER) 3

### Junior Year

**Fall Semester**
- Arts & Humanities [H,G] (GER) 3
- Bot 320 4
- CropS 305 3
- PI P 429 3
- Complete Writing Portfolio

**Second Semester**
- Biol 372 [M] 4
- Bot 332 4
- Entom 340; or 343, 344 3 or 4
- IPM 452 2
- Elective/Option Course 3

**Senior Year**

**First Semester**
- CropS 403 3
- CropS 445 3
- Tier III Course (GER) 3
- Elective/Option Courses 6

**Second Semester**
- IPM 462 [M] 3
- SoilS 301 3
- Elective/Option Courses 9-12

### Entomology Option Degree Program (130 Hours)  

**Junior Year**

**First Semester**
- Arts & Humanities [H,G] (GER) 3
- Bot 320 4
- CropS 305 3
- PI P 429 3
- Complete Writing Portfolio

**Second Semester**
- Biol 372 [M] 4
- Bot 332 4
- Entom 343, 344 4
- IPM 452 2
- Elective/Option Course 3

**Year 3, Summer Session: IPM 399** 3

**Senior Year**

**First Semester**
- Entom 439 4
- One from: Entom 348, 441, 448 or 450 1-4
- Tier III Course (GER) 3
- Elective/Option Courses 6

**Second Semester**
- IPM 462 [M] 3
- Elective/Option Courses 12-15

### WEED SCIENCE OPTION DEGREE PROGRAM (132 Hours)  

**Junior Year**

**First Semester**
- Arts & Humanities [H,G] (GER) 3
- Bot 320 4
- CropS 302 3
- CropS 305 3
- PI P 429 3
- Complete Writing Portfolio

**Second Semester**
- Biol 372 [M] 4
- Bot 332 4
- Entom 340; or 343, 344 3 or 4
- IPM 452 2
- Elective/Option Course 3
- Year 3, Summer Session: IPM 399 3

**Senior Year**

**Fall Semester**
- CropS 403 3
- CropS 445 3
- Tier III Course (GER) 3

**Second Semester**
- IPM 462 [M] 3
- SoilS 301 3
- Elective/Option Courses 9-12

**TREE FRUIT INTEGRATED PEST MANAGEMENT DEGREE PROGRAM (146 Hours)**

Tree Fruit Integrated Pest Management option in the Entomology B.S. 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 in the tree fruit industry in the Pacific Northwest. The first half of the program is taken at Wenatchee Valley College, with an emphasis on fundamental agricultural, tree fruit production, and orchard management (including pest management) through courses and orchard practicum experiences. Wenatchee Valley College, located in the heart of Washington's tree fruit industry, has teaching orchards and well equipped facilities. The second half of the program is taken at Washington State University where courses provide students with an advanced knowledge of plant science, entomology and pest management, and fulfill remaining GERs necessary for the B.S. degree.

### Freshman Year (Wenatchee Valley College)

**Fall Semester**
- Biol 372 [M] 4
- Bot 332 4
- Entom 343, 344 4
- IPM 452 2

**Second Semester**
- Entom 441 3
- Hort 416 3
- Hort 421 [M] 3
- IPM 462 [M] 3
- SoilS 441 3

**Fall Quarter**
- Agri 255 2
- Agri 296 3

**Winter Quarter**
- Agri 255 2
- Agri 263 5
- Biol 123 5
- Chem 111 5

**Spring Quarter**
- Agri 255 2

**Sophomore Year (Wenatchee Valley College)**

**Fall Semester**
- Arts & Humanities [H,G] (GER) 3
- Bot 320 4
- Chem 240 4
- CropS 305 3
- GenEd 111 [A] (GER) 3
- Complete Writing Portfolio

**Spring Semester**
- Biol 372 [M] 4
- Bot 332 4
- ES/RF 174 3
- GenEd 111 [A] (GER) 3
- IPM 452 2

**Senior Year (Washington State University)**

**Fall Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Bot 325 3
- CropS 360 [I] (GER) 3
- Electives 6

**Second Semester**
- Entom 441 3
- Hort 416 3
- Hort 421 [M] 3
- IPM 462 [M] 3
- SoilS 441 3

**Junior Year (Washington State University)**

**Fall Semester**
- Arts & Humanities [H,G] (GER) 3
- Bot 320 4
- Chem 240 4
- CropS 305 3
- GenEd 111 [A] (GER) 3
- Complete Writing Portfolio

**Spring Semester**
- Biol 372 [M] 4
- Bot 332 4
- ES/RF 174 3
- GenEd 111 [A] (GER) 3
- IPM 452 2

**Senior Year (Washington State University)**

**Fall Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Bot 325 3
- CropS 360 [I] (GER) 3
- Electives 6

**Description of Courses**

- **Entomology**
  - **101 B Insects and People: A Perspective** The world’s most abundant animals and their extensive effects on people yesterday and today.
343 [M] General Entomology 2 Rec Biol 103, 104 or approval of instructor. Biology, natural history, and importance of insects and related arthropods.

344 [M] General Entomology Laboratory 2 (0-6) Prereq Biol 103, 104 rec or approval 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.

361 Honey Bee Biology 1 Biology of the honey bee, including behavior, genetics, evolution, pollination, sociality, and beekeeping practices.

362 Fundamentals of Beekeeping 1 (0-2) Prereq Entom 361 or c/c. Applied beekeeping practices including safety, equipment, colony installation, manipulation for pollination and honey production, honey bee diseases and pests.

375 Fundamentals of Orchard Ecology 3 (2-2) Prereq Entom 340 or two years field experience. Integration and application of knowledge of ecology, identification and life histories of orchard pests and their management.

376 Measuring Populations in Orchards 2 Prereq Entom 400 or c/c. Common sampling methods and factors influencing populations dynamics of arthropods and management options. Field trips required.

377 Biological and Bio-Rational Tactics 2 Prereq Entom 376. Different tools to be used in an integrated pest program for Washington Orchards. Field trips required.

380 Urban Entomology 3 (2-3) Management and biology of urban pests in home, landscape, and recreational environments.

401 [T] Invertebrates in Biological Thought 3 Prereq Biol 104, completion of one Tier I and three Tier II courses; Rec Zool 150. Development of biological ideas and knowledge from antiquity to present with emphasis on major advances achieved through invertebrate models. Cooperative course taught by UI (Ent 401), open to UI students.

439 [M] Taxonomic Entomology 2 (2-0) or 4 (2-6) Prereq Entom 340 or 343. Identification of insect orders and families. Insect collection required. Credit not granted for both Entom 439 and 539.

440 Taxonomy of Immature Insects 2 or 4 (2-6) Prereq Entom 343. Identification of eggs, larvae, nymphs, and pupal stages of insects. Insect collection required. Credit not granted for both Entom 440 and 540.

441 Insect Ecology 3 (2-3) Prereq Entom 343 or general ecology course. Population and community dynamics, theory and application in natural and artificial systems. Field trips required. Credit not allowed for both Entom 441 and 541. Cooperative course taught by UI (Ent 441), open to WSU students.


446 Insect-Plant Interactions: Plant Resistance to Arthropods 1 Prereq Entom 343. Principles and methods of screening and developing crops resistant to arthropods. Cooperative course taught by UI (Ent 446), open to WSU students.

447 Introduction to Biological Control 3 (2-3) Principles and methods of controlling insect pests and weeds by biological means. Credit not granted for both Entom 447 and 547. Cooperative course taught by UI (Ent 447), open to WSU students.

448 Medical Entomology 3 (2-3) Prereq Biol 103, 104. Aspects of medical entomology as they apply to humans. Cooperative course taught by UI (Ent 448), open to WSU students.

449 Veterinary Entomology 1 Prereq Biol 103, 104. Aspects of medical entomology as they apply to non-humans, non-human animals.

450 Principles of Applied Entomology 4 (3-3) Prereq Entom 340 or 343. Utilization of biological, physical, cultural and chemical factors in managing insect pest populations.

460 Insects for Teaching 2 Prereq general biology course. The use of insects in teaching scientific principles in the life sciences.

462 Systems in Integrated Crop Management 3 (2-3) Prereq one semester calculus. Evaluation and use of computer models to make decisions for managing pests, diseases, and crop productivity. Credit not granted for both Entom 462 and 562.

472 Aquatic Entomology 3 (2-3) Identification and biology of insects associated with aquatic and subaquatic environments. Cooperative course taught by UI (Ent 472), open to WSU students.

490 Special Topics in Entomology V 1-4 May be repeated for credit; cumulative maximum 10 hours. Credit not granted for both Entom 490 and 590.

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

511 Principles of Systematic Biology 3 (2-3) Same as Zool 511.

520 Population Analysis 1 Same as NATRS 520.

526 Principles of Population Dynamics 1 Same as Zool 529.

539 Taxonomic Entomology 2 or 4 (2-6) Graduate-level counterpart of Entom 439; additional requirements. Credit not granted for both Entom 439 and 539.

540 Taxonomy of Immature Insects 2 or 4 (2-6) Graduate-level counterpart of Entom 440; additional requirements. Credit not granted for both Entom 440 and 540.

541 Insect Ecology 3 (2-3) Prereq Entom 343; general ecology course. Graduate-level counterpart of Entom 441; additional requirements. Credit not allowed for both Entom 441 and 541. Cooperative course taught by UI (Ent 541), open to WSU students.

543 Predator-Prey Dynamics 1 Prereq calculus, general ecology, statistics. Dynamical consequences of interactions between predators and their prey at the population, community and ecosystem level.

545 Insect-Plant Interactions: Mechanisms of Resistance to Arthropods 3 (2-3) Graduate-level counterpart of Entom 445; additional requirements. Credit not allowed for both Entom 445 and 545. Cooperative course taught by UI (Ent 445), open to WSU students.

546 Host Plant Resistance 3 Prereq graduate standing. Graduate-level counterpart of Entom 446; additional requirements. Credit not granted for both Entom 446 and 546. Cooperative course taught by UI (Ent 546), open to WSU students.

547 Introduction to Biological Control 3 (2-3) Graduate-level counterpart of Entom 447; additional requirements. Credit not granted for both Entom 447 and 547.

550 Insect Physiology 4 (3-3) Prereq Chem 240, Zool 352; Entom 340 or 343 or Zool 322. General principles of insect physiology; the mechanisms of vital processes in insects: organ, cellular, subcellular, chemical and physical levels. Cooperative course taught by WSU, open to UI students (Ent 550).

551 Biological Control of Weeds 1 Prereq general ecology. Principles, methodologies, and implementation of biological control of weeds in noncropland environments. Cooperative course taught by WSU, open to UI students (Ent 451/551).


553 Applied Biological Control: Microbial Control 1 Prereq microbiology, plant pathology, or entomology; principles of biochemistry. Principles and methodologies of microbial control of insect pests, weeds, and plant pathogens in agriculture and forestry. Cooperative course taught by UI (Ent 553), open to WSU students.

556 Insecticides: Toxicology and Mode of Action 1 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Insecticides in terms of historical perspective, classification, synthesis, toxicity, mode of action, and metabolism.

557 Herbicides: Toxicology and Mode of Action 1 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Herbicides in terms of historical perspective, classification, synthesis, toxicity, mode of action, and metabolism.

558 Pesticide Topics 1 Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Current issues concerning pesticides in terms of toxicity, mode of action, and metabolism.

562 Systems in Integrated Crop Management 3 (2-3) Graduate-level counterpart of Entom 462; additional requirements. Credit not granted for both Entom 462 and 562.

583 Physiological Interactions in Predator-Prey Relationships 1 Prereq Biol 102, Rec general biology. Intricate physiological and behavioral adaptations that have evolved in predator-prey relationships.

590 Special Topics in Entomology V 1-4 May be repeated for credit; cumulative maximum 10 hours. Graduate-level counterpart of Entom 490; additional requirements. Credit not granted for both Entom 490 and 590.

593 Seminar 1 May be repeated for credit. Prereq 20 hours biology. Reporting and discussing problems and research in entomology.

595 Noncropland Weed Biological Control Internship V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing, by interview only. Supervised individual practicum in noncropland weed biological control; professionally related field interaction. Cooperative course taught by WSU, open to UI students (Ent 595).

600 Special Projects or Independent Study Variable credit. S, F grading.
452 Pesticides and the Environment
2 Rec 12 hours Biol. Immediate and prolonged effects of pesticides on man and other animals; legal and moral repercussions of pesticide use. Credit not granted for both IPM 452 and 552.
552 Pesticides and the Environment 2 Graduate-level counterpart of IPM 452; additional requirements. Credit not granted for both IPM 452 and 552.
562 Systems of Integrated Pest Management 3 (2-3) Graduate-level counterpart of IPM 462; additional requirements. Credit not granted for both IPM 462 and 562.

Program in Environmental Science and Regional Planning

Professor and Program Chair, W. W. Budd; Professors, G. W. Hinman (Emeritus), G. L. Young; Associate Professors, F. A. Ford, E. H. Franz, W. G. Hendrix, E. J. Rykiel, Jr.; Assistant Professors, E. J. Brook, S. D. Hacker; Program Coordinator at WSU Tri-Cities and Associate Professor, R. G. Schreckhise; Program Coordinator at WSU Vancouver and Associate Professor, B. Tissot; Academic Coordinator for General Science at WSU Tri-Cities, E. B. Moore, Jr.; Senior Research Scientist, A. L. Brooks.

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.

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 in Environmental and Natural Resource Sciences. The master's and bachelor's 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 flexible designed in a unique, multi-optional interdisciplinary context. Environmental science majors can specialize in agricultural ecology, biological science, human or cultural ecology, environmental education, environmental quality control, hazardous waste management, natural resource management, physical science, systems and environmental land-use planning. Regional planning majors can specialize in a variety of areas including land-use planning, ecological planning, geographic assessment and planning, and environmental policy and planning. Environmental science majors specializing in environmental education may work toward senior high school teaching certificates with endorsements for the major and minors in physical and biological science.

The program is closely coordinated with the Environmental Research Center and other university research units. It is administratively supported by the Colleges of Agriculture and Home Economics, Engineering and Architecture, Sciences and Liberal Arts. The participating faculty resource list for the program includes some 65 members representing many disciplines.

Certification Requirements

Requirements for certification into the Bachelor of Science Program in Environmental Science:

1.) completion of 30 semester hours of course work with a g.p.a. 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.)

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

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 adviser to provide an individualized area of specialization. The program has identified nine optional areas of specialization: agricultural ecology, biological science, hazardous waste management, human ecology, environmental education, environmental quality (air & water), natural resources management, systems, and environmental/land use planning. (Fact sheets on each option are available from the ES/RP Program Office.) Students may also, in consultation with their adviser, develop an area of specialization outside of those identified. At least 40 of the total hours required for the Bachelor of Science in Environmental Science must be in the 300-400-level courses, 18 of which are in the chosen area of specialization (normally in not more than two departments). Majors in environmental science must satisfy General Education Requirements as specified for majors in the College of Science and the College of Liberal Arts. Many of these requirements are built into the curriculum below. Students should note the requirements with respect to Tier I, II, and III courses. 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.

ENVIROMENTAL SCIENCE DEGREE PROGRAM (123 HOURS)

Freshman Year

First Semester

Chen 105 [P] (GER) 4
Engl 101 [W] (GER) 3
ES/RP 101 [B] or 150 [Q] (GER) 3 or 4
Math 140 [N] or 171 [N] (GER) 4

Second Semester

Anth 101 [S] or Soc 101 [S] (GER) 3
Arts & Humanities [H,G] (GER) 3
Chem 106 [P] (GER) 4
Econ 101 [S] (GER) 3
GenEd 110 [A] (GER) 3

Sophomore Year

First Semester

Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Biol 103 [B] (GER) 4
Engl 201 [W], 301 [W], or 402 [W] (GER) 3
ES/RP 210 3
Phys 101 [P] or 201 [P] (GER) 4

Second Semester

Biol 104 [B] (GER) 4
Chem 240 or 340 & 341 4 or 5
GenEd 111 [A] or Geol 102 [P] (GER) 3 or 4
Phys 102 [P] or 202 [P] (GER) 4

Junior Year

First Semester

Hours
ES/RP 335 [M] 3
GenEd 111 [A] or SoilS 201 [B] (GER) 3
MBioS 301 or 302 4
MBioS 303 4
Elective 3
Complete Writing Portfolio 3

Second Semester

Hours
Anth 309 [K] (GER)1 3
Biol 372 4
ES/RP 490 1
Stat 212 [N] (GER) or 412 3 or 4
Elective 3
Senior Year
First Semester  Hours
Biol 474 3
ES/RP 404 [M] 3
ES/RP 491 1
300-400-level Soc [S,K] (GER) 3
Electives 6

Second Semester  Hours
300-400-level Ag Ec or Econ 3
ES/RP 444 3
Tier III Course (GER) 3
Electives 6

NOTES
1 Other or other 300-400-level Anth with [I] or [K] designation with adviser’s approval.
2 One of the following is suggested: Soc 315, 331, 430.
3 One of the following is suggested: Ag Ec 311, 425, 480, or Econ 472, 481.

Minors in 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 adviser.

Preparation for Graduate Study
Before applying for admission to the graduate programs, a student should have completed a graduate 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 g.p.a. of 3.0. For graduate study in environmental science, previous course work in sociology or cultural anthropology, conservation of natural resources, biological science, chemistry or physics, calculus, and ecology is required. Students interested in assistantships should provide Graduate Record Examination scores. General requirements for the Master of Science degree in Environmental Science include 300-400-level or graduate-level courses in ecology; mathematics, statistics, or computer science; applied physical, biological, or social science; environmental impact assessment; graduate seminar; and special topics in environmental science; an option (an area of specialization) with a minimum of 10 credit hours of courses; and a thesis or special project. A minimum of 32 hours of graduate credit is required. The program has been successful in placing MS graduates in a variety of positions with federal, state, and local agencies, industries, and academia, as environmental and resource management specialists. Students entering the Master of Regional Planning (MRP) program are expected to have 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 g.p.a. 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 not less than 35 graduate credit hours, including a minimum of 9 hours of core planning courses, and 6 hours of thesis or 4 hours of project credit.

MRP candidates are expected to develop a specialization through course work in an allied discipline, but the philosophy of the program is oriented toward preparing graduates for practice in public agencies, tribal agencies, or as consultants in the private sector.

Students entering the PhD program should have a g.p.a. of at least 3.0, 10 semester hours of basic biological and/or physical sciences, and a faculty member to act as adviser. A total of 72 hours is required beyond the bachelor’s degree, 34 of which must be in graded course work.

Environmental Science and Regional Planning

ES/RP
150 [Q] Natural Science in the Environment 3 (2-3) Introduction to scientific principles and problem solving with applications to studies of the environment.
174 Introduction to Meteorology and the Atmospheric Environment 3 Same as C E 174.
301 Forest and Range Plant Resources 3 (2-3) Same as NATRS 301.
310 (210) 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 Same as Ag Ec 311.
325 (425) Economic Analysis of Environmental Policies 3 Same as Ag Ec 325.
375 Aspects of Sustainable Development 3 Same as Econ 375.
385 GIS Primer 3 (2-2) Introduction to basic concepts and applications of geographic information systems (GIS), lab exercises on PC-based GIS packages. Cooperative course taught by UI (Geog 385), open to WSU students.
402 Human Health and the Environment 3 Prereq Biol 103, 104, Chem 105, 106; ES/RP 335 or junior in ES/RP. Problem-solving approach to adverse effects on human health caused by contamination of the environment or anthropogenic changes in ecosystems. Credit not granted for both ES/RP 402 and 502.
403 Environmental Geology 3 Same as Geol 403.
406 Introduction to Radiological Science 2 Prereq one course each in biology, calculus, chemistry, and physics. Fundamentals of atomic physics; interactions of radiation with matter; radiation dosimetry and biology, 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 Limnology 4 (2-2) Same as Zool 411.
412 [M] Natural Resource Policy and Administration 3 (2-2) Same as NATRS 438.
414 Environmental Biophysics 2 Same as SoilS 414. Credit not granted for both ES/RP 414 and 514.
415 Environmental Biophysics Lab 1 (0-3) Same as SoilS 415.
416 Radiation Biology 4 (3-3) Prereq introductory radiological physics, or one course each in biology and radiological physics; Rec ES/RP 406. Effects of ionizing radiation at the molecular, cellular, organ and organism level. Credit not granted for both ES/RP 416 and 516.
418 Human Issues in International Development 3 Same as Anth 418.
419 Fundamentals of Risk Assessment 2 Prereq Biol 103, 372; Math 107; Stat 412. Overview of risk assessment processes; identification of toxicological effects; introduction to methods used to quantify potential health and environmental risks.
420 Field and Laboratory Techniques in Environmental Science 2 May be repeated for credit; maximum 6 hours. Prereq Biol 372; Chem 105. Fundamentals and hands-on experience on the use of field and laboratory techniques and instruments utilized in environmental science. Field trips required.
424 Environmental Health Assessment 2 Prereq one course each in biology, calculus, chemistry, general ecology and physics; Rec ES/RP 406. Environmental transport, fate and effects of radioactive and hazardous materials. Credit not granted for both ES/RP 424 and 524.
426 Population Analysis 1 Same as NATRS 426. Credit not granted for both ES/RP 426 and 526.
427 Environmental Chemistry 2 Same as Chem 427. Credit not granted for both ES/RP 427 and 527.
428 Introduction to Pollution Prevention 3 Environmental, technical and legal aspects of pollution prevention. Cooperative course taught jointly by WSU and UI (EnvS 528).
429 Population Theory 1 Same as NATRS 429. Credit not granted for both ES/RP 429 and 529.
435 Resolving Environmental Conflicts 4 (3-3) Same as RS 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)

513 Environmental Epidemiology 3 Prereq Stat 342, Rec MBioS 446; Stat 422. Environmental epidemiologic methods to investigate environmental problems and familiarity with relevant scientific literature.

514 Environmental Biophysics 2 Graduate-level counterpart of ES/RP 441; additional requirements. Credit not granted for both ES/RP 441 and 514. Cooperative course taught by WSU, open to UI students (Bot 545).

516 Radiation Biology 4 (3-3) Graduate-level counterpart of ES/RP 416; additional requirements. Credit not granted for both ES/RP 416 and 516.

517 Fate and Effects of Environmental Contaminants 3 Prereq: graduate standing. Rec: biochemistry, organic chemistry. Rational perspective on the environmental behavior and biological effects of contaminants.

519 International Development and Human Resources 3 Same as Anth 519.

524 Environmental Health Assessment 2 Graduate-level counterpart of ES/RP 424; additional requirements. Credit not granted for both ES/RP 424 and 524.

526 Population Analysis 1 Same as NATRS 526. Credit not granted for ES/RP 426 and 526.

527 Environmental Chemistry 2 Same as Chem 527. Credit not granted for both ES/RP 427 and 527.

528 Environmental Management Systems 3 (2-3) Introduction to EMS standards; procedures and requirements for EMS certification; creations and auditing of an EMS.

529 Population Theory 1 Same as NATRS 529. Credit not granted for both ES/RP 429 and 529.

530 Fundamentals of Industrial Safety 2 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 P/T 505. Overview of the field of environmental toxicology; interactions of zoobiotics 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) Same as RS 535. Graduate-level counterpart of ES/RP 435; additional requirements. Credit not granted for both ES/RP 435 and 535.

541 Environmental Assessment 4 Graduate-level counterpart of ES/RP 444; additional requirements. Credit not granted for both ES/RP 444 and 541. 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, special problems arising from ownership of land by governments, legal issues incident various uses of public land 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).

551 Energy Production and the Environment 2 Graduate-level counterpart of ES/RP 453; additional requirements. Credit not granted for both ES/RP 453 and 551.

552 Environmental Microbiology 3 Same as MBioS 552. Credit not granted for both ES/RP 452 and 552.

555 Environmental Planning 3 State, local and federal approaches to environmental planning and their interactions in private and public land use and development decisions.

556 Insecticides: Toxicology and Mode of Action 1 Same as Entom 556.

557 Herbicides: Toxicology and Mode of Action 1 Same as Entom 557.

558 Pesticide Topics 1 Same as Entom 558.

560 Watershed Management 3 Same as NATRS 560.

567 Advanced Applications in GIS 4 (1-6) GIS concepts using ARCGIS geographic information systems.

571 Meteorology 3 Same as C E 571. Credit not granted for both ES/RP 471 and 571.

573 Engineering Risk Assessment for Hazardous Waste Evaluations 2 Graduate-level counterpart of ES/RP 473; additional requirements. Credit not granted for both ES/RP 473 and 573. Cooperative course taught by UI (Chem 580), open to WSU students.

575 Geographic Information Systems 3 Prereq: Geol 385. Computerized management of data organized on regional geographic bases; preparation of data for regional planners and land managers. Cooperative course taught by UI (Geog 475), open to WSU students.

584 Engineering Aspects of Aquatic Biology 4 (3-3) Same as C E 584.

585 Aquatic System Restoration 3 (2-3) Same as C E 585.

586 Introduction to Geographic Information Systems 4 (2-6) Graduate-level counterpart of ES/RP 486; additional requirements. Credit not granted for both ES/RP 486 and 586.

590 Special Topics 2 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught by WSU, open to UI students (Geog 590).

591 Special Topics 2 May be repeated for credit; cumulative maximum 4 hours.

592 Special Topics 1-4 May be repeated for credit; cumulative maximum 8 hours.

593 Seminar in Environmental Science and Regional Planning 1 May be repeated for credit, cumulative maximum 8 hours.

594 Seminar in Environmental Policy and Planning 1 May be repeated for credit, cumulative maximum 8 hours.

Program in Environmental Science and Regional Planning
BACHELOR OF FINE ARTS (BFA) DEGREE PROGRAM (121 HOURS)

For the degree Bachelor of Fine Arts a total of at least 70 hours in fine arts are required; 46 of these must be in 300-400-level courses. Students should prepare for BFA certification during fall semester of the junior year. BFA certification requirements: 9 hours from F A 102, 103, 110, 111, 320, 350; 3 hours from F A 201 or 202; 6 hours in major emphasis; 2.0 cumulative g.p.a. in F A courses; and slide portfolio and exhibit presentation of original art work.

Freshman Year

First Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>F A 102</td>
<td>3</td>
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<tr>
<td>F A 110</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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Second Semester

<table>
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<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Communications Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>F A 103</td>
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<td>F A 111</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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Sophomore Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>F A 201</td>
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</tr>
<tr>
<td>F A 320</td>
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</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>F A 202</td>
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<tr>
<td>F A 350</td>
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Junior Year

First Semester

<table>
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<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level F A Elective</td>
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<tr>
<td>F A 303</td>
<td>3</td>
</tr>
<tr>
<td>F A 312</td>
<td>3</td>
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<tr>
<td>Science Elective (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Second Semester

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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<td>300-400-level F A Electives</td>
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Senior Year

First Semester

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<td>300-400-level F A Electives</td>
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<td>F A [M]</td>
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<tr>
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Second Semester

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<th>Course</th>
<th>Hours</th>
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<td>300-400-level F A Electives</td>
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</tr>
<tr>
<td>F A [M]</td>
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</tr>
<tr>
<td>F A 493</td>
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<tr>
<td>Elective</td>
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BACHELOR OF ARTS IN FINE ARTS DEGREE PROGRAM (120 HOURS)

For the degree Bachelor of Arts in Fine Arts a total of at least 47 hours of fine arts is required; 29 of these hours must be in 300-400-level courses. Students may certify their BA in Fine Arts after completing the following requirements: 9 hours from F A 102, 103, 110, 111, 320, 350; 3 hours from F A 201 or 202; and a 2.0 cumulative g.p.a. in F A courses.

Freshman Year

First Semester

<table>
<thead>
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<th>Course</th>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>F A 102</td>
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<td>F A 110</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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Second Semester

<table>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Communications Proficiency [C,W] (GER)</td>
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<tr>
<td>F A 103</td>
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<td>F A 111</td>
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Sophomore Year

First Semester

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<tr>
<th>Course</th>
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<td>F A 201</td>
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<tr>
<td>F A 320</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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Second Semester

<table>
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<th>Course</th>
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<tbody>
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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<tr>
<td>F A 202</td>
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<td>F A 350</td>
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<td>Math Proficiency [N] (GER)</td>
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Junior Year

First Semester

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<th>Course</th>
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<tr>
<td>F A 303</td>
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<tr>
<td>F A 340 or 351</td>
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<tr>
<td>Science Elective (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<td>Complete Writing Portfolio</td>
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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>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<tr>
<td>F A 304</td>
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<tr>
<td>Elective</td>
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Senior Year

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<tr>
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<td>6</td>
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<tr>
<td>F A [M]</td>
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</tr>
<tr>
<td>F A 493</td>
<td>2</td>
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<td>Elective</td>
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</table>

Department of Fine Arts

Professor and Department Chair, P. Lee; Professors, J. Dolthausen, R. Helm, F. Ho, P. Siler, C. Watts; Associate Professors, A. Christenson, C. Ivory; Assistant Professors, E. Blair, K. Haas, A. Mooney, P. Nguyen.

The Fine Arts Department offers a diversity of experiences in the visual arts. The department offers courses of study leading to the degrees of Bachelor of Arts in Fine Arts, Bachelor of Fine Arts and Master of Fine Arts. Our Bachelor of Arts and Bachelor of Fine Arts programs are designed to open doors into the world of visual expression and intellectual development. In particular, we encourage students to sample a variety of art disciplines and make an informed choice about their direction in art. The department includes some seven areas of emphasis within which to develop a program: drawing, painting, sculpture, printmaking, ceramics, photography, and electronic imaging. These are supported by a strong art history component. Many career possibilities involving art exist in the world outside the university. The reality of having a degree in Fine Arts versus what you can do with it is an issue of great concern to the faculty and is positively addressed within our program.

Students interested in preparing for secondary and primary art teaching may pursue a Bachelor of Arts or Bachelor of Fine Arts degree for their subject-matter preparation. The Department of Teaching and Learning of Art does not offer a certification program in art education.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

594 Environmental and Natural Resources Issues and Ethics 2 or 3 Same as NATRS 594.

595 Graduate Internship V 2-5 By interview only. Practical work experience in appropriate agencies; for graduate career students. S, F grading.

596 Cooperative Education Internship V 2-5 May be repeated for credit; cumulative maximum 5 hours. By interview only. Practical experience in appropriate agencies; for career graduate students in environmental science and regional planning. 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.

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Certification Process
Prospective applicants for certification are responsible for acquainting themselves with all requirements and procedures. Details including specific course requirements and portfolio submission are available in the departmental office.

Bachelor of Fine Arts certification requirements:
1. 12 hours from F A 103, 110, 111, 320, 350; 3 hours from F A 201 or 202; 6 additional hours in major emphasis; 2.0 cumulative g.p.a. in F A courses; 2.0 cumulative g.p.a. in F A courses.

Bachelor of Fine Arts certification requirements:
1. 12 hours from F A 103, 110, 111, 320, 350; 3 hours from F A 201 or 202; 2.0 cumulative g.p.a. in F A courses.

Art Minor
A minor in art requires 18 hours including F A 103, Fundamentals; F A 110, Drawing; and F A 201, 202, or 304, Modern Art. The remaining 9 hours of electives must be in 300-400-level courses.

Art History Minor
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.

Transfer Credits
The Department of Fine Arts will accept up to 18 credit hours in art toward the major and 9 credit hours in art toward the minor.

Exchange Program
The Department of Fine Arts has a tuition-free exchange for four students with the School of Fine Arts at Nihon University, Tokyo, Japan. All art majors at WSU are eligible for this one-year study in Japan. Selection is made in the winter. Other opportunities for undergraduate study abroad in Europe, Australia, and the Far East are available from the Office of International Students and Scholars.

Graduate Study
The Fine Arts Department graduate program offers the MFA degree in two-dimensional studio arts and in three-dimensional studio arts. The student may place major or minor emphasis in any of the following areas: drawing, electronic imaging, painting, photography, printmaking, ceramics, and sculpture.

Description of Courses

Art History

FA 101 [H] Introduction to Art 3 For nonmajors. Appreciation of various visual art forms; emphasis on contemporary period.
FA 201 [H] World Art History 3 Historical survey of art and architecture from prehistory through 1450.
FA 202 [H] World Art History 3 Historical survey of art and architecture from 1450 to the present.
FA 301 [G] The Art of Africa, Native America, and the Far East 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.
FA 302 [G] The Arts of Asia 3 Prereq GenEd 110, 111. Art and architecture of India, China, and Japan, within their historical, religious, and cultural contexts.
FA 303 [H] Modern Art 19th Century 3 Prereq F A 201, 202. Modern art in the early modern period from around the globe.
FA 308 [H, M] Women Artists I, Middle Ages—1900 3 Survey of women artists from Middle Ages to the beginnings of modern art.
FA 310 [H, M] Women Artists II, Twentieth Century 3 Survey of women artists from the beginnings of modern art through the twentieth century.
FA 403 [M] Modern Theories of Art 3 Selected topics in 19th and 20th century theories of art.
FA 404 [M] Advanced Non-western Art History 3 May be repeated for credit; cumulative maximum 6 hours. Prereq F A 201, 202. Different topics related to the arts in Africa the Americas, Oceania, and Asia.
FA 405 [M] Contemporary Art: Theory and Practice 3 Contemporary theories of art and how those theories are developed.
FA 498 Contemporary Issues Seminar 2 May be repeated for credit; cumulative maximum 4 hours. Prereq F A 304. Research seminar examining current issues confronting art and artists.
FA 500 Graduate Art History 2 May be repeated for credit; cumulative maximum 6 hours. Prereq 9 hours undergraduate art history.

Studio Courses
Note: unless specified, media used in studio courses are at the option of the instructor.

Foundation

FA 102 Art I 3 (0-6) Introduction to studio practice and composition of form in two-dimensional space.
FA 103 Art II 3 (0-6) Introduction to studio practice and composition of form in three-dimensional space.

Drawing

FA 110 Drawing 3 (0-6) Composition in pictorial space, visualization of ideas, drawing from life.
FA 111 Figure Drawing 3 (0-6) Prereq F A 102, 110.
FA 312 Advanced Drawing 3 (0-6) May be repeated for credit. Prereq F A 110 or 111. Advanced projects using drawing media and process.
FA 313 Figure Drawing 3 (0-6) May be repeated for credit. Prereq F A 111.
FA 510 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.
FA 511 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.
FA 512 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Painting

FA 320 Beginning Painting 3 (0-6) Prereq F A 102, 103, 110. Basic painting introduction to composition and color structure.
FA 321 Intermediate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 320.
FA 322 Transparent Watercolor 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 103, 110.

Electronic Imaging

FA 331 Art and Its Relationship to New Technologies 3 Introduction to visual communication through technology; historical overview and cultural implications of photography, film, video, and electronic art.
FA 332 Introduction to Electronic Imaging 3 (0-6) Prereq F A 102, 110, 131. Principles and processes of electronic image processing, image/text design and designing for the internet.
FA 433 Digital Printing 3 (0-6) May be repeated for credit. Prereq F A 331, 332. Vector-based drawing, advanced image processing and page layout techniques; emphasis on strengthening research and conceptual skills.
FA 434 Multimedia and Web Design 3 (0-6) May be repeated for credit. Prereq F A 331, 332. Emphasis on creating multimedia and worldwide web projects; dynamic HTML, CGI scripting, digital video, animation, and multimedia authoring.
FA 495 Electronic Imaging Partnership V 3-12 May be repeated for credit. F A 434, major in F A. Placement in work-related electronic imaging environments for practical application and experience.
FA 530 Graduate Electronic Imaging 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Application of image/text, electronic drawing, internet projects, multimedia, other aspects of electronic tools.
FA 531 Graduate Electronic Imaging 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Advanced research in projects relating to electronic tools.
FA 532 Graduate Electronic Imaging 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Exploration of experimental techniques, concepts and studies using electronic technology.

Ceramics

FA 340 Ceramics 3 (0-6) Prereq F A 102, 110, 130. Handbuilding processes; the potter's wheel; glazing; firing.
FA 341 Intermediate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 340.
FA 442 Advanced Ceramics V 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 341.
FA 443 Advanced Ceramics V 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 341.
FA 540 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.
FA 541 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.
FA 542 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Sculpture

FA 350 Sculpture 3 (0-6) Prereq F A 103, 110. Composition of form in the three-dimensional space.
351 Intermediate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 350.

452 Advanced Sculpture V 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 351.

550 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

551 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

552 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Printmaking

F A 370 Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 102, 103, 110. Variety of techniques: screenprinting, etching and lithography; emphasis is given to screenprinting during particular terms.

471 Advanced Printmaking V 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 370.

570 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

571 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

572 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Photography

F A 380 Introduction to Photography 3 An experience with cameras and associate materials and techniques; photography in a historical and aesthetic context.

381 Beginning Photography 3 (0-6) Prereq F A 102, 103, 380. Camera and black/white film used in conjunction with studio and darkroom techniques; composition and aesthetic concepts introduced.

382 Intermediate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 381. Expansion of conceptual building in black/white darkroom and camera techniques; research and portfolio.

385 Digital Imaging/Color Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Introduction to digital imaging software, digital cameras, scanning, and digital output options; conventional chemical-based color photography techniques.

483 Advanced Photography V 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; personal direction; portfolio.

580 Graduate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

581 Graduate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

582 Graduate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Art Education

F A 390 Elementary School Art Education 2 (1-2) Theory and methods for the study and making of art including practice using art media for creative expression.

Gallery Procedures

F A 490 Gallery Procedures with Museum of Art 3 (0-6) or 6 (0-12) May be repeated for credit; cumulative maximum 9 hours. By interview only. Introduction to art museums and galleries, including practicum in exhibition preparation, installation art handling, collections.

Special Topics, Seminars, and Thesis

F A 361 Special Topics—Drawing V 1-6 May be repeated for credit.

362 Special Topics—Painting V 1-6 May be repeated for credit.

363 Special Topics—Electronic Imaging V 1-6 May be repeated for credit.

364 Special Topics—Ceramics V 1-6 May be repeated for credit.

365 Special Topics—Sculprure 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.

400 Special Topics V 1-6 May be repeated for credit; cumulative maximum 18 hours.

401 Special Topics—Art History V 1-6 May be repeated for credit. Prereq 201, 202.

491 Seminar: Advanced Study, Art on Location 3 Travel to art collections in major urban centers; individual student research into how art functions within a major art center.

493 Senior Exhibit 2 Prereq certified BFA major. Independent study involving exhibit, written thesis and oral examination working with area coordinator. S, F grading.

498 Contemporary Issues Seminar 2 May be repeated for credit; cumulative maximum 4 hours. Prereq F A 304, F A major. Research seminar examining current issues confronting art and artists.

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

598 Graduate Seminar 2 May be repeated for credit; cumulative maximum 4 hours. Topics in contemporary issues, theory, and criticism.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

Study Abroad

F A 210 Topics—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

306 Topics—Study Abroad 3

311 Topics—Study Abroad 3

314 Topics—Study Abroad 3

315 Topics—Study Abroad 3

318 Topics—Study Abroad 3

319 Topics—Study Abroad 3

Department of Food Science and Human Nutrition

Professor and Department Chair, A. McCurdy; Professors, S. Butkus, V. Hillers, L. Massey, S. Spayd, B. Swanson; Associate Professors, J. Armstrong Shultz, K. Beerman, R. Dougherty, C. Edwards, M. Mitchell, J. Powers, T. Shultz; Assistant Professors, B. Buzik, B. Beary, S. Clark, M. Edlefsen, D. Kang, S. McGuire, L. Peck, B. Rasco; Instructors, L. Jensen, D. Swanson, S. Scheunemann.

The Department of Food Science and Human Nutrition offers courses of study in two undergraduate major fields, food science and dietetics with different options and areas of interests available in each field. Students enrolled in these options or areas of interests complete prescribed courses of study leading to the Bachelor of Science in Food Science and Human Nutrition. Further information may be found at http://av.fern.wsu.edu.

Food Science

Food science students learn how to convert food commodities into high quality food products that are safe and nutritious. As part of the BS degree, students receive training and learn skills relative to the production, processing, preservation, safety, evaluation, and distribution of foods. The food processing industry is continually challenged to evaluate existing foods for quality, as well as the development of new foods to better meet the nutritional needs of the world. The many facets of food science create a wide variety of career opportunities in industry, government, and education. Graduates from Washington State University have traditionally received multiple offers of employment, many in the Pacific Northwest, at salaries that are generally better than those of other professions at equivalent levels of training and experience.

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. 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.

Human Nutrition

The General Dietetics Option has been approved by The Commission on Accreditation for Dietetic Education programs. General Dietetics is the first step toward obtaining training in dietetics to prepare for work related to food and nutrition. By following the prescribed course of study of foods (nutrition and foodservice management based on chemistry, biochemistry, physiology and business), the
student fulfills the minimum academic requirements of The American Dietetic Association (ADA) as well as those of the department and university. The student must gain post-baccalaureate supervised practice experience through a dietetic internship before becoming eligible for registration and ADA membership. Internships in hospitals or selected organizations are very competitive. Those completing the program of study for a Bachelor of Science degree and an internship are qualified for a variety of positions as members of a management team or/and healthcare team in hospitals; schools, colleges, and university food service; restaurants; and in government and private agencies.

The Coordinated Program in General Dietetics (CPD) combines classroom education with clinical experience in the various aspects of dietetics: community and clinical dietetics, and foodservice management. The program is founded on the belief that combining supervised practice and on-the-job experiences with didactic instruction enhances the educational environment. Course work is similar to that described for general dietetics. In this four-year program, the student completes the academic requirements for a Bachelor of Science degree as well as the additional 1100 hours of supervised practice requirements of The Commission on Accreditation of Dietetic Education (American Dietetic Association). This provides the student with eligibility for membership in the American Dietetic Association and preparation for writing the National Dietetic Registration Examination. Students successfully completing the examination become Registered Dietitians and are entitled to use the initials R.D. to indicate professional competence. Graduates of this option qualify for the same kinds of positions as do the graduates of the General Dietetics Option who complete a post-baccalaureate internship.

**Other Opportunities**

The department offers minors in food science, foods and nutrition, and food service management. In addition to undergraduate studies, the department offers courses of study leading to the degree 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).

**Degree Program Requirements**

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

**FOOD SCIENCE DEGREE PROGRAM (120 HOURS)**

This degree program has been developed for the student who is interested in the science of food processing. Emphasis is placed on the scientific aspects of processing and it offers more laboratory analysis experience.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Semester**

| Arts and Humanities [H,G] (GER) | 3 |
| Biol 103 [B] (GER) | 4 |
| Chem 106 [P] (GER) | 4 |
| FSHN 170 | 2 |
| GenEd 111 [A] (GER) | 3 |

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>FSHN 200</td>
<td>3</td>
</tr>
<tr>
<td>MBioS 302</td>
<td>4</td>
</tr>
<tr>
<td>MBioS 303</td>
<td>4</td>
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</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 201 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Chem 240</td>
<td>4</td>
</tr>
<tr>
<td>ComS 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Food Production Course</td>
<td>3</td>
</tr>
<tr>
<td>Phys 101 [P] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Semester**

| A S 314 or FSHN 233 | 3 |
| FSHN 200 | 3 |
| MBioS 302 | 4 |
| MBioS 303 | 4 |

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 402 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 303</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 416</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 417</td>
<td>2</td>
</tr>
<tr>
<td>FSHN Commodity Course</td>
<td>3</td>
</tr>
<tr>
<td>Stat 212 [N] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Semester**

| Arts and Humanities [H,G] or Social Sciences [S,K] (GER) | 3 |
| FSHN 422 or 450 | 3 |
| FSHN Commodity Course | 3 |
| FSHN 433 | 3 |
| FSHN 434 | 1 |
| Intercultural Studies [I,G,K] (GER) | 3 |

**HUMAN NUTRITION GENERAL DIETETICS DEGREE PROGRAM (126 HOURS)**

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Chem 101 [P] (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] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

| Chem 102 [P] (GER) | 4 |
| FSHN 233 | 3 |
| GenEd 110 [A] or 111 [A] (GER) | 3 |
| Psych 105 [S] or Soc 101 [S] (GER) | 3 |

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acctg 230</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Chem 240</td>
<td>4</td>
</tr>
<tr>
<td>FSHN 120</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 121</td>
<td>1</td>
</tr>
<tr>
<td>Zool 251</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Semester**

| Anth 309 [K] (GER) | 3 |
| FSHN 281 | 1 |
| H A 359 | 4 |
| MBioS 303 | 4 |
| Zool 315 | 4 |

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>FSHN 330 [M]</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 331</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 350</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>4</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
</tbody>
</table>

**Second Semester**

| Arts & Humanities [H,G] or Social Sciences [S,K] (GER) | 3 |
| FSHN 201 | 1 |
| FSHN 380 | 3 |
| FSHN 430 | 3 |
| H D 204 | 3 |

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>FSHN 370</td>
<td>3</td>
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<tr>
<td>FSHN 436</td>
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</tr>
<tr>
<td>FSHN 438</td>
<td>2</td>
</tr>
<tr>
<td>FSHN 480</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 212 [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSHN 420</td>
<td>2</td>
</tr>
<tr>
<td>FSHN 426 [M]</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 435</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 437</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>7</td>
</tr>
</tbody>
</table>

1 Math 171 and 172 are required of those students who will be competing for scholarships offered by the Institute of Food Technologists.

2 Food Production courses include (but are not limited to): A S 101, CropS 101, 201, Hort 201, 311, 320, 321.

3 Commodity courses are: FSHN 301, 302, 303, 304.

4 Courses are taught alternate years.

**Suggested electives for areas of interest:**

Business/Marketing: Acctg 230, 231, Ag Ec 360, B Law 210, Cpt S 405, Mgt 301, Psych 306.


Interships, FSHN 495: Internships with food companies, processors, and wineries can be arranged for three to six months to provide students with work experience in their areas of interest.

1 H D 205 is recommended.

2 Math 205 is recommended.

3 See adviser or Director of Dietetics

4 Optional for second semester sophomore year; can be taken first semester of junior year if not following the CUOGD option.

5 Suggested course: 1 D 202.
Suggested Electives: Biol 103, 104; FSHN 431, H D 201, 202, 403; Pharr 217; Psych 306.

Required for HNF majors: I D 101 or 202; H D 201 or 204. NOTE: I D 202 can also be used to partially fulfill a GER in Arts and Humanities.

COORDINATED PROGRAM IN DIETETICS (CPD) DEGREE PROGRAM (132 HOURS)

Application for admission to the CPD is ordinarily made during the fall semester of the junior year. Application deadline is October 1. Transfer students should consult the director for advice on applying and planning.

**Freshman Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Communication [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>(recommend H D 205)</td>
<td></td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 120</td>
<td>4</td>
</tr>
<tr>
<td>FSHN 201</td>
<td>1</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 102 [P] or 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>FSHN 233</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>MBioS 101 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Soc 101 [S,D] (GER)</td>
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**Sophomore Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Acct 230</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Chem 240</td>
<td>4</td>
</tr>
<tr>
<td>Stat 212 [N] (GER)</td>
<td>4</td>
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<tr>
<td>Zool 315</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>FSHN 331</td>
<td>3</td>
</tr>
<tr>
<td>H A 358</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [J,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>MBioS 303</td>
<td>4</td>
</tr>
<tr>
<td>Zool 251</td>
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**Junior Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>FSHN 330 [M]</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 350</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 370</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 380</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 436</td>
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<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Writing Portfolio</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSHN 426 [M]</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 430</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 435</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 437</td>
<td>1</td>
</tr>
<tr>
<td>FSHN 480</td>
<td>3</td>
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<tr>
<td>Tier III Course (GER)</td>
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**Senior Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</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>FSHN 475</td>
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<td>FSHN 476</td>
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<tr>
<td>FSHN 477</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSHN 439</td>
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<tr>
<td>FSHN 440</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 478</td>
<td>8</td>
</tr>
</tbody>
</table>

1 The senior semester sequences will be reversed for half of the students.
2 Clinical site, off campus.

For application and admission information, write Department Chair, FSHN Building, Washington State University, Pullman, WA 99164-6576, or phone (509) 335-3843.

**Minors in Food Science and Human Nutrition**

**Food Science**: 19 semester hours, 8 of which must be in 300-400-level courses. FSHN 303, 416, 460, and 461 are required; other courses must be taken from the food science area.

**Food Service Management**: 16 semester hours, 8 of which must be in 300-400-level courses. FSHN 120, 130, 380, 480, and H A 358.

**Foods and Nutrition**: 18 or 19 semester hours, 8 of which must be in 300-400-level courses. FSHN 120/121; 233, 330, 331; 420 or 430 are required. MBioS 303 is a required prerequisite.

**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, that 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 and have completed at least 90 degree credits, including a major in food science area, may apply for admission to the graduate program in food science.

**Description of Courses**

**Food Science and Human Nutrition**

FSHN 120 Food Preparation 4 (3-3) Principles and methods of food preparation, including physical and chemical changes, quality, composition and use of foods.

FSHN 233 Human Nutrition 3 Information related to the interaction of nutrients in the body and factors which govern nutrient requirements.

FSHN 330 Nutrition for Living 3 Interrelationships between people and their food supply; broad coverage of contemporary food-related topics.

FSHN 402 Seminar in Food Science 2 Prereq FSHN 401 or 430; open to UI students.

FSHN 439 Food Security 3 Prereq senior standing. Examination of people's access to and use of food from multidisciplinary perspectives, emphasizing critical thinking and problem solving.
404 Food Product Development 2 Prereq senior standing; MBioS 303. Development of food products from concept to marketplace. Cooperative course taught by WSU, open to UI students (FST 407).

405 Eating Disorders 2 Examination of anorexia nervosa, bulimia nervosa, compulsive eating, obesity, and weight preoccupation; discussion of cultural and nutritional factors, family issues, and psychological consequences, as well as preventive and therapeutic interventions. Cooperative course taught by UI (FCS 405), open to WSU students.

410 Advanced Practice Skills in Dietetics 2 (1-3) Prereq junior or senior standing in FSHN. Analysis of dietetics supervised practice experiences; development of application process; participation in community affairs; public policy and research in dietetics.

411 Global Nutrition 2 History of food and hunger and the global nature of our food systems. Cooperative course taught by UI (FCS 411), open to WSU students.

416 Food Microbiology 2 Prereq introductory microbiology. Purpose of 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 MBioS 416), open to WSU students.

421 Food Microbiology Laboratory 2 (0-6) Prereq c// in FSN 416. Methods of enumeration, detection and identification of spoilage and pathogenic microorganisms in foods. Cooperative course taught by UI (FST and MBioS 416), open to WSU students.


422 Food Quality Evaluation 3 (2-3) Prereq statistics course. Techniques in evaluation of quality of foods by sensory and instrumental methods. Cooperative course taught by WSU, open to UI students (FST 422).

426 [M] Community Nutrition 3 Prereq FSHN 330, 331; Rec FSHN 316. Petitions for courses, planning, and evaluation in community nutrition programs. Cooperative course taught jointly by WSU and UI (FCS 473).

427 Nutritional Assessment 1 (0-3) Rec FSN 233, senior standing. Basic skills and concepts for determining nutritional status of ambulatory adults using dietary intakes, dietary standards, anthropometric and biochemical measures.

430 Human Nutrition, Intermediary Metabolism 3 Prereq FSHN 330, MBioS 303, Zoel 251. Biochemical roles of nutrients and processes of intermediary metabolism affecting man's need for food; integration of biochemical pathways of major and minor nutrients; important nutritional diseases and controversies.

433 [M] Agricultural Processing 3 Same as AgTM 433.

434 Agricultural Processing Lab 1 (0-3) Same as AgTM 434.

435 Medical Nutrition Therapy 3 Prereq FSHN 350, 430 or c//. Nutrition principles applied to pathological conditions in people.

436 Nutrition Education 4 (3-2) Prereq FSHN 130 or 233. Guidelines and skills necessary for developing, implementing, and evaluating nutrition education programs and materials.

437 Medical Nutrition Therapy Laboratory 1 (0-3) Prereq c// in FSN 435. Nutritional care planning; modified diets; nutritional assessment and dietary analysis in clinical care settings.

438 Readings in Foods and Nutrition 2 Prereq FSHN 480 or c//. 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, populare and legislative articles pertaining to topics of current interest in nutrition. Credit not granted for both FSHN 439 and 539.

440 Advanced Medical Nutrition Therapy 3 By interview only. Advanced nutrition principles applied to pathological conditions in humans and principles of participation in delivery of nutritional care.

444 [T] Applied Nutrition in Health Science 3 Prereq biology, chemistry, sociology/psychology; completion of one Tier I and three Tier II courses. Application of current nutrition topics to community and clinical settings, integrating social science principles for individuals and groups.

450 Food Fermentations 3 (2-3) Prereq Chem 240, MBioS 302; Rec MBioS 303. Principles and procedures of fermentation of fruits and vegetables, meat products, and dairy products. Credit not granted for both FSHN 450 and 550. Cooperative course taught by WSU, open to UI students (FST 450).

460 Food Chemistry 3 Prereq org chem; Rec MBioS 303. Fundamentals of food chemistry; composition of foods and the changes that occur during processing. Cooperative course taught by WSU, open to UI students (FST 460).

461 [M] Food Chemistry Laboratory 1 (0-3) Rec FSHN 460 or c//. Experiments related to the properties, reactions, and interactions of chemical components of foods. Cooperative course taught by WSU, open to UI students (FST 461).

462 Food Analysis 4 (2-6) Prereq microbiology, organic chemistry. Introductory food analysis; methods common to many food commodities. Cooperative course taught by WSU, open to UI students (FST 462).

467 Advanced Food Technology 3 Prereq FSHN 416, 433 or c//. Physical principles of food preservation and recent advances in food technology. Credit not granted for both FSHN 470 and 570. Cooperative course taught by WSU, open to UI students (FST 470).

475 Current Topics in Food Systems Management 2 Prereq by interview only. Analysis of scientific 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 FSN 477.

477 Supervised Practice in Dietetics I 1 (0-24) Prereq FSHN 475, 476 or c//; by interview only. Students in CPD program receive supervised practical experience each semester of their senior year.

478 Supervised Practice in Dietetics II 5 (0-24) Prereq by interview only. Students in CPD program receive supervised practical experience each semester of their senior year.

480 Management in Food Service Systems II 3 Prereq Accctg 230, FSHN 120, 380, H A 358. Management theories, human resources, financial planning, marketing, and quality control.

485 Clinical Experience in Food Service Systems 2 (1-3) By interview only. Experience in food systems management in clinical settings.

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 adviser and industrial supervisor. S, F grading.

498 Food Practicum 1 V (0-3) to 8 (0-24) May be repeated for credit; cumulative maximum 8 hours. Prereq junior standing. Supervised experiences of working in one or more food-related businesses, organizations, and agencies. S, F grading.

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

501 Topics in Food Science and Human Nutrition 3 Same as FST 501. May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of FSN 401; additional requirements. Credit not granted for both FSN 401 and 501.

504 Advanced Human Nutrition I Prereq graduate standing. Scientific basis of human nutrient requirements, dietary allowances and assessment techniques. Cooperative course taught by WSU, open to UI students (FCS 514).

508 Seminar Written Communication 1-4 May be repeated for credit. Planning, writing, reporting, reviewing and evaluating current food-related research.

509 Seminar Oral 1 May be repeated for credit. Development of skills and communication tools and techniques for oral presentations of current food science and human nutrition research.

510 Advanced Food Chemistry 3 Rec biochemistry, food chemistry. Chemical, physical, and toxicological properties of water, vitamins, pigments, synthetic colors, minerals, miscellaneous food additives, and natural toxicants. Cooperative course taught by WSU, open to UI students (FST 510).

511 Food Carbohydrates, and Lipids 3 Rec biochemistry, food chemistry. Occurrence, structure, chemical and physical properties; and 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 (FSHN 460). 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 Same as A S 513.

520 Research Methods in Behavioral Nutrition 3 Prereq FSHN 130 or 233; Rec FSN 426 or 436; statistics course. The application of behavioral theories and quantitative methods of data collection to behavioral nutrition research. Cooperative course taught by WSU, open to UI students (FCS 520).

521 Research Techniques in Nutrition 3 (1-6) Rec 6 hours 300-400-level nutrition. Methods of conducting field, applied and metabolic studies in human nutrition.
522 Food Quality Evaluation 3 (2-3) Prereq 300-400-level statistics course. Advanced studies of psychophysical testing sensory and instrumental analysis of foods and multivariate statistical analysis of sensory data. Cooperative course taught by UI (FST 522), open to WSU students.

526 Advanced Community Nutrition 3 Prereq 300-400-level nutrition course. Components of community nutrition programs-needs assessment, planning, intervention, evaluation; application of concepts to case studies. Cooperative course taught by WSU, open to UI students (FCS 526).

530 Prenatal, Infant and Child Nutrition 2 Prereq graduate standing. Nutrition of the mother and fetus during pregnancy and of the child from infancy through childhood.

531 Nutrition and Aging 2 Rec 300-400-level nutrition course; by interview only. Assessment, evaluation, and treatment of nutritional problems of the aged.

533 Pathophysiology of Human Nutrition 3 Prereq FSNH 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 FSNH 438; additional requirements. Credit not granted for both FSNH 438 and 538.

539 Current Topics in Nutrition 2 Graduate-level counterpart of FSNH 439; additional requirements. Credit not granted for both FSNH 439 and 539.

540 Advanced Clinical Practice 3 (0-9) Prereq FSNH 435, 437; instructor’s permission. Application of diet therapy principles to development of nutrition interventions and care plans in a clinical practice setting.

550 Food Fermentations 3 (2-3) Graduate-level counterpart of FSNH 450; additional requirements. Credit not granted for both FSNH 450 and 550. Cooperative course taught by WSU, open to UI students (FST 550).

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.

570 Advanced Food Technology 3 Graduate-level counterpart of FSNH 470; additional requirements. Credit not granted for both FSNH 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. Rec by interview only. Professional supervised experience in administrative, clinical, and community dietetics; meets American Dietetic Association requirements for registration eligibility. S, F grading.

582 (587) Food Process Engineering Design 3 Same as ByE 582.

598 Foods/Nutrition Practicum V I (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Rec by interview only. Professional-level supervised field experience in food and/or nutrition. 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

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### Department of Foreign Languages and Literatures

**Professor and Department Chair, B. Frederick; Professor, Elwood Hartman; Associate Professor, J. Brewer, Z. Dong, E. Gonzalez, J. Grenier-Winther, R. Halverson, B. Ingemanson, A. M. Rodriguez-Vivaldi; Assistant Professors, K. Andersen, C. Lupke, F. Manzo-Robledo; Professors Emeriti, H. C. Kim.**

The Department of Foreign Languages and Literatures has two missions. The first mission is to develop the students’ intellectual curiosity, critical thinking skills, and appreciation of humanistic endeavors within the overall context of understanding international cultural diversity. This intellectual development prepares students to comprehend and function in the world of the present, but it also prepares them for whatever the future may hold. The second mission is to give the students the practical skills of articulating ideas through another language and culture in order to equip them with expanded capabilities for pursuing their careers in today’s increasingly global society.

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 in a study abroad program, ideally a program that offers an internship in the student’s professional field.

Recognizing the need for students to reinforce in a practical way knowledge gained in the classroom, the department sponsors a wide variety of supplementary activities. The Maison Française, a living group where only French is spoken and where conversational activities are supervised by a resident native speaker, is open to students of sophomore standing and above. Visiting lecturers, 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 Literatures (French, German, Russian, and Spanish) and Master of Arts in Foreign Languages and Literatures (Spanish).

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### Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

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

A minimum of 30-36 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 Literatures.

No course in which a C- or lower grade is earned will be counted toward the major or minor. Upper-division courses taken pass, fail may not be included for credit toward the major. No course may count for both the major and the minor.

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### FRENCH DEGREE PROGRAM (120 HOURS)

Students may earn some equivalent credit in approved study abroad programs.

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fren 101 (if necessary), or higher (102, 203, or 304)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 (if necessary) [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 103 (if necessary)</td>
<td>3</td>
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<tr>
<td>Elective</td>
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#### Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Fren 102 (if necessary), or higher (203 or 304)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Biological Science (Lab course) [B] (GER)</td>
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<tr>
<td>Math Proficiency (Math 210 rec) [N] (GER)</td>
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#### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Fren 203 (if necessary), or higher (304)</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Science (Lab course) [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
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#### Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Fren 304</td>
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<tr>
<td>One from: Fren 315, 316, 350, 352, 354, 416, 450</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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<td>Elective</td>
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#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fren 307</td>
<td>3</td>
</tr>
<tr>
<td>Fren 308 [M]</td>
<td>3</td>
</tr>
<tr>
<td>One from: Fren 306, 310, 416</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural Studies [G, I, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
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</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Fren 305</td>
</tr>
<tr>
<td>One from: Fren 320 [M], 322 [M], 324 [M], 427</td>
</tr>
<tr>
<td>One from: 407, 408 [M] or 409</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural Studies [L,G,K], or Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>Science Elective [B], [P], or [Q] (GER)</td>
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<tr>
<td>Elective</td>
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#### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fren 305</td>
<td>1</td>
</tr>
<tr>
<td>One from: Fren 306, 310, 416</td>
<td>3</td>
</tr>
<tr>
<td>One from: Fren 320 [M], 322 [M], 324 [M], 427</td>
<td>3</td>
</tr>
</tbody>
</table>

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Department of Foreign Languages and Literatures
GERMAN DEGREE PROGRAM (121 HOURS)

Freshman Year
First Semester Hours
Arts & Humanities [H,G] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Rus 101, if necessary, or Elective 3

Second Semester Hours
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Ger 102, if necessary, or Elective 4
Science Elective [B,P] (GER) 4

Sophomore Year
First Semester Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
Ger 203 4
Ger 315 3
Physical [P] Sciences (GER) 4

Second Semester Hours
Biological Sciences [B] (GER) 4
Intercultural [I,G,K] (GER) 3
Ger 304 4
Ger 317 3
Elective 2

Junior Year
First Semester Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
Ger 310 [M] or 312 3
Electives 6
Complete Writing Portfolio

Second Semester Hours
Ger 305 1
Ger 310 or 312 3
One from: Ger 422, 423, 424, 425, 426, or 427 [M] 3
Social Science [S,K] (GER) 3
Electives 6

Senior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Ger 320 3
One from: Ger 422, 423, 424, 425, 426, or 427 [M] 3
Electives 6

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Russian Area Elective 3
Electives 9

Second Semester Hours
One from: Ger 422, 423, 424, 425, 426, or 427 [M] 3
Tier III Course (GER) 3
Electives 12

RUSSIAN AREA STUDIES DEGREE PROGRAM (120 HOURS)

Freshman Year
First Semester Hours
Arts & Humanities [H,G] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3 or 4
Rus 102 4
GenEd 111 [A] (GER) 3
Science Elective [B,P] (GER) 4

Sophomore Year
First Semester Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
Physical [P] Sciences (GER) 4
Rus 203 4
Rus 317 3

Second Semester Hours
Biological [B] Sciences (GER) 4
Intercultural [I,G,K] (GER) 3
Rus 307 or 311 [M] 3
Rus 315 or Elective 3
Rus 323 or 360 3

Junior Year
First Semester Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
One from: Rus 461, 462, 465, 466; Pol S 412 or Rus 430 3
Rus 307 or 311 [M] 3
Russian Area Elective 3
Elective 3
Complete Writing Portfolio

Second Semester Hours
One from: Rus 461, 462, 465, 466; Pol S 412 or Rus 430 3
Rus 307 or 311 [M] 3
Russian Area Elective 3
Social Sciences [S,K] (GER) 3
Elective 3

Senior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Russian Area Elective 3
Electives 9

Second Semester Hours
Tier III Course (GER) 3
Electives 12

SPANISH DEGREE PROGRAM (120 HOURS)

Freshman Year
First Semester Hours
Arts & Humanities [H,G] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3 or 4
Span 101, if necessary, or Elective 4

Second Semester Hours
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Science Elective (GER) 4
Span 102, if necessary, or Elective 4

Sophomore Year
First Semester Hours
Biological [B] Sciences (GER) 4
Span 203, if necessary, or Elective 4
Spanish Electives 3
Electives 3

Second Semester Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
Physical [P] Sciences (GER) 4
Social Sciences [S,K] (GER) 3
Spanish Electives 6

Junior Year
First Semester Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER) 3
Spanish Electives 5
Electives 6
Complete Writing Portfolio

Second Semester Hours
Intercultural [I,G,K] (GER) 3
Spanish Electives 6
Electives 6

Senior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Spanish Electives 3
Spanish Literature Elective 2
Electives 7

Second Semester Hours
Spanish Literature Elective 2
Tier III Course (GER) 3
Electives 9

1 The language summer course at Far Eastern State University Vladivostock (6 credits) is another possibility.
2 Possible area electives include: Ag Ec 453; Anth 417, 419; Com 321; CropS 360; ES/RP 335; F A 201, 202; I Bus 380, 415, 416, 435; Mus 163; Phil 445; Pol S 103, 333; R S 335; Theat 145, 150, 366.

1 Electives must be represented by competence in a second foreign language, up to and including 304, and an approved university minor or teaching minor, or a second major in another field.
2 Electives may transfer towards the major from an approved study abroad program. Electives must be represented by competence in a second foreign language, up to and including 304, and an approved university minor or teaching minor, or a second major in another field.

Taking in residence at WSU.
Minimal Requirements for Each Minor

To fulfill requirements for a minor in French, German, Russian, or Spanish, a student must present a minimum of 16 hours of course work in one language area. In addition, a minimum of 9 hours beyond the 304-level is required. At least 6 of these hours must be in the target language, and at least 3 of the target language hours must be taken on a WSU campus. Fren 305, 306, Span 323, 324 may not be included in the minor. Upper-division courses taken pass, fail may not be included for credit toward the minor. No course may be repeated for credit toward the minor. No course may count for both the major and the minor.

Minor in Danish

The student must earn a minimum of 16 total hours in the language area, which may include credit for advanced standing or transfer credit of courses through 304. Six hours of the course work in the language area above the 304 level must be taken in residence. These 6 hours must include at least 3 credit hours in the target language. Upper-division courses (300 and above) graded pass, fail may not be included for credit toward the minor. Since advanced courses in Danish are taught under For L 300, the student is required to obtain written certification from the instructor that 6 hours of course work is above the 304 level.

Minor in Film Studies

A minimum of 18 credits is required, including Soc 372, Theat 150, Theat 462. Three other courses are required from one of the following tracks. Film as Literature and Philosophy: Three from CAC 338, Engl 339, For L 422, Phil 210, Russ 360, Span 361. Film as Cultural Study: CAC 338, Com 471, CAC 413, For L 422, Hist 321, Hist 322, Russ 360, Span 361. Film as Aesthetics: Com 460, Engl 339, F A 331, Phil 210.

Minor in French Area Studies

Both options in the minor require a minimum of 23 credit hours, chosen according to the following schedule of studies.


*Students choosing Francophone Area Studies Option must take these courses.

Minor in German Area Studies

The minor in German Area Studies requires 18 hours, at least 9 of which must be 300-400-level including Ger 310 or 312, 317, Hist 468; 9 credits from: Hist 386, 449, 450, 453, 454; Pol S 472 (in courses covering a broader geographical area than Germany, Austria and Switzerland, the student is expected to ask the professor for a German Area Studies topic for the semester project or term paper); a student paper on German Area Studies-related topic (it may be a paper from one of the above courses) submitted to the German Area Studies faculty. (Also strongly recommended: Hist 102).

Minor in Japanese Studies

The minor in Japanese Studies requires 22 hours: Jappn 101, 102, 303, 304, plus two courses from the following: Hist/Asia 374, 477; Phil/Asia 315; Pol S/Asia 436. A minimum of 4 hours of language, and 3 hours of electives must be taken at WSU.

Minor in Latin American Area Studies

The minor in Latin American Area Studies requires 20 hours, at least 8 of which are 300-400-level. Eight of the total hours must be in Spanish language courses. Courses may be chosen from: Ag Ec 420; Anth 331, 428; CAC 151, 255, 354; CropS 360; Econ 470, 472; Hist 230, 231, 331, 430, 432, 433, 434; Pol S 413, 435; Span 323, 416, 434, 435.

Minor in Russian Area Studies

The minor in Russian Area Studies requires 20 hours, at least 8 of which must be 300-400-level.

Option 1: Russia through the 19th Century; Hist 462, Russ 101, 102, 315. Option 2: Russia in the 20th Century: Hist 463; Russ 101, 102, 317. Both options require two additional courses from: Econ 416, Hist 465, Pol S 102, 333, Russ 323. The required courses in the option not chosen may also serve as electives. Except for Russ 101 and 102, all courses are taught in English.

Minor in Scandinavian Area Studies

The minor in Scandinavian Area Studies requires 20 hours, at least 8 of which are 300-400-level including Hist 348; For L 300, Scand 101, 102, 323, 490, 499; Soc 391. Students may apply up to 10 hours of approved study abroad course work toward the minor.

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.

Preparation for Graduate Study

Students who contemplate graduate work in the Department of Foreign Languages and Literatures should present an undergraduate degree similar to those described in the above schedule of studies. Complete details on graduate programs are available from the chair of the department.

Description of Courses

Foreign Languages and Literatures

For L

300 Studies in Foreign Languages V 1-4 May be repeated for credit. Languages not currently a part of the curricular may be offered on demand. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (FL 300).

340 Methods of Teaching Foreign Languages 3 Prereq two years foreign language. Survey of current methodology with emphasis on practical application in the classroom.

350 [S] Speech, Thought, and Culture 3 Same as Anth 350.

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.

422 [T] 20th-Century Issues in German and Latin American Film and Literature 3 Prereq completion of one Tier I and three Tier II courses. Comparison of film adaptations with their literary inspirations to give students an understanding of how cultures respond to contemporary conditions.

444 Instructional Technology for Foreign Language Learning 3 Prereq For L 340. 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 444 and 544.

450 Descriptive Linguistics I 3 Same as Anth 450.

473 Teaching Foreign Language in the Elementary School 3 Same as T & L 473.

474 Secondary School Foreign Language Methods 3 Prereq two years foreign language. Specific methods, research, curricula, and media in teaching secondary school foreign language. Cooperative course taught by UI (Ed 474), open to WSU students.

495 Cooperative Education Internship V 2-6 May be repeated for credit; cumulative maximum 6 hours. Off-campus cooperative education internship with business, industry, or government unit. S, F grading.

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

597 Seminar in Scholarly Methodology 2 Bibliography and formal aspects of scholarly writing: general introduction to literary criticism.

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

Chinese

Chin

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 (Chin 101).

102 Second Semester 4 (3-2) Prereq Chin 101. Continuation of Chin 101. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 102).

203 Third Semester 4 (3-2) Prereq Chin 102. Further development of speaking, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 201).

304 Intermediate 4 (3-2) Prereq Chin 203. Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 305).

305 Conversation V 1-2 May be repeated for credit; cumulative maximum 8 hours. Prereq Chin 203. 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.

307 Spoken Chinese I 3 Prereq Chin 304. Course provides students with intensive practice in oral and listening skills. Taught mainly in Chinese.
320 Masterpieces of Asian Literature 3 Prereq GenEd 110, 111. Reading and discussion of outstanding literary works of Asian literature. Cooperative course jointly taught by WSU and UI (Chin 320).  
360 Asian Film 3 Asian film from a cultural perspective. Taught in English. Cooperative course jointly taught by WSU and UI (Chin 360).  
Classics  
Clas  
101 Beginning Latin 4 For students who have had no Latin or who need a review course before taking advanced work.  
102 Selections from Latin Prose and Poetry 4 Prereq Clas 101.  
103 Latin and Greek for Sciences 2 Latin and Greek roots for students of science, medicine, horticulture, etc.  
341 Elementary Greek 4 Pronunciation, vocabulary, reading, and functional grammar. Cooperative course taught by UI (Grek 341), open to WSU students.  
342 Elementary Greek 4 Pronunciation, vocabulary, reading, and functional grammar. Cooperative course taught by UI (Grek 342), open to WSU students.  
349 Greek Language Lab 1 May be repeated for credit; cumulative maximum 2 hours. Basic skills. S, F grading. Cooperative course taught by UI (Grek 349), open to WSU students.  
346 Survey of Latin Literature 3 From early Latin to the Middle Ages. Cooperative course taught by UI (Latn 365), open to WSU students.  
366 Survey of Latin Literature 3 From early Latin to the Middle Ages. Cooperative course taught by UI (Latn 366), open to WSU students.  
369 Latin Language Lab 1 May be repeated for credit; cumulative maximum 2 hours. Prereq permission. Advanced-level expressive skills. S, F grading. Cooperative course taught by UI (Latn 369), open to WSU students.  
404 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Cooperative course taught by UI (Latn 404), open to WSU students.  
411 Intermediate Greek 4 Readings in classical Greek prose and poetry. Cooperative course taught by UI (Latn 441), open to WSU students.  
412 Intermediate Greek 4 Readings in classical Greek prose and poetry. Cooperative course taught by UI (Latn 442), open to WSU students.  
416 Latin Literature of the Augustan Age 3 Cooperative course taught by UI (Latn 461), open to WSU students.  
421 Latin Literature of the Augustan Age 3 Cooperative course taught by UI (Latn 462), open to WSU students.  
461 Latin Literature of the Republic 3 Cooperative course taught by UI (Latn 463), open to WSU students.  
464 Latin Literature of the Republic 3 Cooperative course taught by UI (Latn 464), open to WSU students.  
465 Latin Literature of the Silver Age 3 Cooperative course taught by UI (FL/LA 465), open to WSU students.  
466 Latin Literature of the Silver Age 3 Cooperative course taught by UI (FL/LA 466), open to WSU students.  
French  
Fren  
101 First Semester 4 (3-2) Fundamentals of speaking, reading, and writing. Not open to native speakers except with permission. Credit granted either for 101-102 or 104, but not both.  
102 Second Semester 4 (3-2) Prereq Fren 101. Continued development of basic skills in speaking, reading, and writing. Not open to native speakers except with permission. Credit granted either for 101-102 or 104, but not both.  
104 Intensive French: Foundations of Language and Culture 4 Intensive first-year French, emphasizing reading, writing, oral expression and comprehension, cultural awareness. Serves as a prerequisite for Fren 203. Not open to native speakers except with permission. Credit granted either for 101-102 or 104, but not both.  
203 Third Semester 4 (3-2) Prereq Fren 102. Grammar and further development of speaking, reading, and writing skills. Not open to native speakers except with permission.  
304 Intermediate 4 (3-2) Prereq Fren 203. Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission.  
305 Conversation V 1-2 May be repeated for credit; cumulative maximum 8 hours. Prereq Fren 203. Conversation practice in small groups. Not open to native speakers except with permission.  
306 French for Reading Proficiency 3 Prereq Fren 304 or equivalent. Vocabulary building, contrastive English-French grammar, development of skills to increase reading speed and fluency.  
310 French for the Professions 3 Prereq Fren 304. Communication in French for professional purposes; telephone and meeting role-plays, letter-writing, television, discussions of current events in the Francophone world.  
315 [H] French Civilization and Culture 3 Cultural history of France from beginnings to present; comparison of French and American cultures; taught in English.  
316 [I] French Civilization and the Francophone World 3 Study of relationship between France and its former colonies from a global perspective; complements Fren 315; readings, lectures, and discussions in English.  
318 Topics in French Civilization—Study Abroad 3  
320 [H,M] Topics in Early French Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Fren 304 or equivalent. Highlights from major French literary works from the Middle Ages, Renaissance, Classical period, and the Enlightenment; works selected from a variety of authors and genres.  
322 [H] Topics in Modern French Literature 3 Prereq Fren 304 or equivalent. Highlights from major French literary achievements of the 19th and 20th centuries from a variety of authors and genres.  
327 Special Topics—Study Abroad 3  
407 Advanced Practice in Speaking Proficiency 3 Prereq Fren 307. Systematic development of oral skills on the advanced level, including delivery of brief formal presentations involving specialized vocabulary.  
409 Pronunciation and Phonetics 2 Prereq Fren 307 or 308. A theoretical and practical approach to French phonetics.  
416 Seminar in French Civilization 3 Prereq Fren 307, 308, 320 or 322. May be repeated for credit; cumulative maximum 6 hours.  
418 Topics in French Civilization—Study Abroad V 1-4.  
424 French Literature of the 19th Century 3 Prereq Fren 320 or 322. Authors and works from the Romantic, Realist, Naturalist, and Symbolist Schools.  
425 French Literature of the 20th Century 3 Prereq Fren 320 or 322. Authors and works from the pre-WWI, pre-WWII, post-war, and contemporary periods.  
427 Seminar in French Language or Literature 3 May be repeated for credit. Prereq Fren 320 or 322.  
499 Special Problems V 1-4 May be repeated for credit. S, F grading.  
German  
Ger  
101 First Semester 4 (3-2) Fundamentals of speaking, reading, and writing. Not open to native speakers except with permission.  
102 Second Semester 4 (3-2) Prereq Ger 101. Continued development of basic skills in speaking, reading, and writing. Not open to native speakers except with permission.  
203 Third Semester 4 (3-2) Prereq Ger 102. Grammar and further development of speaking, reading, and writing skills. Not open to native speakers except with permission.  
304 Intermediate 4 (3-2) Prereq Ger 203. Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission.  
310 French for the Professions 3 Prereq Ger 203. Communication in French for professional purposes; telephone and meeting role-plays, letter-writing, television, discussions of current events in the Francophone world.  
315 [H] Germanic Civilization 3 The cultural development of the Germanic peoples to 1750; readings, lectures, and discussions in English.  
317 [S] Contemporary German Culture and Society 3 Lectures, readings, and discussions in English; current social, political, economic, and cultural trends in Germany.  
318 Topics in German Civilization Study Abroad 3 (Cologne).  
320 [M] Introduction to German Literature 3 Prereq Ger 304. Reading in context; modern German prose.
407 Advanced Practice in Speaking Proficiency 3 Prereq Ger 310 or 312. Development of speaking skills in German to an advanced level.

412 [M] Advanced Composition and Conversation 3 Prereq Ger 312. Continued development of proficiency speaking and writing skills; emphasis on fluency and accuracy. Not open to native speakers except with permission.

422 [M] 18th Century German Studies; Topics 3 Prereq Ger 310, 312, or 320. The works of Lessing, young Goethe, young Schiller, and others.

423 [M] German Literature of the Classical Periods 3 Prereq Ger 320 or 322. Dramatic, lyric, and prose texts by Goethe, Schiller and others in the period 1780 - 1800.

424 [M] German Literature of the Early 19th Century 3 Prereq Ger 320 or 322. Dramatic, lyric and prose texts of the Romantics, Junges Deutschland and the early Realists.

425 [M] German Literature of the Late 19th Century 3 Prereq Ger 320 or 322. Dramatic, lyric and prose texts of the Realists and the Naturalists.

426 [M] 20th Century German Studies; Topics 3 Prereq Ger 310, 312, or 320. Dramatic, lyric and prose texts of the Impressionists, Expressionists, and Dadaists.

427 Seminar in German Language or Literatures 3 May be repeated for credit. Prereq Ger 320 or 322.

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

Italian

Ital

101 First Semester—Study Abroad V 3-6 Introductory Italian. (Siena). Not open to native speakers except with permission.

102 Second Semester—Study Abroad V 3-6 Prereq Ital 101. Continuation of Ital 101. (Siena). Not open to native speakers except with permission.

203 Third Semester—Study Abroad V 3-6 Prereq Ital 102. Continuation of Ital 102; grammar review, further development of speaking, reading, and writing skills. (Siena). Not open to native speakers except with permission.

318 Topics—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours. (Siena). Not open to native speakers except with permission.

Japanese

Japn

101 First Semester 5 (4-3) Fundamentals of speaking, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by UI (Japn 101), open to WSU students.

102 Second Semester 5 (4-3) Prereq Japn 101. Continuation of Japn 101. Not open to native speakers except with permission. Cooperative course taught by UI (Japn 102), open to WSU students.

203 Third Semester 5 (4-3) Prereq Japn 102. Conversation and reading of selected texts. Not open to native speakers except with permission. Cooperative course taught by UI (Japn 201), open to WSU students.

304 Intermediate 5 (4-3) Prereq Japn 303. 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 UI (Japn 202), open to WSU students.

305 Conversation V 1-2 May be repeated for credit; cumulative maximum 8 hours. Prereq Japn 203. Conversation practice in small groups. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Japn 305). S, F grading.

318 Topics in Japanese—Study Abroad V 1-12 Prereq Japn 203.

Russian

Rus

101 First Semester 4 (3-2) Fundamentals of speaking, reading, and writing. Credit not granted for both Rus 101 and 102 and for 106. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Rus 101).

102 Second Semester 4 (3-2) Prereq Rus 101. Continued development of basic skills in speaking, reading, and writing. Credit not granted for both Rus 101 and 102 and for 106. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Rus 102).

305 Conversation V 1-2 May be repeated for credit; cumulative maximum 8 hours. Prereq Rus 203. Conversation practice in small groups. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Rus 305). S, F grading.

307 Speaking Proficiency 3 May be repeated for credit; cumulative maximum 9 hours. Prereq Rus 102. Intensive practice in oral and listening skills for intermediate students. Taught in Rusian. Cooperative course taught by WSU, open to UI students (Rus 203).

311 [M] Seminar in Russian Language 3 Prereq Rus 102. May be repeated for credit, cumulative maximum 6 hours. Special topics and projects in Russian language. Taught in Russian. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Rus 203).

315 Russian Civilization 3 Russian culture to 1917; readings, lectures, and discussions in English.

317 [G] Contemporary Russian Culture and Society 3 Readings, lectures, and discussions in English; current cultural and social trends in the former USSR.

318 Topics in Russian Study Abroad V 4-12 Prereq Rus 307. Topics and language study abroad in Russia.

323 [H] Masterpieces of Russian Literature in Translation 3 The masterpieces of the great Russian and Soviet writers of the 19th and 20th centuries. Taught in English.

360 [H] Russian Film 3 Russian daily life, historical events, and values in representative samples of Russian film.

412 Government and Politics of the Former Soviet Union 3 Same as Pol S 412.

425 Seminar in Russian Area Studies 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Rus 307 or 311. Special interdisciplinary topics.

430 [T,H] St. Petersburg 3 Prereq completion of one Tier I and three Tier II courses. The image and role of St. Petersburg in Russian and world classics in literature, art, music, and film.

461 Medieval Russia 1147-1700 3 Same as Hist 461.

462 History of Imperial Russia 3 Same as Hist 462.

463 [M] History of the Soviet Union 3 Same as Hist 463.

465 East-Central Europe 3 Same as Hist 465.

466 [T] History of the Cold War, 1944-present 3 Same as Hist 466.

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

Scandinavian

Scand

101 First Semester Danish 4 Introduction to Danish; fundamentals of speaking, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Scand 101).

102 Second Semester Danish 4 Prereq Scan 101. Intermediate Danish; continued development of the basic communicative skills in speaking, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Scan 305). S, F grading.

325 [H] Masterpieces of Scandinavian Literature in Translation 3 May be repeated for credit; cumulative maximum 6 hours. Topics in Scandinavian literature from the Icelandic sagas to the present. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Scand 325).

490 Topics in Scandinavian Studies V 1-3 May be repeated for credit.

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

Spanish

Span

101 First Semester 4 (3-2) Fundamentals of speaking, reading, and writing. Not open to native speakers except with permission.

102 Second Semester 4 (3-2) Prereq Span 101. Continued development of basic skills in speaking, reading, and writing. Not open to native speakers except with permission.

130 Beginning Spanish—Study Abroad V 1-12 Equivalent to Span 101, 102, 203. Not open to native speakers except with permission.

203 Third Semester 4 (3-2) Prereq Span 102. Further development of speaking, reading, and writing skills. Not open to native speakers except with permission.

304 Intermediate 4 (3-2) Prereq Span 203. Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission.

305 Conversation V 1-2 May be repeated for credit; cumulative maximum 8 hours. Prereq Span 304. Conversation practice in small groups. Not open to native speakers except with permission.

360 Spanish for Reading Proficiency 2 Prereq Span 203. Vocabulary building, contrastive English-Spanish grammar, development of skills to increase reading speed and fluency.

370 Speaking Proficiency 3 Prereq Span 304. Systematic development of speaking pronunciation of basic Spanish sounds. Not open to native speakers except with permission.
308 [M] Composition and Grammar Review 3  
Prereq Span 304. Writing practice in the language and review of grammatical rules.

309 Spanish for Criminal Justice 3  
Prereq Span 203. Spanish for police and law enforcement personnel. Taught in Spanish.

310 Spanish for the Professions 3  
Prereq Span 203. Special topics in language and culture for the professions.

312 Spanish for Native Speakers 4 (3-2) Prereq fluency in Spanish. Readings on Spanish-speaking communities; information and corrective feedback for native speakers of Spanish, grammatical emphasis in writing and speaking.

315 [H] Hispanic Civilization 3 Spanish culture with lectures and readings in English.

316 [G] Hispanic American Culture 3 Contemporary social, political, and cultural issues. Taught in English.


361 [G] Latin American Film 3 History of Latin American cinema from a cultural perspective. Taught in English.

391 Hispanic Film 3 Genre, structure and style of representative fiction and nonfiction films of Spain and Latin America. Cooperative course taught by UI (Span 391), open to WSU students.

407 Advanced Practice in Speaking Proficiency 3 Prereq Span 307. Systematic development of oral skills on the advanced level, including delivery of brief formal presentations involving specialized vocabulary. Not open to native speakers except with permission.


424 Spanish Literature of the 19th Century 3  
Prereq Span 320. Drama, poetry, the short story, the costumbriista sketch, and novel in 19th century Spain.

425 Spanish Literature of the 20th Century 3  
Prereq Span 320. Reading and discussion of representative works by Peninsular writers of the 20th century.

426 Seminar in Spanish Language or Literature 3 May be repeated for credit. Prereq Span 320.

430 Advanced Spanish—Study Abroad V 1-12 Equivalent to Span 311, 407, 408.

434 Spanish American Literature of the 19th Century 3 Prereq Span 320. Reading and discussion of representative works by Spanish American writers of the 19th century.


437 Seminar on Hispanic Literature and Culture 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Span 320. Seminar on topics of Spanish and/or Spanish American literatures and cultures.

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

520 Medieval Literature 3 Selected works.

521 Cervantes 3 Quixote plus selected critical works.

522 Seminar in Golden Age Literature 3 Reading and discussion of representative works of the Spanish Golden Age.

524 Topics in Nineteenth-Century Spanish Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Selected works and topics.

525 Topics in Twentieth-Century Spanish Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Selected works and topics.

527 Seminar in Spanish Literature 3 May be repeated for credit.

533 Seminar in Colonial Spanish American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Seminar on conquest and colonial literature in Hispanic America.

534 Seminar in Nineteenth-Century Spanish American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Study of nineteenth-century Spanish American Literature.

535 Seminar in Twentieth-Century Spanish American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Study of twentieth-century Spanish American literature and culture.

536 Seminar in Spanish American Literature 3 May be repeated for credit.

540 Beginning Instructional Practicum 2 Prereq graduate standing. An introduction to foreign language instruction for beginning teaching assistants.

542 Advanced Instructional Practicum 1 May be repeated for credit; cumulative maximum 4 hours. Supervised practical experience in foreign language teaching. S, F grading.

544 Research and Methods of Teaching Foreign Languages 3 Prereq graduate standing. Current research and theory-based methods in foreign language pedagogy.

547 Special Topics in Hispanic Studies 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Special interdisciplinary topics in Hispanic studies.

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.

General Education Courses

Description of Courses

General Education

GenEd 104 Freshman Seminar 2 Introduction to college disciplinary and interdisciplinary discourse and to academic culture, including its values, procedures, and techniques. Credit not granted for more than one of GenEd 104, 105, U H 105.

105 Residential Freshman Seminar 2 Prereq residency in participating university-approved housing. Introduction to college disciplinary and interdisciplinary discourse and to academic culture, including its values, procedures, and techniques. Credit not granted for more than one of GenEd 104, 105, U H 105.

110 [A] World Civilizations I 3 Integrated study of social, political, and philosophical/religious systems in early civilizations, with an introduction to distinctive art forms.

111 [A] World Civilizations II 3 Integrated study of social, political, and philosophical religious systems in modern civilizations, with an introduction to distinctive art forms of the major world civilizations.

200 [G] Studying World Civilizations Abroad 3 Prereq GenEd 110 or 111 or c/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 3 (0-9) May be repeated for credit; cumulative maximum 5 hours. Prereq permission of Writing Lab Director/Writing Assessment Coordinator. Assigned tutorials in the WSU Writing Lab. S, F grading.

General Studies Program

General studies is for students who have varied interests that may cut across the usual departmental boundaries and who wish to play a major role in deciding on a suitable curriculum of study. The student earns a Bachelor of Arts in Humanities, Bachelor of Arts in Social Sciences, Bachelor of Science, or Bachelor of Liberal Arts degree depending upon the program selected. The degree is not identified with a specific subject-matter field on the diploma.

Total credits for graduation of 120 semester hours should include 40 credits or more in courses at the 300 - 400 level.

Students who wish to enroll in general studies should contact the appropriate coordinator listed below under the various divisions.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Biological, Mathematical, and Physical Sciences

B. Lentz, Coordinator

This division of general studies is for students who are interested in interdisciplinary programs in science or mathematics which offer broader options in course selections than are possible within single departments. Students who wish to earn a Bachelor of Science degree will devise an approved, coherent program of study with the coordinator who fulfills an academic or career goal and includes prerequisites consistent with the 300-400-level major course work. In addition, each stu-
student will satisfy the General Education Requirements and any additional requirements of the College of Sciences.

Plan A—Major/Minor Concentration

Major 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 major concentration g.p.a. Students who complete one of the above major concentrations will receive a Bachelor of Science degree with a major concentration in general biological sciences (Gen B), general mathematics (Gen M) or general physical sciences (Gen P).

Minor 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 minor concentration g.p.a.

Plan B—Three Related Areas in Biological Sciences

A combination of biological sciences courses of at least 39 credits in three or more departments or programs including at least 9 credits in each department or program and 21 300-400-level hours must be completed with at least a 2.0 g.p.a. 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. Students who complete a Plan B curriculum receive a Bachelor of Science degree with a major concentration in general biological sciences (Gen B).

Plan C—Three Related Areas in Physical Sciences

A combination of physical sciences and mathematics courses of at least 39 credits in three or more departments or programs including at least 9 credits in each department or program and 21 300-400-level hours must be completed with at least a 2.0 g.p.a. in these courses. The related areas in physical sciences include chemistry, computer science, geology, mathematics, pharmacy, physics, and math/science-based engineering courses. Students who complete a Plan C curriculum receive a Bachelor of Science degree with a major concentration in general physical sciences (Gen P).

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.

Classical Studies

R. S. Williams, Coordinator

The classical studies option is designed for students who wish to obtain a broad understanding of the ancient Greek and Roman foundation of modern western civilization. Greek and Latin language study is an important part of the program in order to aid comprehension of classical thought, literature, and history. This major should be of great value for students contemplating careers in medicine, law, and business or graduate work in history, archaeology, or literature. It is not suitable for those who wish to teach Latin or Greek or enter graduate school in classics unless additional language study is undertaken. The approach is interdisciplinary and flexible to allow students to pursue varied interests within a broad field. Students who major in classical studies will earn a Bachelor of Arts in Humanities degree.

GENERAL STUDIES CLASSIC STUDIES DEGREE PROGRAM (120 HOURS)

Each student must complete (1) the General Education Requirements and any additional requirements of the College of Sciences and Arts, (2) 120 semester hours which include 40 or more at the 300-400-level, (3) a second year (or its equivalent) of Greek or Latin language, which may be completed at the University of Idaho.

Freshman Year

First Semester

<table>
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<th>Course</th>
<th>Hours</th>
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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>Math Proficiency [N] (GER)</td>
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<td>Science Elective (GER)</td>
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Second Semester

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<tr>
<th>Course</th>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Clas 101 or 341</td>
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<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td>F A 201 [H] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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Sophomore Year

First Semester

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<td>Clas Language Elective1</td>
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<tr>
<td>Hum 101 [H] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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Second Semester

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<td>Hist 341 [H] (GER)</td>
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<td>Hum 105 [H] (GER)</td>
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<td>Phil 290 [H] (GER)</td>
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Junior Year

First Semester

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<tr>
<td>Hist 340 [H] (GER)</td>
<td>3</td>
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<tr>
<td>Approved 300-400-level Elective2</td>
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<td>300-400-level Electives</td>
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<td>Complete Writing Portfolio</td>
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Second Semester

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<td>Intercultural [L,G,K] (GER)</td>
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Senior Year

First Semester

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Second Semester

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<td>Electives</td>
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</table>

1 Students must complete a second year (or its equivalent) of Greek or Latin language, which may be completed at the University of Idaho.

Electronic Media and Culture

V. Villanueva (Pullman), and T. Hunt (Vancouver), Coordinators.

Electronic Media and Culture (EMC) is an option within General Studies that provides an interdisciplinary course of study leading to the BA in Humanities. For description and course of study, see entry under Department of English.


Additional Greek and Latin beyond the basic language requirements, appropriate seminars, special offerings, and independent study from associated departments must be selected with the approval of the coordinator of the classical studies option.

MINOR. Students wishing to minor in classical studies are required to take a minimum of 16 hours of course work, at least 8 of which are at the 300-level and above. Students are encouraged, but not required, to take a classical language.
International Area Studies

B. Frederick, 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 and Russian Area Studies majors are described elsewhere in this catalog).

Students who wish to earn a Bachelor of Arts 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.

Liberal Arts

M. W. Myers, Coordinator

This option is available to students who have interests and motivations which go beyond the 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 will be selected to provide a coherent body of knowledge culminating in a relevant thesis or senior project. As part of their major 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 College of Sciences and Arts must be met, as described in the academic regulations.

A student may select the 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 in 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.

Linguistics

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 adviser together select.

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<tr>
<th>GENERAL STUDIES LINGUISTICS DEGREE PROGRAM (120 HOURS)</th>
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<tr>
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Students must take 21 hours or more, including at least one historical course: Anth 350, 450, 499; Enlg 256, 256, 448, 499.

Students must take 3-12 hours depending upon special emphasis: Cpt S 150, 405; Math 107, 171, 172, 205, 212; Stat 360.

Students must take 3-12 hours depending upon emphasis: Phil 201, 401, 410.

Students must take 6-18 hours depending on special emphasis. The 6-hour minimum, if elected, must be at the 300-level or higher.

Emphasis electives are chosen in consultation with the adviser to meet the required 40 credit hours and may include Psych 490, 492, SHS 371, 375, T & L 333, 414.

Religious Studies

M. W. Myers, Coordinator

Religious studies is a cross-disciplinary program designed for students who wish to develop an understanding of the nature of religion and its role in individual and social life. The program enables students to analyze critically and evaluate western and non-western religions without a predisposition to defend or reject the claims of any particular faith. The program offers both a major and a minor; it is preparatory for careers and future study in international affairs, arts, humanities, social sciences, and intercultural studies. Students who major in religious studies will earn a Bachelor of Arts in Humanities degree.

A student may earn a major in religious studies by completing 39 semester hours of work from among the designated courses in the several departments involved. Of these 39 hours, 12 must consist of the core courses specified below for all majors. Further courses are specified as required or elective depending on the student's focus: western religions, non-western religions, or comparative religions. There is also a language requirement.

A student must also satisfy the General Education and College of Sciences or College of Liberal Arts graduation requirements and take at least 40 of the total 120 semester hours in 300-400-level courses. For a minor in religious studies, a student must take at least 18 semester hours of work, including the core (minus the Seminar in Religious Studies) and three courses from the required list of comparative religion. Religious studies also makes an ideal second major.

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JUNIOR & SENIOR YEAR—CHOICE OF ONE OF THE OPTIONS LISTED BELOW

Non-Western Religions: Hist 273, Phil 314, 315, 407; six courses from: Anth 330; Hist 270, 275, 308, 373, 374, 390; Hum 103

Teacher-Training

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.

Description of Course

General Studies

GenSt 400 General Studies Portfolio 1 Prereq senior standing. Evaluating one’s educational experience and presenting that evaluation in written form. S, F grading.

GENETICS AND CELL BIOLOGY

See School of Molecular Biosciences.

Department of Geology


Geology is the study of the Earth, its composition, structure, origin and evolution. Virtually every aspect of modern life is in some way dependent on the science of geology. For example it is the geologist’s job to discover new reserves of energy and raw materials, evaluate groundwater quality and quantity for drinking water supply, assess geologic hazards in land-use planning and unravel the mechanisms of continental drift and biological evolution.

Both general and advanced training is offered in most specializations in geology. The lower-division courses are designed to provide a strong foundation for those who major in geology as well as a stimulating introduction to earth science for the non-major. The 300-400-level courses provide training for professional geological work as well as preparation for postgraduate study.

The department has modern teaching facilities and special equipment, including an electron microscope, X-ray diffraction and fluorescence instrumentation, inductively coupled plasma mass spectrometer, isotope extraction lines and ion source mass spectrometer, gas chromatographs and carbon analyzer, drilling rig, groundwater field demonstration site, and transmitted and reflected light microscopes. There are active research programs in igneous petrology, geochemistry and mineralogy, structural geology and tectonics, economic geology, 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).

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Candidates for a B.S. degree in geology follow the curriculum outlined below. A minimum of 120 semester hours of credit is required for graduation, including a minimum of 40 semester hours of credit in 300-400-level course work with a 2.0 minimum g.p.a. overall and in the major.

GEOLOGY DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester

Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Geol 101 [P] or 102 [P] (GER) 4
Math 107, if necessary 4

Second Semester

Chem 106 [P] (GER) 4
ComSt 102 [C] (GER) 3
GenEd 111 [A] (GER) 3
Math 140 [N] or 171 [N] (GER) 4

Sophomore Year

First Semester

Geol 210 [P] (GER) 3
Geol 350 [M] 4
Geol 351 1
Math 172, Cpt S 150, or Stat 414 4
Phys 101 [P] or 201 [P] (GER) 4

Second Semester

Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Geol 356 3
Phys 102 [P] or 202 [P] (GER) 4

Junior Year

First Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Geol 315 3
Geol 320 3
Intercultural [I,G,K] (GER) 3
Social Sciences [S,K] (GER) 3
Complete Writing Portfolio

Second Semester

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Econ 102 [S] (GER) 3
Geol 340 [M] 4
Geol 362 2
Elective 3

Year 3, Summer Session:  Geol 308 [M] 6

Senior Year

First Semester

Foreign Language, if necessary 4
Geology Electives 6
Elective 3

Second Semester

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Foreign Language, if necessary 4
Geology Elective 3
Tier III Course (GER) 3

1 B or better required; if less than a B, Engl 402 is required.
2 C or better required.

Honors Students

A senior thesis or enrollment in Geol 499 is required.

Minor in 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 g.p.a. in geology minor course work 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, 340, 350, 308, 310, 320, 355, 356, 362; one year of general physics; one year of general inorganic chemistry; mathematics through one semester of calculus.

Description of Courses

Geology

Geol 101 [P] Introduction to Geology 4 (3-3) Introductory physical geology for non-science majors; emphasis on western U.S. Credit not granted for more than one of Geol 101, 102, 180.
Geol 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 geologic 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] Evolution and Earth History 3 (2-3) Prereq Geol 101 or 102; Rec Biol 102. History and development of the Earth's physical features and its inhabitants. Field trip required.

221 Field Trips 4 (3-3) 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.

260 Quantitative Concepts in Geology 2 (1-3) Prereq Chem 105; Geol 350 or c//; Math 107 or c//; Math 101 or 102. Basic mathematical tools and physical principles for geologic problem solving. Field trip required.

300 Vertebrate Paleontology and Evolution 3 Prereq Geol 210. Vertebrate evolution with focus on dinosaurs including origins, physiology, behavior, and relationships.

308 [M] Geology Field Camp 6 (0-18) Prereq junior standing; Geol 340, 350. Detailed geologic mapping of an area; practices in methods of geologic field work. Cooperative course taught jointly by WSU and UI (Geol 401).

310 Invertebrate Paleontology 3 (2-3) Prereq Geol 210. Morphology, classification, evolution, and palaeoecology of fossil invertebrate organisms.

315 Water and the Earth 3 (2-3) Prereq Chem 106 and Geol 101 or 102; Math 140, 171, or c//; Math 101 or 102; Phys 101 or 201. Basic mathematical tools and physical principles for geologic problem solving. Field trip 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 [M] Mineralogy and Crystallography 4 (2-6) Prereq Chem 101 or 105; Geol 101 or 102. Composition, physical properties, structure, crystallography, identification, and origin of minerals. Field trip required.

351 Optical Mineralogy 1 Prereq c// in Geol 350 or by permission. Elements of optical crystallography as applied to identification of minerals.

356 Igneous Petrology 3 (2-3) Prereq Geol 351. Origin, evolution, and eruption of magmas; emphasizes mineralogy, textures, chemical composition, and physical form of igneous rock. Field trip required.

362 Metamorphic Petrology 2 (1-3) Prereq Geol 356. Mineralogy and petrology of metamorphic rocks using the polarizing microscope. Field trip required.

390 [P] Living on the Edge: Global Climate Change and Earth History 3 Prereq junior standing. Global earth system: ocean, earth, atmosphere, biosphere, and cryosphere; human impact on the climate system; climate change predictions; debates.

403 Environmental Geology 3 Prereq Geol 101 or 102. Geological hazards and geologic problems associated with human activities. Optional field trip.

408 Geophysics 4 (3-3) Prereq Geol 340. Theory and application of geophysical methods for hydrology, environmental, engineering, exploration, and structural geology; review of techniques. Credit not granted for both Geol 405 and 505.


426 Geological Engineering Principles 3 Prereq Geol 101 or 102; Phys 101 or 201. Use of geological information in engineering interpretation, analysis, and design; engineering stability analysis for excavations and slopes. Field trip required. Credit not granted for both Geol 426 and 526. Cooperative course taught by UI (Geol 435), open to WSU students.

428 Geostatistics 3 Same as Stat 428. Cooperative course taught by UI (Geol/Stat 428), open to WSU students.

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 UI (Geol 444), open to WSU students.

451 Pedology 3 (2-3) Same as SoilS 451.

459 Geodynamics 3 Prereq instructor permission. Dynamics, movement, and deformation of the earth's lithosphere, aethenosphere, and mantle; emphasis on deformation processes and constraints derived from investigation of active tectonics using geophysics, seismology, geodesy, and structural geology. Credit not granted for both Geol 459 and 559. Cooperative course taught jointly by WSU and UI (Geol 459/559).

470 Introduction to Economic Geology 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 C E 317; or Geol 315; or all of the following four courses: Chem 106; Geol 101; Math 140 or 172; and Phys 101 or 202. 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 geological surveys and mineral exploration programs; integration and evaluation of geological, geochemical, and geophysical exploration techniques. Cooperative course taught by UI (Geol 476), open to WSU students.

480 Introductory Geochemistry 3 Prereq Chem 106, Geol 350. The chemistry of Earth materials and processes.

483 Radiogenic Isotopes and Geochronology 3 Chem 105 and 106 or equivalent; Geol 480 by permission. Radiogenic isotopes and their uses as chronometers (radiometric dating) and as tracers of earth evolution and differentiation. Cooperative course taught jointly, open to UI students (Geol 483).

498 Undergraduate Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Prereq major in Geol or related field. Research papers presented by students, faculty, and visiting scientist on research geology. S, F grading.

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

505 Geophysics 4 (3-3) Graduate-level counterpart of Geol 405; additional requirements. Credit not granted for both Geol 405 and 505.

511 Advanced Topics in Paleontology 3 Prereq Geol 310, 320. Advanced problems and new techniques in paleontology from current literature. Cooperative course taught by WSU, open to UI students (Geol 511).

515 Paleoclimatology 3 Ecological dynamics as applied to the paleontological record; preservation constraints; animal-sediment interactions; organisms' role in the relative time scale. Field trip required. Cooperative course taught by UI (Geol 515), open to WSU students.

520 Advanced Topics in Sedimentary Rocks 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq Geol 320. Modern aspects of sedimentary rocks. Cooperative course taught by WSU, open to UI students (Geol 520). Field trip required.

521 Clastic Depositional Systems 3 (2-3) Prereq Geol 520. Clastic sedimentary environments: architectural elements and facies analysis. Cooperative course taught by WSU, open to UI students (Geol 528). Field trip required.

523 Advanced Topics in Stratigraphy 3 May be repeated for credit. Prereq Geol 421. Cooperative course taught by WSU, open to UI students (Geol 523).

525 Carbonate Depositional Systems 3 (2-3) Prereq Geol 320. Modern carbonate environments and processes; ancient carbonate rock sequences; carbonate platform-to-basin transition; diagenesis of carbonate rocks. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 529).

526 Geological Engineering Principles 3 Prereq graduate standing. Graduate-level counterpart of Geol 426; additional requirements. Credit not granted for both Geol 426 and 526.
527 Sedimentary Petrography 3 (1-4) Description and classification of sedimentary rocks in thin sections and hand specimens. Field trip required. Cooperative course taught by UI (Geol 527), open to WSU students.

528 Petrology of Carbonate Rocks 3 (2-3) Prereq Geol 320. Origin, classification distribution, depositional environments, and diagenesis of modern and ancient carbonates; emphasis on petrographic analysis. Field trip required. Cooperative course taught by UI (Geol 528), open to WSU students.

529 Geologic Development of North America 3 Prereq Geol 310, 421. Tectonic, magnetic, and sedimentary sequence studies of North American continent through time; concepts of metal and petroleum enrichment related to time and geological processes. Field trip required. Cooperative course taught by UI (Geol 532), open to WSU students.

540 Tectonics 3 Prereq Geol 340. Nature and origin of the Earth’s major tectonic features. Cooperative course taught by WSU, open to UI students (Geol 548).

541 Structural Analysis 3 (2-3) Prereq Geol 340. Structural analysis of complexly deformed rocks in orogenic belts. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 541).

542 Geomechanics 3 Concepts of fracture mechanics as applied to the origin and evolution of faults, joints, dikes, slits, veins, and solution surfaces. Field trip required. Cooperative course taught by UI (Geol 542), open to WSU students.

546 Fault Mechanics 3 Prereq Geol 340 or equivalent. Examination of fault mechanics; internal fault architectures; fault slip distributions; relationship to rock properties; echelon fault systems, as well as earthquake behavior and seismic hazard recognition. Field trip required. Cooperative course taught by UI (Geol 546), open to WSU students.

550 Advanced Mineralogy 3 Prereq Chem 106, Geol 355. Elements of crystal chemistry and crystal physics. Cooperative course taught by WSU, open to UI students (Geol 550).

551 Ore Microscopy and Fluid Inclusion Analysis 3 (0-9) Prereq Geol 355, 470. Ore and alteration mineralogy of major ore deposits; mineral identification, textual interpretation, sample preparation, photomicrography, fluid inclusion analysis. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 551).

552 X-ray Analysis in Geology 3 (2-3) Generation and use of x-rays for geological research; electron microscope/SEM, X-ray fluorescence and X-ray powder diffraction. Cooperative course taught by WSU, open to UI students (Geol 552).

554 Physical Petrology 3 Prereq Geol 356. The applications of continuum mechanics and fluid dynamics to the generation, rise, storage, and eruption of magmas. Cooperative course taught by UI (Geol 554), open to WSU students.

557 High-Temperature Aqueous Geochemistry I 3 (2-3) Prereq Chem 331, Geol 582; or by interview only. Application of solution chemistry to hydrothermal solutions; Eh-pH, log (H2O) -pH, activity-activity diagrams; estimation techniques; water structure; metal complexation; solubility, transport and precipitation; equilibrium speciation; geothermal fields; experimental methods; activity coefficients. Field trip required. Cooperative course taught by UI (Geol 557), open to WSU students.

558 High-Temperature Aqueous Geochemistry II 3 Prereq Chem 331, Geol 557, 582; or by interview only. Expands on topics covered in Geology 557 through seminar format; selected readings from primary literature followed by presentations and discussions in class. Cooperative course taught by UI (Geol 558), open to WSU students.

560 Advanced Igneous Petrology 3 (2-3) Origin, evolution, and tectonic significance of igneous rocks. Cooperative course taught by WSU, open to UI students (Geol 560). Field trip required.

561 Advanced Topics in the Geochemistry of Hydrothermal Ore Deposits 3 Advanced study of geochemical aspects of the formation of an environmental impact of metallic ores of hydrothermal origin; selected readings and presentations. Field trip required. Cooperative course taught by UI (Geol 577), open to WSU students.

563 Igneous Petrogenesis 3 (2-3) Prereq Geol 536. Chemical and petrologic techniques used to interpret the origin and evolution of igneous rocks.

567 Volcanology 3 (2-3) Prereq Geol 356. Eruption mechanisms, volcanic processes and landforms, and volcanic deposits. Field trips required. Cooperative course taught by UI (Geol 567), open to WSU students.

569 Field Methods in Hydrogeology 2 (1-3) Prereq Geol 475, 577 or 579. Theory and practice of acquisition of hydrogeologic data, emphasizing design and execution of field experiments.

570 Advanced Topics in Hydrogeology V 1-4 May be repeated for credit; cumulative maximum 9 hours. Prereq Geol 475. Topics may include organic/inorganic contaminant fate, recharge, carbon cycling, isotope application.

571 Geochemistry of Hydrothermal Ore Deposits 3 (2-3) Prereq Geol 470. Ore formation in hydrothermal environments; sulfide mineral stability, water/rock interactions, and stable isotope relationships to altered rocks. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 571).

573 Advanced Topics in Economic Geology 2 May be repeated for credit. Prereq Geol 470. Ore-forming process or deposit type combining literature synthesis, theoretical evaluation and field trip inspection. Cooperative course taught by WSU, open to UI students (Geol 573). Field trip required.

574 Advanced Remote Sensing 3 (1-4) Same as Soils 574.

575 Seminar in Remote Sensing 1 Same as Soils 575.

577 Advanced Groundwater Hydraulics 3 Same as C E 577.

579 Groundwater Geochemistry V 2-4 May be repeated for credit; cumulative maximum 4 hours. Prereq Chem 331, Geol 475. Organic and inorganic aqueous geochemistry; controls on groundwater contaminant fate. Cooperative course taught by WSU, open to UI students (Hydro 566).

582 Petrologic Phase Equilibria 3 Prereq graduate standing. Thermodynamic and graphical analysis of phase equilibria in igneous and metamorphic rock systems.

583 Radiogenic Isotopes and Geochronology 3 Graduate-level counterpart of Geol 483; additional requirements. Credit not granted for both Geol 483 and 583. Cooperative course taught jointly, open to UI students (Geol 483).

584 Stable Isotope Geochemistry 3 Principles and applications of isotope geochemistry in the geological sciences.

588 Isotope Geology 4 Prereq Geol 480. Geologically useful radioactive isotopes; geochronology and isotopes as tracers. Cooperative course taught by UI (Geol 588), open to WSU students.

592 Advanced Topics in Structural Geology V 1-4 May be repeated for credit; cumulative maximum 6 hours. Advanced topics across normal subject boundaries. Cooperative course taught by WSU, open to UI students (Geol 592).

593 Advanced Topics in Geomechanics V 1-4 Advanced treatment of current topics in geomechanics and related disciplines such as structural geology, hydrogeology, engineering geology. Cooperative course taught by UI (Geol 595), open to WSU students.

597 Advanced Topics in Geology V 1-4 May be repeated for credit; cumulative maximum 6 hours. Topics of current interest in geology.

598 Graduate Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Prereq graduate student in Geol or related field. Papers presented by students, faculty, and visiting scientists on geological 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.

HEALTH POLICY ADMINISTRATION
See listing following Pharmacy.

Department of History


Offerings in the field of history may be classified as American, Asian, European, and Latin American. A major in history can be used in government service, the new specialty of public history, several areas of business and industry, and many other fields. It can also be used in preparation for study of the law, the ministry, archival work, and librarianship. Double majors or complementary minors combining history with other fields are easily arranged.

The department offers courses of study leading to the degrees of Bachelor of Arts in History, Bachelor of Arts in Social Studies, Master of Arts in History, and Doctor of Philosophy. In cooperation with the Department of English and Speech and Hearing Sciences, the department participates in the interdisciplinary Program in American Studies leading to the degree of Doctor of Philosophy.
Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course does not add credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

HISTORY DEGREE PROGRAM (120 HOURS)

36 semester hours history courses required including 6 hours US history, 6 hours European history, and 9 hours of Non-Western/Global history; 21 hours 300-400-level, which must include Hist 300 and 469; and 12 hour concentration (at least 6 hours 300-400-level) in the same or in related disciplines with the advisor's approval.

At least 40 of the total hours required for the bachelor's degree in this program must be in 300-400-level courses. 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 the student will have completed courses meeting General Education and College of Liberal Arts requirements for graduation.

Freshman Year

First Semester

<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>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</td>
<td>4</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
<td>4</td>
</tr>
<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>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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</table>

Sophomore Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>100-200-level Hist Electives¹</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>6</td>
</tr>
<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
<td>4</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>100-200-level Degree Program Course²</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>Foreign Language, if necessary, or Elective</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Hist 300 or Hist Elective (any level)³</td>
<td>3</td>
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Junior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-200-level Degree Program Course³</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Hist Electives¹</td>
<td>6</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Hist 300 or Hist Elective (any level)³</td>
<td>3</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>300-400-level Degree Program Course²</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Hist Elective¹</td>
<td>3</td>
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<tr>
<td>300-400-level Electives</td>
<td>6</td>
</tr>
<tr>
<td>Hist 300</td>
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Senior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>300-400-level Hist Electives¹</td>
<td>6</td>
</tr>
<tr>
<td>300-400-level Degree Program Course²</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hist 469</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Electives</td>
<td>6</td>
</tr>
<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

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 strong minor in a complementary subject field.

SOCIAL STUDIES EDUCATION DEGREE PROGRAM (142 HOURS)

Social Studies is a major for students who plan to earn both a BA and a primary 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 each a teaching credential must apply to Teacher Education Student Services in the College of Education. They should consult with an advisor in History.

The Social Studies Education major consists of 63 hours: Lower-division (30 hours) to include Hist 101, 102, 110, 111; one from Hist 230, 231, 270, 272, 273, 275; one from CAC 101, 111, 131, 151, 171, Hist 150, or W St 200; one from Anth 101, 198, 203, 260; Econ 101 or 102; Pol S 101; Soc 101. Upper-division (30 hours): 15 hours of Hist, to include 422, one European, and one Non-Western/Global course; 15 hours of Social Sciences, to include one from Econ 320, 340, 350, 416, 470; one from Geography (Hist 495, Anth 309, T & L 487); one from Pol S 300, 316, 427, 450, 455; and 6 additional hours from Anth 307, 316, 320, 330, 331, 350; Psych 310, 324, 361, 470; 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.

A supporting endorsement (18-21 hours) is recommended. It should be selected in consultation with the student's advisor.

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Anth 101 [S] or Hist 101 [H] (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>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>Science Elective (GER)</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hist 102 [H] or Soc 101 [S,D] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist 102 [H] or Soc 101 [S,D] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist 111 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist 230 [K], 231 [K], 270 [K], 272 [L], 273 [G], or 275 [K] (GER)</td>
<td>3</td>
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<tr>
<td>Pol S 101 [S] or Psych 105 [S] (GER)³</td>
<td>3</td>
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<td>T &amp; L 300</td>
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Sophomore Year

First Semester

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<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<td>Econ 101 [S] or 102 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Hist 101 [H] or Anth 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist 110 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Pol S 101 [S] or Psych 105 [S] (GER)³</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>Engl 201 [W], 301 [W], or 302 [W] (GER)²</td>
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<td>Hist 102 [H] or Soc 101 [S,D] (GER)</td>
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<tr>
<td>Hist 111 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Hist 230 [K], 231 [K], 270 [K], 272 [L], 273 [G], or 275 [K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Pol S 101 [S] or Psych 105 [S] (GER)³</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 317</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 303</td>
<td>2</td>
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<tr>
<td>Elective³</td>
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Junior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>300-400-level Hist Electives³⁴</td>
<td>6</td>
</tr>
<tr>
<td>300-400-level Econ Elective from list⁴</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 301</td>
<td>2</td>
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<tr>
<td>T &amp; L 317</td>
<td>2</td>
</tr>
<tr>
<td>Elective³</td>
<td>3</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>300-400-level Geography Elective from list³</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Pol S Elective from list³</td>
<td>3</td>
</tr>
<tr>
<td>Hist 422</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 302</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 303</td>
<td>2</td>
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<tr>
<td>Elective³</td>
<td>3</td>
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Senior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>300-400-level Hist Elective³⁴</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Anth, Psych, Soc Elective from list³⁴</td>
<td>3</td>
</tr>
<tr>
<td>EdPsy 402</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 400</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 404</td>
<td>2</td>
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<tr>
<td>Elective³</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>300-400-level Hist Elective³</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Anth, Psych, Soc Elective from list³⁴</td>
<td>3</td>
</tr>
<tr>
<td>Hist 480</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 328</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 445</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 478</td>
<td>2</td>
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<tr>
<td>Tier III Course (GER)</td>
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Fifth Year

First Semester

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>T &amp; L 415</td>
<td>16</td>
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</tbody>
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### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Hist Electives</td>
<td>6</td>
</tr>
<tr>
<td>Hist 300 [M]</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 1301</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 1317</td>
<td>2</td>
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<tr>
<td>Elective¹</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Hist Elective</td>
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<tr>
<td>EdPsy 402</td>
</tr>
<tr>
<td>Hist 422</td>
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<tr>
<td>T &amp; L 1302</td>
</tr>
<tr>
<td>T &amp; L 1303</td>
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<td>Elective¹</td>
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### Senior Year

<table>
<thead>
<tr>
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<th>Hours</th>
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<tbody>
<tr>
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<td>3</td>
</tr>
<tr>
<td>Hist 469 [M]</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 1400</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 1404</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 1445</td>
<td>2</td>
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<tr>
<td>Tier III Course (GER)</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>300-400-level Electives¹</td>
<td>6</td>
</tr>
<tr>
<td>Hist 480</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 328</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 478</td>
<td>2</td>
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</table>

### Fifth Year

<table>
<thead>
<tr>
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<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>T &amp; L 415</td>
<td>16</td>
</tr>
</tbody>
</table>

¹ Courses [I or G] fulfill both this major and the Intercultural GER requirement; [S] courses count as both major and GER credit, but not as Intercultural [I,G,K] credit.
² Pol S 101, Psych 105, Econ 101, or 102 [S] are required for state certification in History and are recommended to fulfill GER requirements.
³ One from Engl 201, 301, 302 [W] is required for admission to teacher certification. Engl 302 is required for the supporting endorsement in English.
⁴ Electives (12 hours in all here and below) may be applied toward a supporting endorsement, which should be selected in consultation with the student's adviser.

### 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.

### Preparation for Graduate Study

Students who have had basic undergraduate training in European and American 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 above schedule of studies.

### Description of Courses

#### History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hist 101</td>
<td>[H] Classical and Christian Europe 3 Greece and Rome, birth of Christianity and Islam, Middle Ages, Renaissance, Reformation, religious wars, Louis XIV.</td>
</tr>
<tr>
<td>Hist 102 [M]</td>
<td>[H] Modern Europe 3 War, revolution, industrialization, culture 18th to 20th centuries; imperialism, democracy, and totalitarianism; Europe's leaders Napoleon to Hitler; Post-WW II developments.</td>
</tr>
<tr>
<td>Hist 110 [S]</td>
<td>[S] American History to 1877 3 Social, economic, cultural history of British mainland colonies/United States to 1877.</td>
</tr>
<tr>
<td>Hist 111 [S]</td>
<td>[S] American History Since 1877 3 Social, economic, cultural history of United States, 1877 to present.</td>
</tr>
<tr>
<td>Hist 150 [S]</td>
<td>[S,D] Peoples of the United States 3 Examination of the peoples of the United States from the beginnings of the colonial era to the present.</td>
</tr>
<tr>
<td>Hist 198 [S]</td>
<td>[S] History Honors 3 Open only to students in the Honors College.</td>
</tr>
<tr>
<td>Hist 201 [K]</td>
<td>[K] Asian/Pacific American History 3 Same as CAC 211.</td>
</tr>
<tr>
<td>Hist 216 [H]</td>
<td>[H,D] African American History 3 Same as CAC 235.</td>
</tr>
<tr>
<td>Hist 230 [K]</td>
<td>[K] Latin America, The Colonial Period 3 Overview of the most significant events, social and ethnic groups, practices, and institutions of colonial Latin America.</td>
</tr>
<tr>
<td>Hist 231 [K]</td>
<td>[K] Latin America, The National Period 3 Investigation of broad themes, individual national histories, and United States policy in Latin America over the past two centuries.</td>
</tr>
<tr>
<td>Hist 255 [S,D]</td>
<td>[S,D] Chicana/o History 3 Same as CAC 255.</td>
</tr>
<tr>
<td>Hist 270 [K]</td>
<td>[K] India: History and Culture 3 Development of civilization; and contemporary societies of India and South Asia.</td>
</tr>
<tr>
<td>Hist 272 [K]</td>
<td>[K] Introduction to Middle Eastern History 3 History of the Middle East from Muhammad to the present; political and religious development and the impact of empires.</td>
</tr>
<tr>
<td>Hist 273 [G]</td>
<td>[G] Foundations of Islamic Civilization 3 Main ideas and institutions that have characterized Islamic civilization since its founding, presented thematically.</td>
</tr>
<tr>
<td>Hist 275 [K]</td>
<td>[K] Introduction to East Asia Culture 3 Civilizations of China and Japan.</td>
</tr>
<tr>
<td>Hist 280 [S,D]</td>
<td>[S,D] Race and Law in American History 3 Same as CAC 280.</td>
</tr>
<tr>
<td>Hist 298 [S,D]</td>
<td>[S,D] History of Women in American Society 3 The roles of women—social, economic, political—in American history from colonial times to the present.</td>
</tr>
<tr>
<td>Hist 299 Model United Nations</td>
<td>3 May be repeated for credit; cumulative maximum 8 hours. Provides students with background of United Nations and prepares them to participate in the Model U.N. conference during spring semester in New York. Cooperative course taught by UI (IS 200/400), open to WSU students.</td>
</tr>
<tr>
<td>Hist 306 [K]</td>
<td>[K] Cultures and Peoples of the Middle East 3 Same as Anth 306.</td>
</tr>
<tr>
<td>Hist 308 [K]</td>
<td>[K] North American Indian History, Precontact to Present 3 History of North American Indian peoples from circa 1350 to present.</td>
</tr>
</tbody>
</table>
550 Europe Since 1945 3 Graduate-level counterpart of Hist 450; additional requirements. Credit not granted for both Hist 450 and 550.

553 Age of Revolution: Europe, 1815-1870 3 Graduate-level counterpart of Hist 453; additional requirements. Credit not granted for both Hist 453 and 553.

554 Age of Imperialism: Europe, 1870-1914 3 Graduate-level counterpart of Hist 454; additional requirements. Credit not granted for both Hist 454 and 554.

555 From the Tudor Revolution to the Glorious Revolution 3 Graduate-level counterpart of Hist 455; additional requirements. Credit not granted for both Hist 455 and 555.

559 Modern Britain 3 Graduate-level counterpart of Hist 459; additional requirements. Credit not granted for both Hist 459 and 559.

560 Field Course in Early European History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and issues in early European history.

562 History of Imperial Russia 3 Graduate-level counterpart of Hist 462; additional requirements. Credit not granted for both Hist 462 and 562.

563 History of the Soviet Union 3 Graduate-level counterpart of Hist 463; additional requirements. Credit not granted for both Hist 463 and 563.

565 East-Central Europe 3 Graduate-level counterpart of Hist 465; additional requirements. Credit not granted for both Hist 465 and 565.

567 Modern France 3 Graduate-level counterpart of Hist 467; additional requirements. Credit not granted for both Hist 467 and 567.

568 Hitler and Nazi Germany 3 Graduate-level counterpart of Hist 468; additional requirements. Credit not granted for both 468 and 568.

569 Field Course in Modern European History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and issues in the comparative history of major world regions.

571 Topics in World History 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Readings in themes and interpretive problems in world history.

572 20th Century Middle East 3 Graduate-level counterpart of Hist 472; additional requirements. Credit not granted for both Hist 472 and 572.

575 Field Course in Women's History 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Readings and interpretive problems in women's history.

576 Revolutionary China, 1800 to Present 3 Graduate-level counterpart of Hist 476; additional requirements. Credit not granted for both Hist 476 and 576.

577 Modern Japanese History 3 Graduate-level counterpart of Hist 477; additional requirements. Credit not granted for both Hist 477 and 577.

578 Field Course in Asian History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in Asian history.

580 Historiography 3

581 American Historiography 3

590 Politics of Developing Nations 3 Graduate-level counterpart of Hist 490; additional requirements. Credit not granted for both Hist 490 and 590.

595 The Teaching of History in College V 1 or 2 May be repeated for credit; cumulative maximum 5 hours. Theory, problems, and methods of teaching history at the college level.

596 Topics in American Studies 3 May be repeated for credit; cumulative maximum 9 hours. Graduate-level counterpart of Hist 496; additional requirements. Credit not granted for both Hist 496 and 596.

597 Seminar in History 2 or 3 May be repeated for credit.

598 History Internship V 1-12 May be repeated for credit; cumulative maximum 12 hours. Graduate-level counterpart of Hist 498; additional requirements. Credit not granted for both Hist 498 and 598.

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

M. F. Wack, Interim 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. Through small classes taught by experienced and enthusiastic faculty dedicated to scholarship and learning, the Honors College helps students to develop genuine intellectual curiosity and 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 independent work, students admitted into the UHC 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. The UHC offers a number of advantageous opportunities for education abroad.

Students who are not admitted to the University Honors College as incoming first-year students may petition to enter the UHC any time after the end of their first semester but no later than the beginning of their junior year. For continued enrollment in the University Honors College, students must maintain an overall B+ average (3.2). Students in the UHC are required to complete the courses specified in the following schedule. In addition, students complete a three-credit Honors Thesis or Project in the junior year. A few selected majors will fulfill this requirement through coursework. Each student must choose an academic advisor, complete a significant piece of writing, and make a public presentation. Research, internship, community service, and education abroad can be used to satisfy this requirement. Selected students will receive a “Pass with Distinction” on their final transcript.

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

First Semester

Engl 198 and 199

Math requirement

Freshman or Sophomore Year

Choose three:

Anth 198, CAC 198, Econ 198, Hist 198, Pol S 198, Psych 198, Soc 198

Choose one:

U H 260, Hum 198, Phil 198

Both required for non-science majors:

Biol 298 (spring only)

Ph S 298 (fall only)

Junior Year

U H 450, 451, 452, 453, 454, 455, or 456: Honors Thesis or Project

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
Description of Courses

A S 198 Animal Science Honors 3
Anth 198 Anthropology Honors 3
Biol 298 Biological Science Honors 4 (3-3)
CAC 198 Comparative American Cultures Honors 3
Chem 115 Chemical Principles Honors I 4 (3-3)
Chem 116 Chemistry Principles Honors II 4 (3-3)
Econ 198 Economics Honors 3
Engl 198 English Composition Honors 3
Engl 199 English Composition and Literature Honors 3
Geol 180 Geology Honors 4 (3-3)
Hist 198 History Honors 3
Hum 198 Humanities Honors 3
Phil 198 Philosophy Honors 3
Ph S 298 Physical Science Honors 4 (3-3)
Phys 205 Physics Honors I S 5 (3-4)
Phys 206 Physics Honors II S 5 (3-4)
Pol S 198 Political Science Honors 3
Psych 198 Psychology Honors 3
Soc 198 Sociology Honors 3

University Honors

U H 105 Honors Freshman Seminar 1 Introduction to the academic culture and opportunity to enrich learning in entry-level courses. Credit not granted for more than one of GenEd 104, 105, U H 105.

150 Introduction to Science and Technology 3 (2-3) Physical/biological science principles, methods and roles of scientists and engineers, historical context, current technological issues, limits of scientific inquiry.

260 Honors Seminar 2 May be repeated for credit. In-depth study of selected topics.

330 Development of Western Civilization 3 Examination of the literary, cultural, philosophical, and historical traditions within western civilization. Required of all Honors College students in their junior or senior year.

350 Development of Global Civilizations 3 Cultural and historical traditions of one or more civilizations; primary focus on Asian, African, Middle Eastern, and South American civilizations. Required of all Honors College students in their junior or senior year.

400 Honors Culture and Arts Practicum V 1-3 May be repeated for credit; cumulative maximum 6 hours. May be used to fulfill the independent study requirement for the Honors College. S, F grading.

410 Domain of the Sciences 3 Prereq admittance to Honors Program. Examination of scientific methodologies and their connections to human society.

430 Education Abroad Practicum and Research V 1-4 By interview only. Special assignments and research related to education abroad. S, F grading.

440 Domain of the Arts 3 An examination, frequently comparative, of the visual, literary, environmental, and performing arts. Required of all Honors College students in their senior year.

450 Honors Thesis or Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Thesis or project directed by student’s major department. S, F grading.

451 Honors Interdisciplinary Thesis/Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Supervised academic experience based on community service or designed to assist in solving particular social problems; formal research paper. S, F grading.

452 Honors Community Service Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Supervised experiential learning project combining academic training with practical experience within one’s career field or other areas; formal research paper. S, F grading.

453 Honors Internship Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Supervised experiential learning project combining academic training with practical experience within one’s career field or other areas; formal research paper. S, F grading.

454 Honors Teaching Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Classroom and teaching experience; results are presented in a formal research paper. S, F grading.

455 Honors Education Abroad Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Supervised writing and research carried out while participating in a WSU-sponsored exchange. S, F grading.

456 Honors Team Research Projects V 1-3 May be repeated for credit; cumulative maximum 3 hours. Collaborative writing and research experience guided by one or more faculty members; collaborative project and individually produced formal research papers. S, F grading.

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

Department of Horticulture and Landscape Architecture


Horticulture

Courses in horticulture are designed to give instruction in 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, and related fields. A science emphasis is designed to prepare students for graduate study and careers in research and teaching.

The department offers an undergraduate minor in the areas of fruit and vegetable production or environmental 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 plant biology.

An interdisciplinary curriculum in integrated pest management is available to those students whose interests span the areas of horticulture and pest management. The curriculum is described under the entomology section of this bulletin.

The department offers courses of study leading to the degree of Bachelor of Science in Horticulture, Bachelor of Science in Landscape Architecture, Master of Science in Horticulture, Master of Science in Landscape Architecture, and Doctor of Philosophy.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Students in horticulture may focus on environmental horticulture, fruits and vegetables, or tree fruit management.
### Environmental Horticulture Degree Program (133 Hours)
**Freshman Year**

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<tr>
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<tr>
<td>Arts &amp; Humanities</td>
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<td>[H,G] (GER)</td>
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<tr>
<td>Bot 120 [B]</td>
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<td>(GER)</td>
</tr>
<tr>
<td>Chem 101 [P]</td>
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<td>or 105 [P] (GER)</td>
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<tr>
<td>Engl 101 [W]</td>
<td>3</td>
<td>(GER)</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A]</td>
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<td>(GER)</td>
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<tr>
<td>Chem 102 [P] or 106 [P]</td>
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<td>(GER)</td>
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<tr>
<td>ComSt 102 [C] or H D 205 [C]</td>
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<td>(GER)</td>
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<td>GenEd 110 [A] or 111 [A]</td>
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<tr>
<td>Hort 201</td>
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**Sophomore Year**

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<td>Hort 231</td>
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<tr>
<td>Intercultural [I,G,K]</td>
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<td>(GER)</td>
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<td>Soils 201</td>
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<tr>
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<td>(GER)</td>
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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K]</td>
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<td>(GER)</td>
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<td>Hort 232</td>
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**Junior Year**

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<tr>
<td>Entom 340</td>
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<td>Soils 441</td>
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**Senior Year**

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<td>Hort 320</td>
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<td>Hort 321</td>
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<td>Hort 418 [M]</td>
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<td>Hort 438</td>
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<tr>
<td>Hort 416</td>
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<tr>
<td>Hort 425 [M]</td>
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<td></td>
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<tr>
<td>Hort 439</td>
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<td>Tier III Course (GER)</td>
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### Fruit and Vegetable Horticulture Degree Program (121 Hours)
**Freshman Year**

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<td><strong>First Semester</strong></td>
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<tr>
<td>Bot 120 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Chem 101 [P] or 105 [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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<th>Semester</th>
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<tr>
<td><strong>Second Semester</strong></td>
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<td>Chem 102 [P] or 106 [P] (GER)</td>
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<tr>
<td>ComSt 102 [C] or H D 205 [C] (GER)</td>
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**Sophomore Year**

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<td>Chem 240</td>
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<td>Hort 320</td>
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<tr>
<td>Hort 334</td>
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<tr>
<td>Hort 310 &amp; 311; 313; or 320 &amp; 321</td>
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<tr>
<td>Soils 201</td>
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<tr>
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<tr>
<td>Ag Ec 201 [S] or Econ 102 [S]</td>
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<td>(GER)</td>
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<td>Arts &amp; Humanities [H,G] or Social Science [S,K]</td>
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<td>(GER)</td>
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<td>Hort 230</td>
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<td>Hort 251</td>
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**Junior Year**

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<td><strong>First Semester</strong></td>
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<td>Hort 310 &amp; 311; 313; or 320 &amp; 321</td>
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**Senior Year**

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**Second Semester**

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<td>Electives</td>
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### Tree Fruit Management Degree Program

The Tree Fruit Management option in the Horticulture B. S. degree is an integrated, cooperative program between Wenatchee Valley College and the Department of Horticulture and Landscape Architecture. This option is designed to train professional horticulturists for deciduous tree fruit industries. The first half of the program is taken at Wenatchee Valley College, where the educational emphasis is on applied aspects of tree fruit production and management through courses, orchard practicum experiences and internships. Wenatchee Valley College, located in the heart of Washington’s tree fruit industry, has teaching orchards and well equipped facilities. The second half of the program is taken at Washington State University where courses, laboratories and research experience provide students with an advanced knowledge of the science, technology and management of tree fruit production systems. Additional courses are taken to increase the breadth of knowledge about the diversity of horticultural crops and awareness of current issues in horticultural science.

**Freshman Year (Wenatchee Valley College)**

<table>
<thead>
<tr>
<th>Quarter</th>
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<td>Agri 153</td>
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<tr>
<td>Agri 161</td>
<td>5</td>
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<tr>
<td>Chem 110 (WSU [P] GER)</td>
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<td>Engl 101 (WSU [P] GER)</td>
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<td>Agri 163</td>
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**Sophomore Year (Wenatchee Valley College)**

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Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

PRE-LANDSCAPE ARCHITECTURE

Prelandscape architecture (preLA) 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 preLA 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 adviser. The completion of preLA 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 preLA course work will be accepted directly into preLA.

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Description of Courses

Horticulture
Hort

101 Horticulture and Society 3 (2-3) Principles and practices of gardening for personal, economic, environmental and social benefit; horticultural technologies; fruits, vegetables, landscape and interior plants.

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.

201 Introduction to Horticultural Science 4 (3-3) Prereq Bot 120. Fundamentals of plant growth and development at the cellular and whole plant levels as influenced by environment and management decisions.

231 Landscape Plant Materials I 3 (2-3) Prereq Bot 120 or Hort 201. Characteristics, ecology, nomenclature, identification, selection, and use of important woody and herbaceous landscape plant species.

232 Landscape Plant Materials II 3 (2-3) Prereq Bot 120 or Hort 201. Continuation of Hort 231.

251 Plant Propagation 4 (2-6) Prereq Biol 103, Bot 120, Hort 101, or Bot 201. Principles and methods of multiplying herbaceous and woody plants and their handling up to saleable size. Field trip required.

260 Fruit and Vegetable Production 3 (2-3) Prereq Biol 103 or Bot 120. Understanding anatomical structure of plants, internal and external growth regulation, environmental effects on growth, application of knowledge to cropping systems.

265 Growth and Development of Crop Plants I 2 Prereq Bot 104 or Bot 120. Understanding anatomical structure of plants, internal and external growth regulation, environmental effects on growth, application of knowledge to cropping systems.

305 Growth and Development of Crop Plants II 2 Prereq Hort 304. Continuation of Hort 305.

310 Pomology I 3 Prereq biological or plant science course. Science and management of deciduous tree-fruit production. Cooperative course taught by WSU, open to UI students (PIsc 461).

311 Pomology Laboratory I 0 (0-3) Prereq citrus c// in Hort 201. Continental climate practices in deciduous tree-fruit production. Field trip required.

312 Viticulture and Small Fruits 3 Prereq biological or plant science course. 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 I Same as CropS 317.

319 Introductory Plant Physiology Laboratory I 0 (0-3) Same as Bot 319.

320 Olericulture 3 Prereq Hort 201 or plant science course; Sol 201. Science, business, and art of vegetative crop production: culture, fertility, growth, physiology, handling, marketing; garden, commercial, greenhouse, tropical, specialty vegetables. Cooperative course taught by WSU, open to UI students (Psc 320).

321 Olericulture Laboratory I 0 (0-3) Prereq citrus c// in Hort 201. Production principles and practices of vegetable crops; plant characteristics, cultivars, nutrition, growth, and development. Field trip required. Cooperative course taught by WSU, open to UI students (Psc 321).

325 Plant Biotechnology 3 Same as Bot 325.

331 Landscape Plant Installation and Management 3 (2-3) Prereq Hort 231, 232. Principles and practices for installation and management of interior and exterior landscapes; specifications, site preparation transplanting, growth control, problem diagnosis.

332 Interior Plantscaping 2 Prereq biological or plant science course or by permission. Design, selection, installation, management, and maintenance of plantings within buildings; effects of interior plants on people and the environment.

333 Interior Plantscaping Laboratory 1 (0-3) Prereq Hort 322. Identification, cultural requirements, and pest problems of common interior plants; integrations of business practices with design and maintenance considerations. Field trip required.

334 (234) Controlled Environments for Horticultural Production 3 Prereq Hort 201. Principles and practices for modifying environmental factors for horticultural production in controlled environments; methods for environmental measurements. Field trip required. Cooperative course taught by WSU, open to UI students (Psc 234).

340 Nursery Management 3 (2-3) 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.

356 Preparation for Entering the Horticulture Profession 1 Prereq junior in Hort. Resume-writing; job application and interviewing; investigation of job opportunities; contact with employers; internship reports; practice in oral communication.

399 Professional Work Experience V 1-4 May be repeated for credit, cumulative maximum 8 hours. Prereq basic horticulture. By interview only. Planned and supervised work experience. S, F grading.

405 Genetic and Molecular Aspects of Plant Reproduction 3 (2-3) Prereq Bot 320, MbioS 301, 303. Genetic, molecular, cellular and evolutionary aspects of plant reproductive strategies and their manipulations. Credit not granted for both Hort 405 and 505.

416 Advanced Horticultural Crop Physiology 3 Prereq Bot 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.

417 Plant Pest Control I 3 (2-3) Prereq Chem 240. Principles, methods, equipment, chemicals, benefits, and hazards of plant pest control. Field trip required. Credit not granted for both Hort 417 and 517.

418 [M] Post-harvest Biology and Technology 3 (2-3) Prereq Bot 320. Physical and physiological basis for handling and storage practices; perishable organ ontogeny and physiological disorders; post-harvest environment requirements. Field trip required. Cooperative course taught by WSU, open to UI students (Psc 418). Credit not granted for both Hort 418 and 518.

420 Potato Physiology and Production Technology 2 (1-3) Prereq Bot 320. Plant and tuber physiology; physical, chemical, physiological and technical concepts of production, storage, and processing of potatoes. Field trip required. Credit not granted for both Hort 420 and 520. Cooperative course taught by WSU, open to UI students (Psc 420).

421 [M] Fruit Crops Management 3 Prereq Hort 317 or Bot 325. Production principles and practices of fruit crops; plant characteristics, cultivars, nutrition, growth, and development. Field trip required. Cooperative course taught by WSU, open to UI students (Psc 421).

425 [M] Current Topics in Horticulture 3 Prereq junior standing. Use scientific, business, government, and popular information to explore trends that impact horticulture; organize and evaluate information; investigate selected topics.

438 Ornamental Plant Production I 3 (2-3) Prereq Hort 234. Fall and winter production practices of greenhouse and nursery crops. Field trip required. Cooperative course taught by WSU, open to UI students (Psc 430). Credit not granted for both Hort 438 and 538.

439 Ornamental Plant Production II 3 (2-3) Prereq Hort 234. Production requirements for spring greenhouse and nursery crops; garden center management considerations. Field trip required. Credit not granted for both Hort 439 and 539. Cooperative course taught by WSU, open to UI students (Psc 431).

445 [M] Plant Breeding 3 Same as CropS 445.

469 Seed Production 3 Same as CropS 469.

480 Agricultural Issues 1 Prereq Biol 103, junior standing. Facts regarding current issues about pollution, the environment, marketing, and endangered species; formulation of position statements regarding current issues.

490 Potato Science 3 Prereq Hort 416. History, botanical characteristics, seed physiology and production, plant population, physiology of growth, and pest management; factors influencing maturation, harvest, yield, grade, bruise control, storage, and quality maintenance; economics of production and research on a global basis. Credit not granted for both Hort 490 and 590. Cooperative course taught by UI (Psc 490), open to WSU students.

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 Bot 320. Current topics and research techniques in horticulture.

505 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Graduate-level counterpart of Hort 405; additional requirements. Credit not granted for both Hort 405 and 505.

509 Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Continuous enrollment required for regularly enrolled graduate students in Hort. Recent developments in horticulture. S, F grading.

510 Graduate Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Literature reviews and research progress reports.

512 Advanced Pomology 3 Modern concepts, research, and problems of the fruit industry as reflected by current literature; practice in critical review of scientific literature.

515 Seminar in Plant Physiology 1 May be repeated for credit; cumulative maximum 4. A cross-discipline seminar, including botany, crop and soil sciences, horticulture, plant pathology, and plant physiology.

516 Advanced Horticultural Crop Physiology 3 Graduate-level counterpart of Hort 416; additional requirements. Credit not granted for both Hort 416 and 516.

518 Post-Harvest Biology and Technology 3 (2-3) Prereq Hort 317, 320. Physical and physiological basis for handling and storage practices; perishable organ ontogeny and physiological disorders; post-harvest environment requirements. Field trip required. Cooperative course taught by WSU, open to UI students (Psc 518).

520 Potato Physiology and Production Technology 2 (1-3) Prereq Bot 320. Plant and tuber physiology; physical, chemical, physiological and technical concepts of production, storage, and processing of potatoes. Field trip required. Credit not granted for both Hort 420 and 520. Cooperative course taught by WSU, open to UI students (Psc 420).

521 [M] Fruit Crops Management 3 Prereq Hort 317 or Bot 325. Production principles and practices of fruit crops; plant characteristics, cultivars, nutrition, growth, and development. Field trip required. Cooperative course taught by WSU, open to UI students (Psc 521).
520 Potato Physiology and Production Technology 2 (1-3) Graduate-level counterpart of Hort 420; additional requirements. Credit not granted for both Hort 420 and 520. Cooperative course taught by WSU, open to UI students (PlSc 570).

521 Fruit Crops Management 3 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 (PlSc 533).

538 Ornamental Plant Production I 3 (2-3) Graduate-level counterpart of Hort 438; additional requirements. Credit not granted for both Hort 438 and 538. Cooperative course taught by WSU, open to UI students (PlSc 530).

539 Ornamental Plant Production II 3 (2-3) Graduate-level counterpart of Hort 439; additional requirements. Credit not granted for both Hort 439 and 539. Cooperative course taught by WSU, open to UI students (PlSc 531).

570 Plant Molecular Genetics 3 Same as GenCB 570.

590 Potato Science 3 Graduate-level counterpart of Hort 490; additional requirements. Credit not granted for both Hort 490 and 590. Cooperative course taught by UI (PlSc 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.

Description of Courses

Landscape Architecture

L A

101 Landscape Architecture Graphics 3 (1-6) Basic mechanical and freehand drawing; use of various drafting media, two- and three-dimensional drawing, lettering, and rendering techniques.

102 Introduction to Computer Graphics in Landscape Architecture 3 (2-3) Computer-aided analysis, design, graphic techniques using AutoCAD, IntelliCAD, LANDCAD, to gain 2- and 3-D design, analysis, drafting, rendering, and web format skills.

202 [H] The Built Environment 3 Same as Arch 202.

250 Beginning Landscape Design and Construction 3 (2-3) Prereq sophomore standing; by interview only. Basic landscape architecture design and construction for small spaces.

260 History of Landscape Architecture 3 Historical development in the practice and profession of landscape architecture throughout the world, circa B.C. 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. Application of basic design principles and design process to site planning: integration of design graphics and verbal/graphic presentations.

263 Landscape Architectural Design II 3 (0-6) Prereq I A 262. Basic design and graphic techniques related to solving of elementary design problems.

264 Basic Landscape Design 3 For nonmajors. Design theory and principles; site design factors; design process application; construction criteria; graphic construction communication; landform; circulation systems; plant uses.

299 Professional Work Experience: Contracting and Maintenance 1 or 2 Prereq major in preLA or L A. Project planned with and approved by faculty as professional work experience; written report and presentation to faculty required.

362 Landscape Architectural Design III 4 (2-6) Prereq L A 263, junior in L A. 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 263, junior in L A. 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 grading and surface drainage facilities, subsurface drainage systems, horizontal and vertical road design, site design, and construction document techniques.


380 Ecological Applications in Design 3 (2-3) Prereq junior standing in Landscape Architecture or instructor’s permission. Fundamental concepts of ecology, particularly from population, community, landscape, landscape restoration, and historical ecology, as they relate to planning and design.

399 Professional Work Experience: Office Practice 1 or 2 May be repeated for credit; cumulative maximum 4 hours. Prereq junior in L A. Planned professional work experience in design and office practice as approved by faculty; written report and presentation to faculty required. S, F grading.

425 Issues in Landscape Evolution and Design Theory 3 Prereq senior standing. Investigation of historical relationships between humans and environment; exploration of major theoretical approaches to design, planning, and management of landscapes.

440 Advanced Application in Computer-Aided Design 3 Prereq introductory course in CAD. Advanced applications in 2-D and 3-D CAD, including photorealistic modeling and rendering, landform analysis, animation, and customization.

450 [M] Principles and Practice of Planning 3 Prereq senior standing. History, theory, methods, and processes in regional planning; contemporary issues and professional practice.

460 Interdisciplinary Design Studio 5 (2-6) Prereq senior standing in I A. 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 4 (2-6) Prereq Biol 120; Geol 101 or Soils 201. Application of ecological planning process for landscape inventory and analysis.

468 [M] Senior Creative Project 4 Prereq L A 475. Individually developed studio and scholarly project conducted with a faculty mentor; demonstration of advanced verbal, graphic, and written presentations required.

470 Landscape Architectural Design V 4 (1-9) Prereq senior in L A. Advanced group and individual landscape architecture design and planning projects; professional applications of site design theory and design processes.

475 Senior Project Proposal 2 Prereq senior in L A. Program planning for senior project. S, F grading.

480 Professional Practice 2 Prereq senior in L A. Current office practices, design and construction management techniques; introduction to construction contract legal requirements within the practice of landscape architecture. Cooperative course taught jointly by WSU and UI (LA 358).

485 [M] Senior Creative Project I 4 (0-8) Prereq L A 425. Individually developed studio or scholarly project conducted with faculty adviser; 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 adviser; synthesis of information, solution development, and documentation.

491 Topics in Design 3 Prereq junior standing.

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

510 Philosophy and Theory in Landscape Architecture 3 Prereq graduate standing. Natural and cultural processes that characterize the interaction between humans and the landscape.

511 Methodology and Communication in Landscape Architecture 3 Prereq graduate standing. Methods of investigation and analysis of tools used for communication in landscape architecture research.

520 The Northern Rocky Mountain Regional Landscape 4 (2-4) Prereq graduate standing. Biophysical characteristics of the Northern Rocky Mountain regional landscape.

521 Cultural Interpretation of the Regional Landscape 4 (2-4) Prereq graduate standing. Cultural characteristics of the Northern Rocky Mountain regional landscape.

530 Philosophies and Theories of the Built Environment 3 Same as Arch 530.

540 Research Methods 3 Same as Arch 540.

550 Design Applications 2 Same as Arch 550.

560 Interdisciplinary Seminar 3 Same as Arch 560.

561 Interdisciplinary Seminar II 3 Same as Arch 561.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.
Program in Hotel and Restaurant Administration

Directors: W. T. Umbreit; Taco Bell Distinguished Professor, W. Maynard; Ivar Haglund Distinguished Professor, D. Rutherford; Associate Professors, C. Becker, K. Kendall, M. C. Paxson; M. Stewart; Assistant Professors, D. Garsoy, Assistant Professor and Coordinator Swiss Center, W. H. Samenfink, N. Swanger, M. Viregg; Culinary Educator, G. Fritz; Director External Relations and Placement, A. Luoma; Lecturers, M. O’Fallon; Professors Emeriti, P. Diaz, L. Kreck, D. Smith.

The program provides instruction at WSU Pullman and also to qualified transfer students in Brig, Switzerland. This program provides specialized study of the major organizational and administrative problems of the hotel and restaurant industry. The program is intended to prepare graduates for the managerial opportunities available in the industry here and abroad. The curriculum provides for the well-rounded education of the hotel, restaurant, club, and institutional executive. It includes courses in the arts and sciences, economics, business administration, and foods, as well as in hotel and restaurant management. The course of study leads to the degree of Bachelor of Arts in Hotel and Restaurant Administration.

Certification Requirements

Pre-Hotel and Restaurant Administration (Pre-HA) Major Certification Requirements.

Certification requirements for the pre-hotel and restaurant administration major include completion of 24 semester hours, 6 hours of which must be in Acctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Mgt 101, or MIS 250; a 2.0 cumulative g.p.a. and a 2.0 business g.p.a.

Hotel and Restaurant Administration (HA) Major Certification Requirements.

To be eligible for certification as a major in hotel and restaurant administration, students must have earned at least 60 semester hours credit, including all of the following courses: Acctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Engl 101, Math 201; Math 202 or 205; MIS 250, and meet current standards of a cumulative g.p.a. of at least 2.5. All students are eligible to petition for the consideration of alternative criteria. A 2.0 cumulative business g.p.a. is required for graduation.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

All students majoring in hotel and restaurant administration must see their adviser and have a degree audit upon completion of 45 hours of credit. By the completion of 60 hours of credit, all students must have completed English, math and 100-200-level CBE core courses. These required courses are Acctg 230, 231; B Law 210; Dec S 215; Econ 101, 102; Engl 101; Math 202; Math 201; MIS 250. Enrollment in 300-level CBE business and hotel courses is restricted to those students who have met these requirements and certified as HA majors.

All students majoring in hotel and restaurant administration must complete 50% of their course work outside of the College of Business and Economics. Nine hours of economics and four hours of Dec S 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/hotel courses must be taken in residence at WSU; and 3) The last 30 hours of course work must be taken at WSU.

The chair of the department and/or the dean of the college must approve in writing any portion of the 300-400-level credit which is to be satisfied by transfer, correspondence, independent study, or other credit which may not carry WSU grade points. 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 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.

HOTEL AND RESTAURANT ADMINISTRATION DEGREE PROGRAM (120 HOURS) ✔FYDA

Freshman Year

First Semester

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<td>Econ 101 or 102 [S] [S] (GER)</td>
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<tr>
<td>English [W] (GER)</td>
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<tr>
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<tr>
<td>H A 181</td>
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<td>Math 201</td>
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Second Semester

<table>
<thead>
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<th>Hours</th>
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<tbody>
<tr>
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<tr>
<td>Oral Com [C] (GER)</td>
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<tr>
<td>Math 202 [N] or 205 [N] (GER)</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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Sophomore Year

First Semester

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Acctg 230</td>
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<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>
<td>3</td>
</tr>
<tr>
<td>H A 220</td>
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<tr>
<td>MIS 250</td>
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Second Semester

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<tbody>
<tr>
<td>Acctg 231</td>
<td>3</td>
</tr>
<tr>
<td>B Law 210</td>
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<td>Dec S 215</td>
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<tr>
<td>H A 258</td>
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<td>H A 280</td>
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Junior Year

First Semester

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<tbody>
<tr>
<td>English [W] or 403 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H A 358*</td>
<td>3</td>
</tr>
<tr>
<td>Mgt 301</td>
<td>3</td>
</tr>
<tr>
<td>Mktg 360</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)**</td>
<td>3 or 4</td>
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<tr>
<td>Complete Writing Portfolio or Semester Abroad In Switzerland</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Econ 325</td>
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</tr>
<tr>
<td>H A 381 [M]</td>
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</tr>
<tr>
<td>H A 491</td>
<td>3</td>
</tr>
<tr>
<td>H A Elective</td>
<td>3</td>
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<tr>
<td>Soc or Psych [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>or Semester Abroad In Switzerland</td>
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Senior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Econ 301, 350, or 450</td>
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<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>H A 320</td>
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<tr>
<td>H A 480 [M]</td>
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<td>MIS 350</td>
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Second Semester

<table>
<thead>
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<th>Course</th>
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<tbody>
<tr>
<td>H A 495</td>
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<td>H A Elective</td>
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<tr>
<td>Mgt 450</td>
<td>3</td>
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<tr>
<td>Pol Sci Elective</td>
<td>3</td>
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<tr>
<td>Tier III Course (GER)</td>
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</table>

*For a total of 7 hours of Biological and Physical Sciences.

**H A 356 required as substitute for H A 358 at Brig site.

Minor in Hotel and Restaurant Administration

To be eligible to certify in the hotel and restaurant administration minor, students must have a cumulative g.p.a. of 2.5. A minor in hotel and restaurant administration requires at least 16 hours of credit, 8 of which must be 300-400-level, with an overall g.p.a. of at least a 2.0 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 100-200-level only. All other course work must be taken in residence at WSU. The Hotel and Restaurant Administration department chairperson must approve deviations from the stated requirements: Hotel and Restaurant Administration: H A 181, 220, 280, 301, 381, 435.

Transfer Students

A student planning to transfer to hotel and restaurant administration from a two-year program should have made appropriate academic progress before transferring. In addition, the student should have 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.

Qualified graduates of the International College of Hospitality Administration in Brig, Switzerland, may be admitted to the Swiss Center for HRA. Opportunities are available to all H A majors for a semester abroad at the Swiss Center.

Description of Courses

Special Notice: Enrollment in 300-level hotel courses by non-hotel majors is restricted to students who have certified a major and have junior standing. Enrollment in 400-level hotel courses is open only to juniors and seniors officially certified into degree/minor programs that require these hotel courses.
Hotel and Restaurant Administration

H A

181 Introduction 3 Historical development and organizational structure of the hospitality service industries. Cooperative course taught by WSU, open to UI students (ReMgt/Rec 181).

182 (220) Introduction to Industry Experience 1 Preparation for work in hospitality/business organizations; resume writing, interview skills, use of Career Services, career dress. S, F grading.

201 Quantity Food Production 3 Principles of menu writing, sanitation and food preparation applied to management of quantity food production and service.

235 Principles of Tourism 3 Underlying principles and practices in domestic tourism. Cooperative course taught by WSU, open to UI students (RRT 236/Rec 235).

258 Fundamentals of Cooking and Dining Room Service 2 (1-3) Prereq FSHN 120. Practical applications of cooking techniques, dining room service, and restaurant operations including safety, sanitation, flow of goods and industry trends.

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.

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 H A major; senior standing; H A 220. Students work in various hospitality operations for 1,000 hours; work performed 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; H A 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 5 105. Problems encountered in the management of food and beverage operations such as control and forecasting.

358 Foodservice Systems and Control 3 Prereq Acctg 230, FSHN 120, H A 238, H A major. Operational control processes, control systems, and cost analysis procedures in food and beverage management.


375 Club Management 2 Prereq junior standing. The identification of managerial problems unique to club operations and their potential solutions.


382 Multi-Unit Management 3 Prereq H A 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 H A 301. Theory and practice of meeting/convention/event management, including goals, organization on- and off-site operations, evaluation.

386 Applied Industrial Relations 2 Prereq junior standing. Labor relations; history, organization, and elections of bargaining agents, negotiation and administration of contracts.

435 International Tourism 3 International and domestic institutions of tourism on the society.

440 Association Management 3 Prereq H A 301. Theory, organization, structure and management of voluntary associations; economics and role in convention industry.

450 Convention Facilities Management 3 Prereq H A 301. Politics, sitting, design, construction, organization and management of public assembly facilities, including private structures.

458 Advanced Culinary Management and Catering 3 Prereq H A 358. Advanced kitchen/dining room management with emphasis on culinary skill development and the planning and administration of catering events.


491 Operational Analysis 3 Prereq Acctg 231; Dec 5 215; 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 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 H A 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 Hotel and Restaurant Administration Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative education internship with a business, government or nonprofit organization. S, F grading.

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

535 International Tourism Strategy and Planning 3 Tourism components; social, economic, and cultural effects on societies; the management of tourism businesses.

580 Hospitality Services Marketing 3 Prereq Mktg 505. Services marketing concepts and principles applied to hospitality organizations; strategies to market services and control quality.

581 Services Management 3 Prereq Mgt 501. Design and management of service systems in hospitality operations; control of customer interaction, personnel activities and inventory.

597 Special Topics 3 Strategic business policy; concepts, and practices in hospitality management.

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

Department of Human Development


Students seeking a bachelor of arts degree in this department focus on human development across the lifespan as it occurs within the family, and is linked to a variety of contexts within communities. The program centers on understanding the complexity of physical, social, cognitive, and affective individual development with emphasis on development within the family. The curriculum examines human and family development across the lifespan (i.e., child, adolescent, younger and older adults). Opportunities are also available to become state certified as a teacher in preschool to third grade or as a family and consumer scientist in junior high or senior high school.

In addition to the teaching certifications, the department offers two emphasis areas. The first emphasis is human development. Within this emphasis students prepare to work with children, adolescents, or older adults in a variety of professional settings. These may include positions in foster parent programs, adoption agencies, various child care or head start programs, teen centers, nursing homes, and other community-based programs for the elderly. The second emphasis is family studies. Students choosing this emphasis will be prepared for a wide range of careers, most of which focus on some aspect of services offered to families or family members by public agencies and/or private businesses.

Students completing a human development emphasis or family emphasis 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 semester. The Bachelor of Arts degree in Human Development requires a cumulative G.P.A. of 2.5 or better in all H D courses and other courses accepted for the H D core. Students must achieve a cumulative G.P.A. of 2.5 or better in courses used to fulfill requirements for the Human Development and Early Childhood minors.

Both human development and family emphases provide preparation for graduate work leading to
teaching, research, counseling, or administrative positions in social service, resource management, or pre-family therapy.

The department also offers a Master of Arts degree in Human Development. Areas of focus are early childhood, parent-child relations, youth-at-risk, applied developmental science, and community collaborative research. This degree prepares graduates for leadership positions in human service professions, entrance to doctoral programs, and research/teaching careers in higher education. More information is available from the graduate school.

The outline below describes a course of study leading to a degree of Bachelor of Arts in Human Development: with emphasis in either human development or family. Additionally, two minors are offered; one in general human development and one in early childhood (see description below).

### Degree Program Requirements

**Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.**

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

**HUMAN DEVELOPMENT EMPHASIS OR FAMILY EMPHASIS DEGREE PROGRAMS (120 HOURS)**

#### FYDA

**Freshman Year**

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<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H, G] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science [B, I, Q] (GER)</td>
<td>3 or 4</td>
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<table>
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<tr>
<th>Second Semester</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>Communication Proficiency [C, W] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>H D 201</td>
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<td>H D 204</td>
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#### Sophomore Year

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<th>First Semester</th>
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<tbody>
<tr>
<td>Biological [B] Sciences (GER)</td>
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<td>H D 203</td>
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<td>H D Elective</td>
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<td>Intercultural [I, G, K] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<tbody>
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<td>H D 202</td>
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<td>H D 310</td>
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<tr>
<td>Physical [P] Sciences (GER)</td>
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#### Junior Year

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#### Senior Year

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<tbody>
<tr>
<td>H D 330</td>
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<td>Minor Elective</td>
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<td>Tier III Course (GER)</td>
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<tbody>
<tr>
<td>H D 410 [M]</td>
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<tr>
<td>H D 446 or 498</td>
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<td>Electives</td>
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</table>

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. Students in the Human Development Emphasis should take H D 420 [M]; students in the Family Emphasis Program should take H D 320.
6. H D 446 requires a half-day each day, 5 days a week.
7. The internship course (H D 498) can be taken during the summer semester of the junior or senior year. H D 330 should be taken no more than one to two semesters before taking the internship.

**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 adviser to obtain the list of approved courses.

**FAMILY AND CONSUMER SCIENCES DEGREE PROGRAM (126 HOURS)**

#### Freshman Year

<table>
<thead>
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<th>First Semester</th>
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<td>FSHN 130 [B] (GER)</td>
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<td>H D 201</td>
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<td>Math Proficiency [N] (GER)</td>
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#### Second Semester

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<td>H D 202</td>
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<tr>
<td>H D 204</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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#### Sophomore Year

<table>
<thead>
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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>ComSt 102 [C] (GER)</td>
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<td>Engl 201 [W], 301 [W], 302 [W] (GER)</td>
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<tr>
<td>H D 203</td>
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<td>T &amp; L 300</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>FSHN 120/121</td>
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<td>H D 302</td>
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#### Junior Year

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<th>Hours</th>
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<td>H D 350</td>
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<td>H D 479</td>
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<tr>
<td>T &amp; L 303</td>
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<tr>
<td>T &amp; L 317</td>
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| Complete Writing Portfolio | |

#### Senior Year

<table>
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<tbody>
<tr>
<td>Ed Psych 402</td>
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<td>H D 406</td>
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<td>H D 409</td>
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<tr>
<td>H D 480</td>
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<td>Intercultural [L,G,K] (GER)</td>
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<table>
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<tbody>
<tr>
<td>H D 407</td>
<td>8</td>
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<tr>
<td>T &amp; L 415</td>
<td>8</td>
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</tbody>
</table>

1. Courses are only offered during this semester each year.
2. Chem 101 strongly recommended.
4. Econ 101 [S] or 102 [S] strongly recommended.
5. T & L 302 and 303 must be taken concurrently.
6. T & L 400 and EdPsy 402 strongly recommended concurrently.

**PRESCHOOL THROUGH THIRD GRADE (P-3) CERTIFICATION DEGREE PROGRAM (135 HOURS)**

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>
Engl 201, H D 341, 342, and Math 251 must be completed prior to application for admission to the Department of Human Development. To minor in Human Development, students may select a developmental or a family focus. The minor requires 18 hours, of which must be in 300-400-level courses. The minor in Human Development requires H D 101; H D 320 or 420; H D 201, 202, 203, or 408; H D 204, 301, 302, or 350; and 6 additional credit hours from any other 300-400-level H D courses.

Minor in Early Childhood Education

A minor in early childhood education requires completion of H D 101, 201, 204, 302, 341, 342, 449; plus one of: H D 403, 410, or 420. Completion of this set of courses also provides a supporting endorsement in early childhood education for students completing a major in elementary education.

Minor in Aging

The Department of Human Development administers the Program in Aging, a minor 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.

Description of Courses

Human Development

H D 101 [S] Human Development Across the Lifespan 3 Overview of lifespan development from a psychosocial ecological perspective; individuals, families, organizations, and communities and their interrelationships.

201 Human Development - Prenatal Through Age 8 3 In-depth examination of growth and development from the prenatal period through age 8 in context of family, community and society.

202 Human Development - Middle Childhood Through Adolescence 3 In-depth study of school-age child and adolescent; observation and volunteer experience; theories and their application.

203 Human Development - Adulthood Through the Older Years 3 In-depth study of individual development from young adulthood through later years within the social context of family and community.


205 [C] Communication in Human Relations 3 (2-2) Developing an understanding of human behavior and learning skills in communication and leadership.

300 Child Abuse and Neglect 3 Prereq 6 hours in Anhth, H D, Psych, or Soc; Engl 101. Overview of causes, identification, reporting, and treatment of children who are abused and/or neglected.

301 Families in Crisis 3 Prereq 6 hours in Anhth, H D, Psych, or Soc. Examination of the nature and course of family crisis, using a family systemic approach, including principles used in intervention strategies.

302 [M] Parent-Child Relationships 3 Prereq 6 hours in Anhth, H D, Psych, or Soc. 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 in Anhth, H D, Psych, or Soc. An examination and analysis of intimate relationships across the life span including friend, family, and partner relationships.

305 Gerontology 3 Prereq 6 hours H D or 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 in Anhth, H D, Psych, or Soc. Overview of research techniques in human development; methods of evaluating research products.

320 Resource Management and Problem Solving 3 Prereq 6 hours in Anhth, H D, Psych, or Soc. Styles of managing material, human and environmental resources with families; various approaches to problem solving with individuals and families.

330 Professional Preparation 2 Prereq 12 hours in H D. Human service career preparation through: career exploration; relating students’ skills and educational plans to professional plans; cover letters; resumes; interviewing.

334 [S] Principles of Community Development 3 Same as R S 334.

341 Learning and Guidance in Early Childhood 3 Prereq H D 101 or 201; 204. 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, 341. Planning and implementation of developmentally appropriate curriculum for use in programs serving young children.

345 Managing Behavior in Early Childhood Settings 3 Prereq H D 101 or 201; 204. 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 in H D or social science. 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 in Anhth, H D, Psych, or Soc. Death and dying throughout life and in different contexts; manner of death, grief, and legal and ethical considerations.

403 [T] Families in Poverty 3 Prereq H D 101, 204; or 6 hours in H D or social sciences; 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 in Anhth, H D, Psych, or Soc. 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 Directed Teaching, Agriculture and Home Economics V 4-10 Same as Ag Ed 407.

408 Advanced Adolescent Development 3 Prereq 6 hours in Anth, H D, Psych, or Soc. 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 in Anth, H D, Psych, or Soc. 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 6 hours in Anth, H D, Psych, or Soc. 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 hrs of H D, psych, or soc. 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 6 hours in Anth, H D, Psych, or Soc. In-depth examination of theories and their use in understanding individual development in context of family and community.

423 Fundamentals of Participatory Research 3 Same as R S 423.

428 Housing America's Families 3 Housing, furnishings, and equipment as they influence family well-being, and families' housing choices as affected by social, psychological, economic, technological, and political factors. Cooperative course taught by UI (FCS 428), open to WSU students.

430 Professional Skills for Working with Individuals and Families 3 Prereq 3 hours in H D; junior standing. Development of skills important for effective human service professionals: communication, groupdynamics, supervision, leadership, ethical behavior, cultural sensitivity, and others.

446 Practicum in Early Childhood Programs V 3 (0-9) to 6 (0-18) May be repeated for credit; cumulative maximum 12 hours. Prereq H D 341, 342. 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 341, 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 Organization, administration, and management of early childhood programs; finance, program development, service delivery, personnel concerns, resource development, and evaluation. Available ONLY as a Distance Learning Flexible Enrollment Course.


482 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 9 hours in H D; junior standing. Supervised participation in faculty research including data collection, analysis, literature review, preparation of findings. S, F grading.

487 Special Topics in Human Development V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours in Anth, H D, Psych, or Soc. Assessment and evaluation of families and children.

495 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 4 hours. By interview only. Opportunity to assist with instruction; experience in further study of topic, organization of material, grading, management of resources. S, F grading.

498 Field Placement V 4 (0-12) to 8 (0-24) May be repeated for credit; cumulative maximum 8 hours. By interview only. Prereq H D 330. Self-initiated, supervised work experience with appropriate private organizations, businesses, or government agencies; interaction with professionals in related fields. S, F grading.

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

506 Work and Family 3 Graduate-level counterpart of H D 406; additional requirements. Credit not granted for both H D 406 and 506.

510 Proseminar in Human Development 1 Introduction to human development profession, departmental faculty and their research, WSU resources, conducting research, writing thesis; preparation for field placement.

511 Theory and Substance of Human Development I 3 Prereq graduate standing. Human development theories; application to life span development, cultural variations, resources, problem solving, interaction of families and individuals with other systems.

512 Theory and Substance of Human Development II 3 Prereq H D 511. Continuation of 511; theory and application to concepts and issues in human development.

513 Research Methods in Human Development I 3 Prereq graduate standing. Introduction to process of research and methods in human development; techniques of research, data collection, and data analysis procedures. Cooperative course taught by WSU, open to UI students (FCS 521).

514 Research Methods in Human Development II 3 Prereq H D 513. Integration of formal decision making into the social science research process; procedures appropriate for experimental, quasi-experimental and field research. Cooperative course taught by WSU, open to UI students (FCS 522).

515 Seminar 2 Prereq H D 510, 512, 514, 598 or c/. Ap/plication of knowledge in professional settings, analysis and integration of internship experience with theoretical and substantive expertise.

520 Adolescence 3 Prereq graduate standing. In-depth examination of theories and research, developmental issues and prevention and intervention programs for school-aged child and adolescents.

523 Fundamentals of Participatory Research 3 Prereq graduate standing. Same as R S 523. Graduate-level counterpart of H D 423; additional requirements. Credit not granted for both H D 423 and 523.

535 Program Development in Child, Family, and Consumer Studies 3 Prereq graduate standing. Analysis and development of program delivery systems, curricula and evaluation models. Cooperative course taught by UI (FCS 554), open to WSU students.

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 Advanced Parent-Child Relationships 3 Prereq graduate standing. The developing family; patterns of child rearing. Cooperative course taught by UI (FCS 540), open to WSU students.

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.

570 Families and the Economy 3 Prereq graduate standing. Family/household as an earning and consuming unit; theoretical and policy approaches to income and household production and consumer behavior.

575 Family Resource Management 3 Prereq graduate standing. Management of economic and human resources with focus on family structure in all socioeconomic and age groups. Cooperative course taught by UI (FCS 560), open to WSU students.

580 Families, Community and Public Policy 3 Prereq H D 513, 514, or approved graduate research methods course. Analysis of family policy research; role of family policy research in public policy and knowledge building processes. Cooperative course taught by WSU, open to UI students (FCS 580).

586 Special Topics in Human Development V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Assessment and evaluation of families and children.

595 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 8 hours. Prereq senior standing. Supervised instructional practicum for departmental majors. 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.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.
Humanities Courses

The humanities curriculum consists of a series of interdisciplinary courses designed to introduce students to some of the basic concepts of civilization through the study of representative masterpieces of literature, music, art, and related fields. The courses numbered 101, 302, 303, and 304 provide a survey of western civilization from ancient times to the twentieth century. English majors may elect 300-400-level humanities courses within the concentration in World Literature/Humanities.

Using Humanities courses as part of General Studies-Humanities

Major

WSU-Pullman students who are interested in the interdisciplinary study of culture can use a number of the courses listed below as a minor concentration in a degree program in General Studies-Humanities. A recommended sequence would include at least three from Hum 101, 302, 303, 304, which provide students a survey of arts and thought from ancient times to the present. Any of the other humanities courses, including the study-abroad option, could be used as well. Students at branch campuses, who want a coherent minor concentration in humanities, should consult their advisers.

Description of Courses

Humanities

Hum

101 [H] Humanities in the Ancient World 3 Integrated humanities: literature, philosophy, history, and art of the ancient world.
103 [H] Mythology 3 The theory of mythology and use of myths in art, literature, and music; Graeco-Roman and one other.
198 [H] Humanities in the Ancient World: Honors 3 Integrated humanities: literature, philosophy, history, and art of the ancient world. Open only to students in the Honors College.

221 Topics in Humanities—Study Abroad 3
222 Topics in Humanities—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.
224 Topics in Humanities—Study Abroad 3
302 [H,M] Humanities in the Middle Ages and Renaissance 3 Integrated humanities; exploring great works and themes of the European Middle Ages and Renaissance, including art, architecture, music, philosophy, and literature.
303 [H,M] Reason, Romanticism, and Revolution 3 Integrated humanities; literature, philosophy, music, art, 1700 to World War I; revolutionary changes which led to the 20th century.
304 [H] Humanities in the Modern World 3 Literature, philosophy, art, architecture, film, music since World War I; major works reflecting influential movements and concerns of the modern world.

322 Topics in Humanities Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.
324 Topics in Humanities Study Abroad 3
335 [H] The Bible as Literature 3 Same as Engl 335.

338 Topics in Humanities 3 May be repeated for credit; cumulative maximum 6 hours. Interdisciplinary, international topics in the humanities (art, architecture, music, literature, philosophy, film).

340 [H] American Foundings 3 Examination of the differing assumptions about the nation in such founding texts as The Federalist Papers and Emerson’s Essays.

410 [T,H] Love in the Arts 3 Prereq completion of one Tier I and three Tier II courses; one college-level literature or art history course. Concepts of love around the world and in history through literature, art, music, dance, and theater.

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

Interdisciplinary University Courses

Description of Courses

University

Univ

100/101 College Majors and Career Choice 1 Career development and the decision-making process; exploration of academic majors and careers.
300 College Major and Career Planning 1 Application of career development principles to development of professional opportunities; includes comprehensive career self-assessment and analysis of workplace trends.
490 McNair Preparation for Graduate School 1 May be repeated for credit; cumulative maximum 2 hours. Prereq junior standing. Preparation for McNair Scholars and others for graduate study. S, F grading. No credit earned toward degree; not qualified for financial aid.
590 Preparation for College Teaching 2 Prereq graduate student/TA appointment. Cross-disciplinary instructional development for graduate teaching assistants; course development teaching techniques, university policies and procedures. S, F grading.
591 Interdisciplinary Studies 1 May be repeated for credit. Contemporary issues in interdisciplinary education and research. Open to all interested students.
592 Interdisciplinary Ethical Issues in Graduate Study 3 Prereq graduate standing. Research and discussion of ethical issues arising in graduate study across disciplinary lines.
597 Preparing the Future Professorate 2 Prereq doctoral student status. Course prepares students with understanding and contextual knowledge of the professorate and issues facing higher education.
598 Interdisciplinary Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Prereq Univ 591. Seminar on theory and practice of advanced interdisciplinary doctoral study.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. For Interdisciplinary PhD only. S, F grading.

Kinesiology and Exercise Science

Professor and Program Chair, D. Warner; Professors, S. Blank, E. C. Johnson.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Bachelor of Science in Kinesiology, Exercise Science Major

The Exercise Science program is designed to train students for employment in clinical medicine and/or the physical fitness industry. To accommodate individual student goals, the Exercise Science program offers two tracks: 1) Clinical/Basic Physiology, and 2) Fitness/Applied Physiology. WSU graduates from either the Exercise Science Clinical/Basic Physiology track or the Fitness/Applied Physiology track are prepared to work in a clinical setting or the physical fitness industry as exercise specialists in cardiopulmonary rehabilitation programs, corporate fitness programs, fitness centers, or private health clubs. In addition, the Clinical/Basic track prepares students to enter graduate programs in exercise science, physiology, or in allied health career fields such as physical therapy, physician’s assistant, nursing, which require significant coursework in the sciences.

FIRST AND SECOND YEAR REQUIREMENTS

The first two years are common to both exercise science degree programs:

Freshman Year

First Semester

Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
MvStx 262 4
PEACT 112 1
Psych 105 [S] (GER) 3

Second Semester

Chem 102 [P] or 106 [P] (GER) 4
ComSt 102 [C] (GER) 3
ExSci 364 3
GenEd 110 [A] (GER) 3
MvStx 199 3

Sophomore Year

First Semester

Biol 102 [B] or 103 [B] (GER) 4
ExSci 370 1

Second Semester

Arts & Humanities [H,G] (GER) 3
Ath T 311 3
### EXERCISE SCIENCE, CLINICAL/BASIC PHYSIOLOGY DEGREE PROGRAM (131 HOURS)

#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</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>ExSci 370</td>
<td>1</td>
</tr>
<tr>
<td>ExSci 463</td>
<td>4</td>
</tr>
<tr>
<td>MvtSt 484</td>
<td>3</td>
</tr>
<tr>
<td>Phys 101 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 402 [W (GER)]</td>
<td>3</td>
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<tr>
<td>ExSci 470</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 233</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Zool 353</td>
<td>4</td>
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<tr>
<th>Senior Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>ExSci 370</td>
<td>1</td>
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<tr>
<td>ExSci 480</td>
<td>3</td>
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<tr>
<td>H Ed 363</td>
<td>2</td>
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<tr>
<td>MvtSt 362</td>
<td>3</td>
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<tr>
<td>MvtSt 461 [M]</td>
<td>3</td>
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<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
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<tr>
<th>Summer of Fourth Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ExSci 491</td>
<td>12</td>
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</table>

### Exercise Science

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<tr>
<th>Exercise</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ExSci 264</td>
<td>3-3 Physiological, mechanical, and health-related basis of fitness practices.</td>
</tr>
<tr>
<td>370 Physical Assessment</td>
<td>1 (0-3) May be repeated for credit; cumulative maximum 4 hours. Prereq ExSci 364. Application of common physiological/physical measurements in a variety of subjects. S, F grading.</td>
</tr>
<tr>
<td>380 Introduction to Exercise Physiology</td>
<td>3 Prereq Zool 251. Introduction to exercise physiology as it relates to sport, physical training, and performance.</td>
</tr>
<tr>
<td>463 Physiology of Exercise</td>
<td>3 (3-3) Prereq ExSci 380, MvtSt 262 or Zool 315; Zool 251. Advanced undergraduate exercise physiology with emphasis on mechanisms regulating physiological responses to exercise across the life span.</td>
</tr>
<tr>
<td>480 Introduction to Cardiac Rehabilitation</td>
<td>3 Prereq ExSci 463, 470, 476. Principles and applications of exercise testing and prescription to cardiac rehabilitation situations and populations.</td>
</tr>
<tr>
<td>491 Internship</td>
<td>12 Prereq all required courses in ExSci major. Supervised practicum in agency, clinic, or business. S, F grading.</td>
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### Kinesiology

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<tr>
<th>Kin</th>
<th>Hours</th>
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<tbody>
<tr>
<td>501 Trends and Issues in Kinesiology</td>
<td>May be repeated for credit; cumulative maximum 6 hours. Exploration of trends and issues in kinesiology.</td>
</tr>
<tr>
<td>551 Assessment and Evaluation of Motor Dysfunction</td>
<td>3 Principles of assessment/evaluation of motor dysfunction; tools and techniques; administration, interpretation, and translation into program plans. Cooperative course taught by WSU, open to UI students (PE 551).</td>
</tr>
<tr>
<td>552 Neuromotor Impairment and Motor Behavior</td>
<td>3 Neurophysiological components of normal and abnormal motor behavior as a result of neurological impairments/dysfunction in children through the aged. Cooperative course taught by WSU, open to UI students (PE 552).</td>
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</table>

### Program Requirements

- Complete Writing Portfolio
- A minimum of 32 credits in the College of Science and Engineering, including at least 16 credits in the major.
- A minimum of 12 credits in the College of Education and Social Work, including at least 6 credits in the major.
- A minimum of 4 credits in the College of Business and Public Administration, including at least 2 credits in the major.
- A minimum of 4 credits in the College of Arts and Humanities, including at least 2 credits in the major.

### Program Options

- The clinical/basic physiology degree program, take Biol 102.
- The fitness/applied degree program, take Biol 104.

### Program Plans

- **Junior Year:** Prereq MvtSt 262 or Zool 315; Zool 251. Advanced undergraduate exercise physiology with emphasis on mechanisms regulating physiological responses to exercise across the life span. Recommended Course (optional) 3 |
- **Senior Year:** Prereq all required courses in ExSci major. Supervised practicum in agency, clinic, or business. S, F grading. |
- **Summer of Fourth Year:** ExSci 491 12 |

### Useful Resources

- **553 Programming in Adapted Physical Activity:** 3 Intensive experiences in planning and implementing physical activity programs to include individuals with disabilities. Cooperative course taught by WSU, open to UI students (PE 553). |
- **554 Sport and Individuals with Disabilities:** 3 Issues and opportunities in sport for individuals with disabilities. Cooperative course taught by WSU, open to UI students (PE 554). |
- **560 Epidemiology, Exercise and Health:** Prereq graduate standing. Epidemiological approach to the study of health benefits/risks of exercise in youth, adults, women and ethnic groups. |
- **562 Pediatric Exercise Physiology:** 3 Rec MvtSt 463. Influences of physical development on physiological responses of children and adolescents to exercise and training. |
- **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. |
- **564 Mechanical Analysis of Motor Activity:** Prereq MvtSt 362. Fundamental laws of mechanics applied to motor activities. Cooperative course taught by WSU, open to UI students (PE 564). |
- **565 Advanced Physiology of Exercise:** 3 Rec MvtSt 463. Bioenergetic, striated muscle metabolic, and neuroendocrine responses to exercise and training. |
- **566 Biomechanics:** 3 Rec MvtSt 564. Biological and mechanical aspects of human movement. Cooperative course taught by WSU, open to UI students (PE 566). |
- **567 Advanced Physiology of Exercise II:** 3 Rec MvtSt 463. Pulmonary, circulatory, thermoregulatory, fluid balance and physiological system integration responses to exercise and training. |
- **568 Fitness Assessment and Prescription:** 3 Prereq MvtSt 463. Development of skills in testing analysis, and prescription for health-related fitness. Cooperative course taught by UI (PE 593), open to WSU students. |
- **573 Philosophical Perspectives of Sport and Physical Activity:** 3 Ontological, ethical, aesthetic views of physical activity. |
- **574 Social and Cultural Issues of Physical Activity and Sport:** 3 Exploration, analysis and understanding of human movement in the context of the individual, cultural, and physical environments. |
- **578 Sports in Society:** The social significance of sports; sociology of sport research. |
- **579 Psychology and Physical Activity:** Current research findings in psychology pertinent to the teaching and coaching of physical activities. |
- **581 Concepts Analysis of Motor Skill Performance:** 3 (2-3) Application of motor learning concepts to the observation and analysis of motor skill performance. |
- **582 Observation and Analysis of Teaching Physical Activity:** 3 (2-3) Systematic approach to observation/analysis of teaching physical activity; evaluation of instructional process. Cooperative course taught jointly by WSU and UI (PE 522). |
- **583 Teaching Strategies in Physical Activity:** 3 Research materials and methods related to effective teaching in physical education.
Materials science includes the principles and practice of designing, synthesizing, characterizing, preparing, and fabricating useful materials. The Materials Science Program accepts qualified bachelor's and master's graduates in the sciences and engineering who now wish to pursue graduate research for a PhD in the area where the disciplines overlap. A broad range of topics is included under this program and it is usual for students to select one of the following tracks within materials science.

The CHEMICAL PHYSICS track emphasizes condensed matter and atomic and molecular physics and chemistry, including application of spectroscopy to synthesis, irradiation effects at surfaces, thin film phenomena, and layered and atomic structures.

The MATERIALS ENGINEERING track emphasizes the methodology and principles relating the structure of metals, polymers, and ceramics to their mechanical, physical, and chemical properties and their utilization.

The MATERIALS PHYSICS AND CHEMISTRY track emphasizes applications of condensed matter, atomic and molecular physics and chemistry to improve understanding of the processing and characterization of materials. Students who plan a career in materials science are expected to obtain a strong foundation in mathematics, physics, and chemistry.

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 (16-18 hours) required of all students: thermodynamics, statistical mechanics, solid state physics, phase transformations, microscopy and spectroscopy, and a survey of current topics in materials science. All students must attend the materials science seminar program. Additional required courses (23 hours or more) vary with the chosen track and the research programs of individual students. In the chemical physics track students are required to study quantum mechanics, atomic and molecular physics, atomic and molecular phenomena, and group theory which should be supplemented with a selection from advanced chemistry, physics and materials engineering courses. In the materials engineering track the required courses are mechanical properties and applied mathematics to be supplemented with selected materials science engineering and related courses. In the materials physics and chemistry track students must take quantum mechanics which should be supplemented by advanced courses in chemistry, engineering, and physics.

An original research dissertation (Mat S 800) is required. 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.

Materials Science

Mat S

503 Current Topics in Materials Science V 1-3 May be repeated for credit. Recent advances and current developments in the field of materials science.

513 Crystal Plasticity 3 Same as MSE 513.

516 Phase Transformations 3 Same as MSE 516.

538 Special Topics V 1-3 May be repeated for credit. Selected topics of current interest in advanced materials science.

571 Microscopic Analysis of Solid Surfaces 3 Modern spectroscopic methods for microscopic analysis of solid surfaces; emphasizes electron, ion, laser, and x-ray techniques.

590 Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Same as MSE 520.

600 Special Projects or Independent Study V 2-16 May be repeated for credit; cumulative maximum 3 hours. Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Mathematics


The Department of Pure and Applied Mathematics provides undergraduate instruction and training in all major fields of mathematics. The numerous service courses taught by the department reflect the growing importance of mathematics in an increasing number of other disciplines.

Undergraduate training for mathematics majors is provided at WSU in the following seven options: Actuarial Science, Applied Statistics, Computational Mathematics, Mathematical Modeling, Operations Research, Secondary Mathematics Teaching, and Theoretical Mathematics. The first six options prepare students for careers related to the respective fields, while the option in Theoretical Mathematics is the traditional curriculum for Mathematics majors. Talented undergraduate majors in mathematics are given individual and small group instruction outside of class, sometimes resulting in research publications.

The mathematics major also prepares students for graduate study in such fields as business, economics, management science and computer science, as well as mathematics and statistics.

Graduate study and specialization are offered by the department in both classical and modern areas. The Doctor of Arts and the PhD with Teaching Emphasis programs are specially designed for future college teachers, while the several options in applied mathematics, which include an internship experience, provide graduate preparation for mathematical careers in business and industry.

All students who enroll in 100-200-level mathematics courses (except Math 100) must show that they have satisfied the prerequisite(s). One way to satisfy a prerequisite is to obtain an appropriate score on the Mathematics Placement Test (MPT). All new WSU students are urged to take the MPT. The MPT is not needed for students who have already completed the prerequisite college mathematics course or obtained the appropriate score on the quantitative SAT test, or for transfer students who have already satisfied General Education Requirements (GERs) and do not
**Degree Program Requirements**

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

There is a core of requirements common to all of the mathematical sciences options. Students are required to take the core courses and to complete one of the degree programs listed below.

A major in mathematics requires Math 171, 172, 220, 273, 300, 315; 360 or 443; 401, 402, 420, 421; Phys 201; Cpt S 150 or two of Cpt S 153, 203, 251; Engl 402 (students whose native language is not English may substitute Engl 403 for 402).

**FIRST SEMESTER REQUIREMENTS**

The first semester requirements are common to all mathematics degree programs:

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td><strong>Hours</strong></td>
</tr>
<tr>
<td>Biological Science [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Degree Program Course, if necessary¹</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ Students in Actuarial Science take Econ 101 [S] (GER).

<table>
<thead>
<tr>
<th>ACTUARIAL DEGREE PROGRAM (127 HOURS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Year</strong></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
</tr>
<tr>
<td>Cpt S 150 or two of Cpt S 153, 203, or 251</td>
</tr>
<tr>
<td>Econ 102 [S] (GER)</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Math 172</td>
</tr>
</tbody>
</table>

| **Sophomore Year**                   |         |
| **First Semester**                   | **Hours** |
| Arts & Humanities [H,G] (GER)        | 3       |
| Math 220                             | 2       |
| Math 273                             | 2       |
| Phys 201 [P] (GER)                   | 4       |
| Elective                             | 3       |

| **Second Semester**                  | **Hours** |
| Biological [B] or Physical [P] Sciences (GER) | 4       |
| Intercultural [I,G,K] (GER)           | 3       |
| Math 300                             | 3       |
| Math 315                             | 3       |
| Math 360                             | 3       |

| **Junior Year**                      |         |
| **First Semester**                   | **Hours** |
| Engl 402 [W] (GER)                   | 3       |
| Math 364                             | 3       |
| Math 420                             | 3       |
| Math 443                             | 3       |
| Tier III Course (GER)                | 3       |
| Complete Writing Portfolio           |         |

| Second Semester                      | **Hours** |
| Arts & Humanities [H,G] or Intercultural [I,G,K], or Social Sciences [S,K] (GER) | 3       |
| Math 402 [S]                         | 3       |
| Math 448                             | 3       |
| Math 464                             | 3       |
| Statistics Elective¹                 | 3       |

¹ Strongly recommended.

<table>
<thead>
<tr>
<th>COMPUTATIONAL DEGREE PROGRAM (122 HOURS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Year</strong></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
</tr>
<tr>
<td>Cpt S 150</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Math 172</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
</tr>
</tbody>
</table>

| **Sophomore Year**                      |         |
| **First Semester**                      | **Hours** |
| Arts & Humanities [H,G] (GER)           | 3       |
| Math 220                               | 2       |
| Math 273                               | 2       |
| Phys 201 [P] (GER)                     | 4       |
| Elective                               | 3       |

| **Second Semester**                     | **Hours** |
| Biological [B] or Physical [P] Sciences (GER) | 4       |
| Intercultural [I,G,K] (GER)              | 3       |
| Math 300                               | 3       |
| Math 315                               | 3       |
| Math 364                               | 3       |

| **Junior Year**                         |         |
| **First Semester**                      | **Hours** |
| Arts & Humanities [H,G] (GER)           | 3       |
| Math 220                               | 2       |
| Math 273                               | 2       |
| Phys 201 [P] (GER)                     | 4       |
| Elective                               | 3       |
| Complete Writing Portfolio             |         |

| **Second Semester**                     | **Hours** |
| Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) | 3       |
| Math 360 or 443                         | 3       |
| Math 398                               | 1       |
| Math 421                               | 3       |
| Math 444                               | 3       |
| Electives                              | 3       |
Senior Year
First Semester
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Math 401 [M] 3
Math 416, 440, or 464 3
Electives 6

Second Semester
Math 402 [M] 3
Math 418 or 440 3
Tier III Course (GER) 3
Electives 6

Mathematical Modeling Degree Programs (122 Hours)
Freshman Year
Second Semester
Cpt S 150 or two of Cpt S 153, 203, or 251 4
GenEd 111 [A] (GER) 3
Math 172 4
Social Sciences [S,K] (GER) 3

Sophomore Year
First Semester
Arts & Humanities [H,G] (GER) 3
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4
Elective 3

Second Semester
Biological [B] or Physical [P] Sciences (GER) 4
Intercultural [I,G,K] (GER) 3
Math 300 3
Math 315 3
Math 364 3
Complete Writing Portfolio

Junior Year
First Semester
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Engl 402 [W] (GER) 3
Math 420 3

Second Semester
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Math 398 1
Math 421 [M] 3
Math 444 3
Math 464 3
Electives 3

Senior Year
First Semester
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Math 401 [M] 3
Math 416 3
Math 453 3
Math 466 3

Second Semester
Math 402 [M] 3
Math 418 or 448 3
Math 472 3
Math/Stat Elective 3
Tier III Course (GER) 3

Operations Research Degree Programs (122 Hours)
Freshman Year
Second Semester
ComSt 102 [C] (GER) 3
Cpt S 150 or two of Cpt S 153, 203, or 251 4
GenEd 111 [A] (GER) 3
Math 172 4
Math 220 2

Sophomore Year
First Semester
Arts & Humanities [H,G] (GER) 3
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4
Elective 3

Second Semester
Intercultural [I,G,K] (GER) 3
Math 300 3
Math 315 3
Math 360 3
Math 398 1
T & L 301 3

Junior Year
First Semester
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Engl 303 [M] or 420 3
T & L 317/318 3
T & L 328 2
T & L 450/451 2
Elective 3

Senior Year
First Semester
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Ed Psych 402 2
Math 401 [M] 3
Math Elective 3
T & L 404 3

Second Semester
Math 320 [M] or 421 [M] 3
Math Elective 3
Tier III Course (GER) 3
Electives 6

Directed Teaching
T & L 415 16

Theoretical Mathematics Degree Program (122 Hours)
Freshman Year
Second Semester
ComSt 102 [C] (GER) 3
Cpt S 150 or two of Cpt S 153, 203, or 251 4
GenEd 111 [A] (GER) 3
Math 172 4
Social Sciences [S,K] (GER) 3

Sophomore Year
First Semester
Arts & Humanities [H,G] (GER) 3
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4
Elective 3
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 and at the Student Advising and Learning Center (SALC), Lighty 260.

2. Applications are evaluated, and certification decided, by a faculty committee.

3. Applicants must have an overall grade point average 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 grade point average in the mathematics core will be certified automatically. Those with less than a 2.0 g.p.a. in the mathematics core will 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 re-apply after completing at least 12 more semester hours, whereupon decisions are based on grades in mathematics, science, and computer science courses; cumulative grade point average and grade patterns; and a personal interview.

8. Certified students whose cumulative grade point average or grade point average 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.

10. Women and minorities are encouraged to apply. Special consideration will be given to affirmative action candidates.

Mathematics Minor

A mathematics minor requires 18 hours, with at least 9 hours of 300-400-level credits (excluding Math 330, 351, 431, 497). The g.p.a. requirements for the major (see graduation requirements) also apply to the minor in mathematics.

Courses required for either the major or minor may not be taken pass, fail.

Graduate Mathematics Minor

Requirements: A minimum of 12 hours of graded graduate-level mathematics courses, usually numbered between 501 and 573, as approved by the student's committee; at least one member of the student's committee must be from the Mathematics Department; a portion of the student's preliminary examination, determined by the committee, must cover the mathematics portion of the student's program; and the mathematics courses used to satisfy the requirements for a mathematics minor must be included in the student's program of study which must be signed by the Chair of the Mathematics Department and filed through and administered by the Graduate School.

Preparation for Graduate Study

As preparation for work toward an advanced degree in mathematics, a student should have completed the equivalent of the above 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.

Mathematics

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 toward degree; not qualified for financial aid.

103 Algebra Methods and Introduction to Functions 3 Prereq Math 100, or satisfactory math placement score. Fundamental algebraic operations and concepts, linear systems and inequalities, polynomial and rational functions, introduction to exponential and logarithmic functions.

107 Elementary Functions 4 Prereq Math 101 or 103 or satisfactory math placement score. Graphs, properties, and applications of polynomial, rational, exponential, logarithmic, and trigonometric functions.

140 [N] Mathematics for Life Scientists 4 Prereq Math 107, or satisfactory math placement score. Differential and integral calculus with emphasis on life science applications. Credit not normally granted for more than one of Math 140, 171, 202, 206.

171 [N] Calculus 1 4 (3-3) Prereq Math 107, or satisfactory math placement score. Differential and integral calculus of one variable with associated analytic geometry. Credit not normally granted for more than one of Math 140, 171, 202, 206.

172 Calculus II 4 (3-3) Prereq Math 171. Techniques and applications of one-variable calculus; estimations; series, derivative of a vector function.

182 Honors Calculus II 4 (3-3) Prereq Math 171 and permission of instructor. Single-variable calculus, series, with emphasis on conceptual development and problem solving.

201 Introduction to Finite Mathematics for Business and Economics 3 Prereq Math 101 or 103 or satisfactory math placement score. Basic notions of logic, linear algebra, matrices and analytic geometry; applications to linear programming. Credit not normally granted for both Math 201 and 220.

202 [N] Introduction to Mathematical Analysis for Business and Economics 3 Prereq Math 107, 201, or satisfactory math placement score. Differential and integral calculus of the polynomial, exponential, and logarithmic functions. Credit not normally granted for more than one of Math 140, 171, 202, 206.

205 [N] Statistical Thinking 3 Prereq Math 101 or 103 or satisfactory math placement score. Scientific explanation; correlations and causality; presenting statistical evidence; graphical and numerical methods; chance and gambling; the bell-shaped distribution.

206 [N] Mathematical Analysis for Architects 3 Prereq Math 107, or satisfactory math placement score. Calculus of elementary functions; trigonometry; applications to architecture. Credit not normally granted for more than one of Math 140, 171, 201, 206.

210 [N] Introduction to Mathematics 3 Prereq Math 101 or 103 or satisfactory math placement score. Nature and scope of modern mathematics; relationships to other disciplines.

212 [N] Introduction to Statistical Methods 4 (3-3) Same as Stat 212.

216 Discrete Structures 3 Prereq Math 107 and a programming course. Discrete mathematics, trees, graphs, elementary logic, and combinatorics with applications to computer science.

220 Introductory Linear Algebra 2 Prereq Math 171 or c//. Elementary linear algebra with geometric applications. Credit not normally granted for both Math 201 and 220.

251 Mathematics for Elementary School Teachers I 3 Prereq satisfactory math placement score or passing 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 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; 220 or c//. Calculus of functions of several variables.
308 Honors Calculus III 3 Prereq Math 182 or by permission. Multivariable calculus with emphasis on conceptual development and problem solving.


302 Theory of Numbers 3 Prereq Math 172, 220. Divisibility properties of integers; congruences; Diophantine equations; quadratic residues.


315 Differential Equations 3 Prereq Math 220, 273. Linear differential equations and systems; series, numerical and qualitative approaches; applications.

320 [M] Elementary Modern Algebra 3 Prereq Math 220. Algebra as a deductive system; number systems; groups, rings, and fields.

325 Elementary Combinatorics 3 Prereq Math 220. Introduction to combinatorial theory: counting methods, binomial coefficients and identities, generating functions, occurrence relations, inclusion-exclusion methods.


351 Mathematics for Elementary School Teachers III 3 Prereq Math 252. Geometric transformations, coordinate methods in geometry; applications of school mathematics, mathematics software.


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.

375 Vector Analysis 3 Prereq Math 315. Line integrals, gradient, curl, divergence; Stokes' theorem, potential functions.

380 Mathematicians at Work 1 Introduction to various options in mathematics and the oral, written and leadership skills required for success in the field.

389 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 315. Properties of sets and sequences of real numbers; limits, continuity, differentiation and integration of functions; metric spaces.

402 [M] Introduction to Analysis II 3 Prereq Math 401. Sequences of functions, power series, multivariable calculus, inverse and implicit function theorems, Lagrange multipliers, change of variables integrations.

408 Mathematics for Economists 3 Prereq Math 201, 202. Mathematical topics applicable to modern economic analysis and research.

409 Elements of Mathematical Economics 3 Same as Econ 410.

410 Topics in Probability and Statistics 3 Prereq Math 315. Linear systems; qualitative theory (existence, uniqueness, stability, periodicity); boundary value problems; applications.

416 Simulation Methods 3 Prereq Cpt S 150 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.

418 Mathematical and Scientific Visualization 3 Prereq Math 172, 220, a programming language. Three-dimensional computer imaging of scientific, engineering, and mathematical phenomena using modern techniques for curve and surface display in computer-aided design. Credit not granted for both Math 418 and 518.

420 Linear Algebra 3 Prereq Math 220. Advanced topics in linear algebra including similarity transformations, canonical forms, bilinear forms. Credit not granted for both Math 420 and 520.


423 Statistical Methods for Engineers and Scientists 3 Prereq Math 220, 360 or other statistics course. Hypothesis testing; linear, multilinear, and nonlinear regression; analysis of variance for designed experiments; quality control; statistical computing. Credit not normally granted for both Math 423 and 430.

425 Conceptual Aspects of Mathematics 3 Same as E&I 425.

430 Statistical Methods in Engineering 3 Prereq Math 172, 220. Random variables; central limit theorem; Markov chains. Cooperative course taught jointly by WSU and UI (Math 418).

431 Topics in Science and Mathematics Teaching 1 or 2 May be repeated for credit. Prereq Biol 430, or c//; Math 172, 251. For preselected teachers. New curricula and pedagogical techniques for middle school/high school instruction in science and mathematics. Credit not granted for both Math 431 and 531.

432 Foundations of Secondary School Mathematics 3 Prereq Math 315. Prereq teaching experience. For preselected teachers. Pre-algebra and algebra from a mature point of view; properties of systems; open sentences; equations; functions and graphs. Credit not granted for both Math 432 and 532.

434 Approaches to Mathematics Teaching 2 Prereq teaching experience. For preselected teachers. Problem solving and the use of manipulative devices in the teaching of K-8 mathematics. Credit not granted for both Math 434 and 534.

435 Astronomy and Astrophysics 3 May be repeated for credit; cumulative maximum 6 hours. Same as Astr 435.

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. 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).

448 Numerical Analysis 3 Prereq FORTRAN, C, or other programming language; Math 315. Fundamentals of numerical computation; finding zeros of functions, approximation and interpolation; numerical integration (quadrature); numerical solution of ordinary differential equations. Credit not granted for both Math 448 and 548.

453 Graph Theory 3 Prereq Math 220. Graphs and their applications, directed graphs, trees, networks, Eulerian and Hamiltonian paths, matrix representations, construction of algorithms. Credit not granted for both Math 453 and 553.

456 Introduction to Statistical Theory 3 Prereq Math 430 or 443. Sampling distributions; hypothesis testing and estimation; maximum likelihood; likelihood ratio tests; theory of least squares; nonparametrics. Cooperative course taught jointly by WSU and UI (Math 452). Credit not granted for both Math 456 and 556.

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 salesmen. Credit not granted for both Math 466 and 566.

471 Topics in Analysis 3 May be repeated for credit.

479 Instructional Practicum 1 or 2 May be repeated for credit; cumulative maximum 2 hours. By interview only. S, F grading.

498 Career Experience Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Industrial or governmental career experience in a mathematics or mathematics-related area, supervised by qualified profession. 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. Lebesgue measure, Lebesgue integration, differentiation, L spaces, general measure and integration, Radon-Nikodym Theorem, outer measure and product measures. Cooperative course taught jointly by WSU and UI (Math 572).

507 Advanced Theory of Numbers 3 May be repeated for credit; cumulative maximum 6 hours. Analytic and algebraic number theory. Cooperative course taught by WSU, open to UI students (Math 507).

508 Topics in Applied Analysis 3 Prereq Math 502. Advanced treatment of applications using techniques from fundamental analysis, convexity, analytic function theory; asymptotics, differential equations. Cooperative course taught by WSU, open to UI students (Math 508).

509 Foundations of Mathematics 3 The basis of mathematics in logic and set theory; continuum hypothesis; Godel’s theorems, recent developments. Cooperative course taught by WSU, open to UI students (Math 509).

510 Topics in Probability and Statistics 3 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. Computer techniques for statistical methods; comparison of capabilities of major statistical packages; analysis techniques, graphics, terminal use, data structures, numerical algorithms.

516 Simulation Methods 3 Graduate-level counterpart of Math 418; additional requirements. Credit not granted for both Math 418 and 518.

520 Linear Algebra 3 Prereq graduate standing. Graduate-level counterpart of Math 420; additional requirements. Credit not granted for both Math 420 and 520.

521 Algebraic Structures 3 Prereq graduate standing. Graduate-level counterpart of Math 421; additional requirements. Credit not granted for both Math 421 and 521.

523 Statistical Methods for Engineers and Scientists 3 Prereq graduate standing. Graduate-level counterpart of Math 423; additional requirements. Credit not granted for both Math 423 and 523.

525 General Topology 3 Prereq Math 402. Sets, metric spaces, topological spaces; continuous mappings, compactness, connectedness, local properties, function spaces, and fundamental groups. Cooperative course taught jointly by WSU and UI (Math 521).

526 Advanced Topology 3 Prereq Math 421, 525. General topology; basic ideas of algebraic topology. Cooperative course taught jointly by WSU and UI (Math 512).

527 Algebraic Topology 3 Prereq Math 526. Basic homotopy theory and applications. Cooperative course taught by UI (Math 523), open to WSU students.

528 Algebraic Topology 3 Prereq Math 527. Continuation of Math 527. Cooperative course taught by UI (Math 524), open to WSU students.

531 Topics in Science and Mathematics Teaching 1 or 2 May be repeated for credit. Graduate-level counterpart of Math 431; additional requirements. Credit not granted for both Math 431 and 531.

532 Foundations of Secondary School Mathematics 2 Prereq graduate standing. Graduate-level counterpart of Math 432; additional requirements. Credit not granted for both Math 432 and 532.

534 Approaches to Mathematics Teaching 2 Prereq graduate standing. Graduate-level counterpart of Math 434; additional requirements. Credit not granted for both Math 434 and 534.

536 Statistical Computing 3 (2-3) Same as Stat 536.

538 Topics in Modern Astrophysics 3 May be repeated for credit; cumulative maximum 9 hours. Same as Astr 538.

539 Applications of School Mathematics 3 Prereq graduate standing. Graduate-level counterpart of Math 439; additional requirements. Credit not granted for both Math 439 and 539.

540 Applied Mathematics I 3 Prereq graduate standing. Graduate-level counterpart of Math 440; additional requirements. Credit not granted for both Math 440 and 540.

541 Applied Mathematics II 3 Prereq graduate standing. Graduate-level counterpart of Math 441; additional requirements. Credit not granted for both Math 441 and 541.

543 Approximation Theory 3 Univariate polynomials, and rational approximation techniques; approximation using splines and wavelets; selected topics in multivariate approximation; algorithms for approximation. Cooperative course taught by WSU, open to UI students (Math 543).

544 Advanced Matrix Computations 3 Prereq Math 448. Advanced topics in the solution of linear systems and eigenvalue problems, including parallel matrix computations. Cooperative course taught by WSU, open to UI students (Math 544).

545 Numerical Analysis of Evolution Equations 3 Prereq Math 448. Discretization and numerical solution of partial differential equations of evolution; stability; consistency, and convergence; shocks; conservation of forms. Cooperative course taught by WSU, open to UI students (Math 545).

546 Numerical Analysis of Elliptic PDEs 3 Prereq Math 448. Methods of discretizing elliptic partial differential equations and solving the resulting systems of equations; error analysis. Cooperative course taught by WSU, open to UI students (Math 547).

548 Numerical Analysis 3 Prereq graduate standing. Graduate-level counterpart of Math 449; additional requirements. Credit not granted for both Math 448 and 548.

550 Advanced Topics in Geometry 3 Projective, affine, and non-Euclidean geometries and their relation to abstract algebra and differential geometry. Cooperative course taught by WSU, open to UI students (Math 554).

551 Ring Theory 3 Ideals, quotient rings, modules, radicals, semi-simple Artinian rings, Noetherian rings. Cooperative course taught by UI (Math 551), open to WSU students.

552 Galois Theory 3 Field extensions, automorphisms, normality, splitting fields, radical extension, finite fields, separability. Cooperative course taught by UI (Math 552), open to WSU students.

553 Graph Theory 3 Prereq graduate standing. Graduate-level counterpart of Math 453; additional requirements. Credit not granted for both Math 453 and 553.

554 Linear Algebra 3 Prereq Math 420. Vector spaces, direct sums, quotient spaces, similarity, Jordan forms, inner products, eigenvalues, eigenvectors, spectral theory. Cooperative course taught by UI (Math 550), open to WSU students.

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 graduate standing. 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).

562 Secondary School Mathematics 3 Same as T & L 562. Cooperative course taught jointly by WSU and UI (Math 504).

563 Mathematical Genetics 3 Prereq MBioS 301; Stat 412, 430, or 443. Statistical approaches to Mendelian and population genetics; theories and estimation of genetic parameters; testing genetic hypotheses.

564 Topics in Optimization 3 May be repeated for credit. Prereq advanced multivariable calculus and a programming language; Rec Math 464, 544. Advanced topics in the theory and computing methodology in optimization with emphasis on real-life algorithmic implementations. Cooperative course taught by WSU, open to UI students (Math 564).

566 Optimization in Networks 3 Prereq graduate standing. Graduate-level counterpart of Math 466; additional requirements. Credit not granted for both Math 466 and 566.
School of Mechanical and Materials Engineering


MECHANICAL ENGINEERING

The role of the mechanical engineering program is to provide a broad education in mechanical engineering that prepares our students for being successful in professional practice and careers in research and development. The mechanical engineering program 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 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. In the fourth year each student selects two electives to build upon material from the foundation courses. The undergraduate program is completed with courses in integrated design of mechanical and thermal systems as well as a capstone laboratory course. Graduates are prepared to enter the field as engineers or to continue into a graduate program. An engineering internship program is available for students to gain industrial experience during their academic careers.

The educational objectives of the undergraduate mechanical engineering program are as follows: 1) To ensure that our graduates have an understanding of fundamental mathematical and scientific principles and the ability to apply these principles to relevant engineering problems, so that they can be successful in the profession or in pursuing graduate studies; 2) to ensure that our graduates have the technical knowl

edge, 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. An integrated BS/MS program facilitates the completion of a master's degree in one additional year beyond the bachelor's degree.

Our faculty members conduct research in a wide variety of areas. This research is supported by a range of sources, including governmental agencies, national laboratories, industry, and charitable foundations. Many of the laboratories in the School of Mechanical and Materials Engineering feature state-of-the-art facilities enabling research to be performed at the highest level. A significant strength of WSU's School of Mechanical and Materials Engineering is the opportunity for interdisciplinary work. Many of the faculty have projects that overlap both mechanical engineering and materials science and engineering and students are frequently able to work in both fields for their theses or dissertations. This feature is rather unique to the programs and adds to the student's intellectual development and employment opportunities. Specific examples of interdisciplinary areas are solid mechanics, advanced materials, manufacturing and processing, heat transfer, and fluid flow.

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).

MATERIALS SCIENCE AND ENGINEERING

The mission of the materials science and engineering program is to provide excellence in education, research, and service in the fields of materials science and engineering through educational programs that graduate students with strong backgrounds in scientific and engineering problem-solving methods. Materials science and engineering is the application of methods and principles of the pure sciences to the study and utilization of engineering materials. The undergraduate program focuses on (a) the relationship of the microscopic structure, e.g. crystal structure and defects to the macroscopic properties of materials, e.g. strength, (b) the relationship of materials, (c) experimental techniques for characterizing physical, chemical and structural properties of materials and, (d) the design and selection of appropriate materials for given engineering applications. The specific fields of application covered by research and instruction programs can be expressed by the nominal designations of metals (metallurgy), polymers, ceramics, electronic materials and composites.

Due to the diversity of useful properties encountered in materials engineering, attention must be given to application and peculiarities of these specific types of materials. Where possible, however, a generalized approach toward the study of materials, their properties, their selection, and their utilization is fostered. The broad-based instructional approach prepares graduates for careers in a wide range of industrial settings, from aerospace companies to corporations specializing in the production of solid state electronics. In addition, the undergraduate curriculum prepares students for continued education at the graduate level. Because of the diversity of useful properties encountered in materials engineering, at

568 Statistical Theory I 3 Prereq Math 273; 430 or 443. Probability spaces, combinatorics, multidimensional random variables, characteristic function, special distributions, limit theorems, stochastic processes, order statistics. Cooperative course taught by WSU, open to UI students (Stat 548).

569 Statistical Theory II 3 Prereq Math 568. Continuation of Math 568. Statistical inferences; estimation and testing hypotheses; regression analysis; sequential analysis and nonparametric methods. Cooperative course taught by WSU, open to UI students (Stat 549).

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 Reliability Theory 3 Prereq Math 430, 443. Statistical concepts; stochastic material strengths and lifetimes; strength vs safety analysis; reliability of coherent systems; maintenance models; complex systems. Cooperative course taught jointly by WSU and UI (Math 571).

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 Topics in Mathematical Modeling in Natural Sciences V 1-3 May be repeated for credit. Cumulative maximum 12 hours. Selected topics in the mathematical modeling of physical and biological phenomena. Cooperative course taught by WSU, open to UI students (Math 588).

589 Seminar in Precalculus Mathematics Education 3 Same as T & L 563.

590 Seminar in Undergraduate Mathematics Instruction V 1-3 May be repeated for credit; cumulative maximum 6 hours. Curricular and other problems of teaching mathematics to undergraduates.

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.

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

602 Internship V 2-12 May be repeated for credit. Prereq 40 hours graduate work. A structured internship from three to nine months; teaching at the postsecondary level or applied work in a non-academic setting. Cooperative course taught jointly by WSU and UI (Math 543).

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.
tention must also be given to the application and peculiarities of specific materials types.

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 in 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 our students the ability to communicate effectively both orally and in writing; 6) to create an environment within the program that instills in the students a sense of professionalism, a desire for life-long learning, and an appreciation for professional ethics and responsibility within the global society; 7) to provide a program which allows our students who so desire to attend the leading graduate schools in the country; and 8) to provide smooth transition for transfer students from community and four-year colleges into our undergraduate program.

The program offers courses of study leading to the degrees of Bachelor of Science in Materials Science and Engineering (accredited by the Accrediting Board for Engineering and Technology) and the Master of Science in Materials Science and Engineering. The school participates in the interdisciplinary program leading to the Doctor of Philosophy (Materials Science).

MANUFACTURING ENGINEERING (VANCOUVER CAMPUS)

Washington State University’s Manufacturing Engineering Program is located on the Vancouver campus. The mission of this program is to offer an accredited engineering degree program to students in the Vancouver - Portland metropolitan area and, through distance education, to other interested students in Washington State. The purpose of this program is to provide a manufacturing engineering education based on the application of engineering sciences and business principles. Graduates from this program will be educated for responsible, informed citizenship and prepared for employment in manufacturing, design, or for entry into management. The graduates will also be prepared to continue their education in graduate school. The School of Mechanical and Materials Engineering at WSU offers a course of study leading to the Bachelor of Science in Manufacturing Engineering. Modern manufacturing is accomplished by means of complex systems of machines augmented by human labor. Manufacturing engineers make extensive use of mechanical engineering principles to create, operate and optimize highly machine dependent manufacturing systems.

The program is operated from WSU’s campus in Vancouver, WA. It is intended to directly serve “place-bound” students in the Southwest Washington region, and indirectly to serve other students by distance education (WHETS) who wish to pursue an engineering education but who cannot relocate for school. The program was established and designed to prepare students to satisfy the needs of local and regional manufacturing industries, particularly the high tech firms, that are increasingly locating in the Vancouver area. The curriculum also prepares students for continued education at the graduate level in mechanical or manufacturing engineering.

The program builds upon the same lower division foundation as Mechanical Engineering. The course of study retains the mechanical engineering emphasis on design, however focused on product design for manufacture, design of a manufacturing process, a mechanical element of a manufacturing process, tooling for manufacturing, and machine integration and control. The students will learn to work in teams with all of the disciplines involved with manufacturing, using frameworks such as concurrent engineering and total quality management (TQM).

Upper division courses in Manufacturing Engineering develop the ability to define requirements, apply engineering design tools to manufacturing, conduct critical analyses of results, and optimize the final product. The sequence of required design courses includes Systems Design (ME 316), Machine Design (ME 414), Seminar in Manufacturing (ME 400), and Capstone Design (ME 420). Engineering tools specific to manufacturing engineering are learned in Manufacturing Processes (ME 310), Manufacturing Planning (ME 325), Manufacturing Control Systems (ME 375), and Automation (ME 475). Supplemental tools are developed in elective classes such as Computer Aided Design (ME 473), Quality Control and Reliability Design (EM 480), Design for Manufacturability (EM 490), Industrial Ecology and Green Design (ME 476), Robotics (ME/EE 442), Microelectronics Fabrication (EE 478), and Manufacturing and Operations Design and Strategy (EM 460). Additional elective courses are being introduced to permit students to select a specialization area appropriate to their current employer, or to prepare for a particular manufacturing sector. Specialization areas include microelectronics, quality, forming and fabricating, or robotics and automation.

The Vancouver campus offers upper division (junior and senior) classes only. Acceptable transfer courses for the lower division requirements in mechanical engineering are prerequisites for admission to the program.

**Degree Program Requirements**

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Students in the Four-Year Degree Agreement program must certify on time, take all indicated courses in first two years, follow remainder of schedule, and have an MSE or M E adviser throughout entire program.

### MATERIALS SCIENCE AND ENGINEERING DEGREE PROGRAM (129 HOURS) ✔FYDA

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
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<tr>
<td>MSE 110</td>
<td>2</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biologic Sciences [B] (GER)</td>
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</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Cpt S 203</td>
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### Sophomore Year

**First Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
</tr>
<tr>
<td>C E 211</td>
</tr>
<tr>
<td>Econ 102 [S] (GER)</td>
</tr>
<tr>
<td>Math 220</td>
</tr>
<tr>
<td>Math 273</td>
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<tr>
<td>Phys 201 [P] (GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>C E 215</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
</tr>
<tr>
<td>Math 315</td>
</tr>
<tr>
<td>MSE 301</td>
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<tr>
<td>Phys 202 [P] (GER)</td>
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### Junior Year

**First Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>E E 304</td>
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<td>M E 310</td>
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<tr>
<td>MSE 302</td>
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<tr>
<td>MSE 312</td>
</tr>
<tr>
<td>MSE 320</td>
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<tr>
<td>Physical Science Elective 1</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Engineering Science Elective 2</td>
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<td>M E 316 [M]</td>
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<tr>
<td>MSE 321</td>
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<tr>
<td>MSE 323</td>
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<td>Physical Science Elective 1</td>
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### Senior Year

**First Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>M E 416</td>
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<td>MSE 401</td>
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<tr>
<td>MSE 402</td>
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<tr>
<td>MSE 403</td>
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<tr>
<td>MSE 413</td>
</tr>
<tr>
<td>MSE 425 [M]</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 402 [W] (GER)</td>
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<tr>
<td>MSE 404</td>
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<tr>
<td>MSE 426 [M]</td>
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<tr>
<td>MSE 450</td>
</tr>
<tr>
<td>Technical Elective 3</td>
</tr>
<tr>
<td>Tier III Humansities or Social Sciences Course (GER)</td>
</tr>
</tbody>
</table>

1. Selected from: Chem 331, 333, 336; Chem 340, 341, 342; or Phys 303, 304.
2. One from: Ch E 480, E E 214, 305, M E 212, 303, 404.

### MECHANICAL ENGINEERING DEGREE PROGRAM (128 HOURS) ✔FYDA

#### Freshman Year

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
</tr>
<tr>
<td>M E 120</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
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</table>
### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>M E 103</td>
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<tr>
<td>Math 172</td>
<td>4</td>
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### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>E E 304</td>
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<tr>
<td>M E 301</td>
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<tr>
<td>M E 303</td>
<td>3</td>
</tr>
<tr>
<td>M E 313</td>
<td>3</td>
</tr>
<tr>
<td>M E 316 [M]</td>
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<td>MSE 301</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>M E 305</td>
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<tr>
<td>M E 310</td>
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</tr>
<tr>
<td>M E 311</td>
<td>1</td>
</tr>
<tr>
<td>M E 348</td>
<td>3</td>
</tr>
<tr>
<td>M E 404</td>
<td>3</td>
</tr>
<tr>
<td>M E 414</td>
<td>3</td>
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</table>

### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>M E 401</td>
<td>3</td>
</tr>
<tr>
<td>M E 402</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective(^1)</td>
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<tr>
<td>Technical Elective(^2)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Communication Proficiency [C,W] (GER)(^3)</td>
<td>3</td>
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<tr>
<td>M E 406 [M]</td>
<td>3</td>
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<tr>
<td>M E 416</td>
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<tr>
<td>Tier III Humanities or Social Sciences Course (GER)</td>
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<tr>
<td>Technical Elective(^1)</td>
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</tbody>
</table>

\(^1\) Technical Elective in M E or MSE.
\(^2\) Upper-division Math, Stat, or Computer Science (Cpt S 430 or 445, C E 463).
\(^3\) Engl 402 is recommended.

### Manufacturing Engineering Degree Program (128 Hours)

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
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<tr>
<td>Chem 105 [P] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>M E 103</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
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### Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 106 [P] (GER)</td>
</tr>
<tr>
<td>Econ 102 [S] (GER)</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>M E 120</td>
</tr>
<tr>
<td>Math 172</td>
</tr>
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</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>C E 211</td>
<td>3</td>
</tr>
<tr>
<td>Math 220</td>
<td>2</td>
</tr>
<tr>
<td>Math 273</td>
<td>2</td>
</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
<td>4</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>C E 215</td>
<td>3</td>
</tr>
<tr>
<td>Cpt S 251</td>
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</tr>
<tr>
<td>M E 212</td>
<td>3</td>
</tr>
<tr>
<td>Math 315</td>
<td>3</td>
</tr>
<tr>
<td>Phys 202 [P] (GER)</td>
<td>4</td>
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</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>E E 304</td>
<td>2</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>M E 303</td>
<td>3</td>
</tr>
<tr>
<td>M E 316 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Math 360</td>
<td>3</td>
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<tr>
<td>MSE 301</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>E E 305</td>
<td>2</td>
</tr>
<tr>
<td>M E 310</td>
<td>3</td>
</tr>
<tr>
<td>M E 311</td>
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<tr>
<td>M E 375</td>
<td>3</td>
</tr>
<tr>
<td>M E 404</td>
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</tr>
<tr>
<td>M E 414</td>
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### Senior Year (Vancouver Campus)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>C E 463</td>
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<tr>
<td>M E 325</td>
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<tr>
<td>M E 400</td>
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<td>M E 474</td>
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<td>Tier III Humanities or Social Sciences Course (GER)</td>
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<tr>
<td>Mfg Engineering Elective</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 402 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>M E 410 [M]</td>
<td>2</td>
</tr>
<tr>
<td>M E 416 or 420</td>
<td>3</td>
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<tr>
<td>M E 475</td>
<td>3</td>
</tr>
<tr>
<td>Mfg Engineering Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

### Certification Mechanical Engineering

Students who have completed at least 30 semester hours of course work and who have completed 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 g.p.a. as well as the g.p.a. 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 placed in a pre-engineering major and assigned to a mechanical engineering adviser. Additional details and application forms are available from the school’s office of student services.

### 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. To be eligible for certification, a student must have completed at least the following:
- 30 semester hours of graded course work at WSU or the equivalent of 30 semester hours of acceptable transfer credit with an overall g.p.a. of 2.0 or above.
- Chem 105 or equivalent.
- Chem 106, Phys 201, or equivalent.
- Math 171, 172, or equivalent.

Other criteria considered for certification are overall g.p.a. and performance in other mathematics, science and engineering courses. For additional details, contact the school’s office of student services.

### 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 requirements for direct entry into the mechanical engineering or materials science and engineering programs upon transfer are the same as listed for certification. Transfer student applications will be handled by the Admissions Office and sent to the school so that students do not need to make a separate application to the school.

### Preparation for Graduate Study

Before undertaking graduate study, a student should have completed substantially the equivalent of the above 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.
Description of Courses

**Mechanical Engineering**

348 Dynamics Systems 3 Prereq M E 313, major in engr. Fundamentals of vibration analysis, control systems, system modeling and dynamics analysis.

349 Dynamic Systems Laboratory 1 (0-3) Prereq M E 348 or c/c. Laboratory investigations of dynamic systems.

379 Manufacturing Control Systems 3 (2-3) Prereq E E 304, M E 212, Math 315. Feedback control; hardware components, software algorithms, and system integration for process control.

400 Seminar in Manufacturing 2 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 M E 311 or c/c; M E 316, 348, FORTRAN or C programming. Integration of mechanical and microprocessor-based systems; control theory implemented with data acquisition systems; sensors; actuators, signal conditioning, programmable logic controllers.

402 Thermal Systems Design 3 Prereq M E 301, major in engr. Power and refrigeration cycles, thermodynamic relations, mixtures, reacting systems and combustion, and chemical equilibrium, compressible flow.

404 Heat Transfer 3 Prereq M E 303 or c/c., major in engr. 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).

405 Thermal Engineering 3 Prereq M E 404 or c/c. Heat, mass, and momentum transfer in thermal systems and system components; computer-aided analysis; optimization and design of thermal systems.

406 [M] Experimental Design 3 (1-6) Prereq M E 305; 404; major in M E; Rec M E 348. Designing, conducting, and reporting of experimental investigations involving mechanical equipment.

408 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 Same as M S E 413.


415 Integrated Design 3 Prereq M E 310, 414 or c/c.; major in engr. Methodologies to optimize product design incorporating functionality, reliability, manufacturability and maintainability.

416 Mechanical Systems Design 3 (1-6) Prereq M E 348, 404, 414; Rec M E 316. Integrative design in mechanical engineering; multidisciplinary design project considering both technical and nontechnical 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 (M E 444).

420 Capstone Engineering Design 3 (1-6) Prereq senior in engr. Integrative design in engineering; multi-disciplinary design project considering both technical and nontechnical contexts; organizational dynamics and communications.


435 Thermal Energy Systems 3 Prereq M E 404 or c/c. Thermal energy systems of current interest including combustion, nuclear, and direct conversion based systems.

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 vehicle and structural design and pollution control.

442 Robotics 3 Same as E E 442.

449 Vibrations and Noise Control 3 Prereq M E 348. Vibrating systems and noise producing mechanisms; design for noise and vibration control. Cooperative course taught jointly by WSU and UI (ME 472).

450 Stress Design Codes 3 Prereq C E 425. Theoretical bases and application of the principal regulatory stress analysis design codes.

453 Mechanics of Materials Processing 3 Prereq C E 215. Mathematics and computer-aided processes involved in manufacturing of materials and products; inelastic deformation, casting, rolling, extrusion, sheet forming, thermal treatments. Cooperative course taught by UI (ME 463), open to WSU students.

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 engr or Ph S. 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).

467 Nuclear Fuel Cycle Economics 3 Same as Ch E 467.

470 Dynamics of Machinery 3 Prereq M E 348. Kinematics and kinetics of mechanisms and machines; static and dynamic force analyses of planar and spatial systems; synthesis for functionality.


473 Computer and Design 3 (2-3) Prereq M E 313. Interactive computer programming and graphics in the design of engineering systems.

474 Advanced Manufacturing Processes 3 Prereq M E 310. Mechanical and metallurgical fundamentals of metal machining and materials processing by deformation; manufacturing systems concepts in production.

475 Manufacturing Automation 3 (2-3) Prereq Cpt S 203 or 251; E E 304; M E 310. Computer control of manufacturing processes; numerically controlled machine tools, robotics, control algorithms, component and system design.

476 Industrial Ecology and Sustainability in Manufacturing 3 Prereq senior in engr. or by permission only. Open and closed manufacturing systems; sources and sinks; pollution prevention, zero discharge; materials productivity and dematerialization; green design and manufacture.

481 Control Systems 3 Prereq M E 348. Analysis and design of feedback control systems. Cooperative course taught jointly by WSU and UI (ME 481).
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).


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.  

533 Experimental Methods in Materials and Manufacturing Process 3 Rec M E 530. Theoretical and experimental techniques in engineering material behavior and manufacturing processes. Cooperative course taught by WSU, open to UI students (ME 533).

534 Mechanics of Composite Materials 3 Rec M E 414. Analysis of micromechanical and macromechanical behavior of composite materials with emphasis on fiber-reinforced composites; 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).

535 Tribology 3 Rec M E 530. Friction, wear, and lubrication of solids with emphasis on metals.

537 Fracture Mechanics and Mechanisms 4 Same as M S E 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 (ME 530).

541 Advanced Mechanical Vibrations 2 or 3 Rec M E 544. Response of single and multi degree of freedom systems; finite element formulation; matrix methods, random vibrations. Cooperative course taught jointly by WSU and UI (ME 572).

542 Optimal Control of Dynamic Systems 3 Introduction to optimal control theory; differential games, and multiple criteria systems; applications in engineering, biology, economics, agriculture, and medicine. Cooperative course taught by WSU, open to UI students (ME 542).

544 Optimal Systems Design 3 Parameter design optimization techniques for nonlinear systems; theory, numerical methods, and applications; multiple criteria optimal trade-off analysis and game theory.

545 Nonlinear Dynamics 3 Rec M E 540 or 541. Fundamentals of nonlinear oscillations, stability theory, perturbation methods, and chaotic behavior in nonlinear dynamical systems.

548 Acoustics 3 Fundamental principles of linear and nonlinear acoustics and its applications.

551 Turbulent Flow 3 Rec C E 550 or M E 521. Turbulent flow; dimensional analysis, statistical models and description of organized structures.

552 Experimental Methods in Thermal-Fluid Science 3 (2-3) Theory and practice in the use of instrumentation for measuring temperature, velocity, pressure and concentration; measurement of classical flow fields.

553 Two-phase Flow 3 V 1-3 May be repeated for credit, cumulative maximum 3 hours. Rec M E 521. Fundamentals of the flow of fluids with two phases and applications. Cooperative course taught by WSU, open to UI students (ME 553).

556 Numerical Modeling in Fluid Mechanics 3 Same as C E 556. Cooperative course taught by WSU, open to UI students (ME 556).

561 Combustion 3 Rec M E 521. General combustion phenomena, chemical reactions, combustor modeling, laminar and turbulent flame theory, emissions. Cooperative course taught by WSU, open to UI students (ME 561).

562 Nuclear Reactor Theory 3 Prereq M E 461; differential equations. Basic reactor neutronic theory including the transport equation; multigroup, multi-region diffusion theory; kinetics; and perturbation theory.

564 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.

565 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 3 V 1-3 May be repeated for credit.

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

582 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

582 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

585 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Manufacturing Engineering

Mfg E

409 Metrology 3 (2-3) Prereq Math 220, M E 212; Rec Math 360. Dimensional referencing and tolerance stack up; process variation and process capability measures; mechanical, electronic, and optical methods for measuring manufacturing attributes and variables.

479 Micro-Device Packaging 3 (2-3) Prereq MSE 301, M E 310, or consent of instructor. Electrical, thermal, and mechanical considerations for packaging methods; manufacturing equipment; processes and analysis for packaging electronic, optical, and mechanical micro-devices.

Materials Science and Engineering

MSE

110 Introduction to Materials Science 2 Introduction to the science and technology of metals, polymers, ceramics and composites.

120 Innovation in Design 2 Same as M E 120.

301 Materials Science 3 Prereq Chem 106, Phys 202 or c/h. Structure of materials, phase equilibrium, phase transformations, and mechanical properties.

302 Electronic Materials 3 Prereq Chem 105, Phys 202 or c/h. Structure of materials, electronic structure of solids; thermal, electrical, dielectric, and magnetic properties of materials; semiconductors processing.

309 Metallurgy Transport Phenomena 3 Prereq Math 315 or c/h. Introduction to principles of metalurgy transport phenomena including heat, mass, and momentum transfer. Cooperative course taught by UI (Met 309), open to WSU students.
312 Thermodynamics and Phase Equilibrium 3 Prereq MSE 301. 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 2 (0-6) Prereq MSE 301 or C-; major in MSE. Principles and techniques of optical metallography and other laboratory methods used in modern materials science and engineering.

321 Materials Characterization 3 Prereq MSE 301. Properties of x-rays, scattering and diffraction; crystal structures; x-ray diffraction methods, transmission electron microscopy and scanning electron microscopy.

323 Materials Characterization Lab 1 (0-3) Prereq C- in MSE 321. Laboratory exercises on materials characterization: x-ray, TEM, SEM.

341 Particulate Materials Processing 4 (3-3) Prereq MSE 310. Engineering science of particulates; powder production, powder properties, separation; design of systems applied to metals, ores, and concentrates. Field trips required. Cooperative course taught by UI (Met 420), open to WSU students.

401 Metallic Materials 3 Prereq MSE 301. Major alloy systems and manufacturing processes; materials selection.

402 Polymeric Materials 3 Prereq MSE 301. 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 301. Processing, characteristics, microstructure, and properties of ceramic materials.

404 Engineering Composites 3 Prereq MSE 402. Basic concept in design and specifications of engineering composites.

407 Materials Fabrication 3 Fundamentals of casting, solidification, metal working, and joining of metallic materials; emphasis on interaction between processing, properties, and structure. Field trip required. Cooperative course taught by UI (Met 407), open to WSU students.

413 Mechanics of Solids 3 Prereq C E 215, MSE 301. Elasticity, elastic stress distributions; plastic deformation of single and polycrystals; introduction to dislocation theory and its applications; creep, fracture, fatigue.

415 Materials Selection and Design 3 Prereq Chem 311. Selection of materials for use in structural applications; consideration of environment, stress conditions, cost and performance as guide to properties. Cooperative course taught by UI (Met 415), open to WSU students.

420 Capstone Engineering Design 3 (1-6) Same as MSE 420.

421 Light Metals 3 Fundamental design of the light metals aluminum, magnesium, and titanium alloys; applications of these materials. Cooperative course taught by UI, open to WSU students (MET 421).


426 [M] Senior Thesis II 2 (0-6) Prereq MSE 320, 323, senior in MSE. Research in materials science and engineering.

429 Powder Metallurgy 3 Fundamentals of conventional press-and-sinter powder metallurgy (PM) and more advanced techniques; commercial applications of PM parts. Cooperative course taught by UI (MET 429), open to WSU students.


450 Seminar 1 May be repeated for credit. For seniors only.

461 Metallurgical Control and Optimization 3 Basics of process control and optimization applied to metallurgical engineering. Cooperative course taught by UI (Met 461), open to WSU students.

471 Materials Characterization Techniques 1 (0-3) Prereq instructor approval, Chem 105, Phys 201 or equivalent. 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.

501 Advanced Topics in Materials Science 2 or 3 May be repeated for credit; cumulative maximum 6 hours. Chemical crystallography, microstructure, ultra-structure, theories of crystalline and non-crystalline solids, rheology and fracture mechanism of materials. Cooperative course taught by WSU, open to UI students (Met 544).

503 Advanced Topics in Materials Engineering V 1-3 May be repeated for credit; cumulative maximum 6 hours.

511 Deformation 3 Rec MSE 413. Elementary dislocation theory and its application to some important deformation processes.

513 Crystal Plasticity 3 Prereq Math 440. Dislocation theory; slip climb; mechanical properties of crystals, compounds and alloys.

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.

519 Corrosion and Oxidation of Metals 3 Prereq MSE 316. Basic corrosion and oxidation mechanisms for various metals with emphasis on those pertaining to stainless steels.

520 Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Reporting problems, research and research methods in materials science and engineering. S, F grading.

523 Ceramics Processing 3 Prereq graduate standing. Fundamentals of ceramic processing science for thin films and bulk ceramics.

537 Fracture Mechanics and Mechanisms 4 Fracture mechanics and mechanisms and the microstructural origins of toughness in metals, polymers and composites.

543 Natural and Synthetic Polymeric Materials 3 Rec MSE 402. Glassy, crystalline, and rubbery states of synthetic and natural polymers.

546 Parameters for Synthesis of Wood Composition Materials 3 Theory and practice of wood composite materials, manufacture and development. Cooperative course taught by WSU, open to UI students (ForPr 537).

547 Basic Principles of Adhesion 3 Rec MSE 402. Principles of interfacial bonding applied in the engineering of polymers, wood and heterophase systems.

548 Reinforced Polymer and Wood-based Composites 3 Fundamentals of composite materials having polymers and wood as major components.

549 Nondestructive Testing of Wood-based Materials 3 Same as C E 536.

592 Transmission Electron Microscopy 3 Development of the principles and applications of electron optics in microscopy.

593 Practical Electron Microscopy 1 (0-3) Prereq MSE 592 or C-. Experimental methods in electron microscopy and microanalytical techniques, for materials science. 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.

Program in Basic Medical Sciences

Professor and Program Chair, M. B. Laskowski; Professors, R. W. Brosmer, R. B. Croteau, D. W. King, M. L. Poll, S. R. White, R. B. Wilson; Associate Professor, J. M. Mallatt; Assistant Professor, P. F. Mixer; Clinical Affiliates, L. H. Fearn, M. Hunt, F. E. Martinez, D. R. Rauch, J. F. Thompson; Science Instructor, D. M. Conley.

The Program in Basic Medical Sciences is an integral part of the Washington-Wyoming-Alaska-Montana-Idaho (WWAMI) Cooperative Program in Medical Education. Course work is parallel with and equivalent to the first year curriculum of the University of Washington School of Medicine. The entire program is taught in concert with the University of Idaho. Courses are taught on both campuses with faculty from WSU and the University of Idaho taking part in each, all WWAMI students being taught as a single class. All WWAMI students are members of the first year class of the University of Washington School of Medicine, and all courses apply to the M.D. degree granted by that university. Because of specialized support material required and the nature of course content, course enrollment is restricted. With the approval of the course director and the student’s adviser, certain courses listed below may be taken by graduate students enrolled in graduate programs leading to advanced degrees granted by other academic units.

In accordance with School of Medicine policy, all Med S courses are S, F graded.
Description of Courses

Medical Sciences

Med S
501P Medical Preceptorship 2 May be repeated for credit; cumulative maximum 4 hours. For WWAMI students only. Practicum, observations of medical practice with individual physician volunteers.

510P Histology 3 (2-3) Description and microscopic examination of cell types, tissues, and major organs of the human body.

511P Anatomy of the Trunk 5 (4-3) For WWAMI students only. Extensive regional study of human thorax, abdomen, pelvis, and perineum; embryology and living anatomy; correlates gross with clinical anatomy.

512P Basic Mechanisms in Cellular Physiology 4 Basic physiological mechanisms, primarily at the cellular level.

513P 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.

514P Molecular and Cellular Biology I 3 Classical molecular and cellular biochemistry, cellular physiology and molecular genetics.

516P Systems of Human Behavior I 2 Physical and psychological development of the individual; conceptual systems and models of behavior related to medicine.

520P Cell and Tissue Response to Injury 4 Patterns of cell and tissue response to injury; inflammation; neoplasia. Cooperative course taught jointly by WSU and UI (MedS S20).

521P 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.

522P Introduction to Clinical Medicine II 2 For WWAMI students only. Communication skills as related to patients and dealing with problem identification and patient history.

523P Medical Immunology 2 For WWAMI students only. Principles of immunology and their relationship to human medicine.

524P Molecular and Cellular Biology II 2 Continuation of Med S 514.

526P Systems of Human Behavior II 2 Continuation of Med S 516 with an emphasis on models of behavior, normality and abnormality related to medicine.

531P Head, Neck, Ear, Nose and Throat 5 (4-3) Gross anatomy, including skull, pharynx, and larynx; audition and balance.

532P Nervous System 5 (4-3) Normal structure and function of the nervous system, including the eye.

535P Introduction to Clinical Medicine III 2 (1-2) For WWAMI students only. The screening physical examination.

600P Special Projects or Independent Study V 1-6 May be repeated for credit; cumulative maximum 6 hours.

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 Military Science

Professor and Department Chair, Lieutenant Colonel J. Ebbeson; Assistant Professors, Captain R. Hart, Captain J. Jansen, Captain C. VanAlst; Senior Instructor, Master Sergeant M. Salas.

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 U.S. Army. The military science academic, professional and technical education and training complement the educational programs at WSU. A copy of the student's birth certificate is required for participation in the ROTC program.

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 highly competitive and is offered only with the approval of the department chair. During the summer between the junior and senior years of military science, cadets attend ROTC Advanced 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 are academic in nature. The practical aspects of military education and training are taught in leadership labs and summer camps. Basic and advanced course students are required to participate in leadership labs which are conducted throughout the year. These events provide instruction in individual military skills and group leadership techniques. Practical leadership experience is also gained through these labs since they are organized and conducted by the cadets under faculty supervision.

In addition to the military science courses, in order to be commissioned into the U.S. Army, cadets are required to complete courses in mathematics, computer science, military history, human behavior, and written communication. Information as to specific courses which need to be completed is available in the department.

Advanced course cadets receive a monthly stipend of $200 per month during the school year to cover the additional costs associated with advanced course standing. Competitively awarded scholarships are available which, in addition to the monthly stipend, 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. Those who wish to seek advanced degrees may apply for a delay to active duty in order to complete their graduate studies before entering active service.

Description of Courses

Basic Course

Mil S
101 The United States Army 1 Role of the Army in contemporary society.

102 National and International Role of the Army 1 Role of the Army in today's international affairs.

110 Cougar Rangers I 1 Military adventure training, pioneering activities, military skills and small unit tactics. Field trip required.

111 Cougar Rangers II 1 Military adventure training, pioneering activities, military skills and small unit tactics. Field trip required.

201 Introduction to Leadership 2 Multidisciplinary approach to military leadership.

202 The Officer as a Professional 2 U.S. Army Officer Corps as a profession; the U.S. Army Officer as a professional.

206 Military Science Overview 5 Preparation for advanced military science program; map reading, tactics, leadership, U.S. military history, fundamentals of army duty.

396 Leader Internship 6 Prereq junior standing. By interview only. Fully funded non-committal leader internship in the United States.

Advanced Course

Mil S
301 Applied Leadership and Management 3 Troop leadership procedures emphasizing instruction in military professionalism and ethics; practical aspects of tactics and leadership practicum.

302 Small Unit Tactics and Military Leadership 3 Preparation, delivery, and critique of practical oral presentations; leadership of small units; offensive and defensive operations.

320 Advanced Summer Camp 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.

401 Advanced Military Leadership 3 Historical and legal basis of military justice; small unit management; military professionalism and ethics.

402 Advanced Military Management and Practicum 3 Theory and practice of Army administration/management; staff planning and correspondence; pre-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 can best be viewed as a dynamic continuum in which approaches derived from chemistry, physics, and biology are utilized to address the fundamental mechanisms of living things. The School of Molecular Biosciences encompasses several areas each described here in more detail.

**BIOCHEMISTRY AND BIOPHYSICS**

Biochemistry and biophysics are interdisciplinary sciences that involve the application of methods and theories of chemistry and physics 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. Graduate 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, protein export, DNA repair, reproductive biology, protein-DNA interactions, plant and natural product biochemistry, and structural biology including NMR spectroscopy, x-ray crystallography and computer simulations.

The undergraduate and graduate programs offer courses of study leading to the degrees of Bachelor of Science in Biochemistry, Master of Science in Biochemistry, and Doctor of Philosophy.

**Undergraduate Majors in Biochemistry and Biophysics**

The program offers three curricular options leading to the Bachelor of Science in Biochemistry. The general biochemistry option provides balanced training in biochemistry and biophysics; the molecular biology option provides emphasis on cell biology and molecular genetics; and the molecular biophysics option provides increased emphasis on physics and mathematics. At least 40 of the total hours required must be at the 300-400-level.

**Minor in Biochemistry**

An undergraduate minor in biochemistry requires a one-semester analytical chemistry course with laboratory and two semesters of organic chemistry with laboratories each semester, MBioS 303, plus 6 additional hours under the biochemistry degree program, 2 hours of which must include laboratory courses. MBioS 303 and 304 may be used to satisfy the requirement for 10 hours of biochemistry/biophysics.

**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 receive degrees 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 Ph.D. degrees in a variety of areas in agriculture and basic science. Students who receive Master's and Ph.D. 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 some cases in specialized medical research. Areas of specialization for those students studying toward the Master's and Ph.D. degrees include, but are not limited to, genetic engineering, molecular genetics, cell biology, biochemical and developmental genetics, mutagenesis, cytogenetics, barley breeding, and mammalian reproductive biology.

**Undergraduate Majors in Genetics and Cell Biology**

The school offers a course of study for undergraduate majors leading to the degree of Bachelor of Science in Genetics and Cell Biology. There are two options under this degree. Option 1: Applied Genetics and Cell Biology with a focus on either plant or animal biotechnology. This option is offered through the College of Agriculture and Home Economics. Option 2: Molecular Genetics and Cell Biotechnology, offered under the College of Sciences. Both options require a total of 120 credits for graduation; 63-72 credits in core courses, 15-18 credits for options; and 13-24 credits for electives.

**Minor in Genetics and Cell Biology**

Requirements for the minor in Genetics and Cell Biology are: 16 hours under the genetics and cell biology degree program at the 300-400-level, including MBioS 301 and 401. A grade of C or better is required in all course work for the minor.

**Minor in Pre-Genetic Counseling**

Requirements for the minor in Pre-Genetic Counseling are: 21 total hours; 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 519, Psych 312, 333, 350, 361, 464, Soc 351, 446, Zool 251, 316, 320, 407. A grade of C or better is required in all course work for the minor.

**MICROBIOLOGY**

Microbiology is both a basic and an applied science that studies microorganisms and their activities. It is concerned with their form, structure, reproduction, physiology, and identification. It includes the study of their role in the environment and in the diseases they cause, and the physical and chemical changes they make in their environment. Employment opportunities in industrial, government, hospital, and private laboratories and agencies are excellent for qualified graduates. Majors may also prepare for advanced degrees and easily complete the requirements for application to medical, dental, veterinary, or other professional schools. At the graduate level, the school offers programs leading to the degree of Master of Science in Microbiology and Doctor of Philosophy. Areas in which the unit is prepared to direct research include the biology of microorganisms, biotechnology, molecular genetics, microbial basis of cell-cell interactions and virulence, microbial differentiation, cellular and tumor immunology and the regulation of the immune response, diseases of insects and their development of resistance to microbial pathogens.

**Undergraduate Majors in Microbiology**

Majors are required to develop a strong background in the basic sciences before taking courses in microbiology and those required by the various options. At the undergraduate level, the Microbiology degree program offers options in microbiology and medical technology, leading to the Bachelor of Science degree in Microbiology. At least 40 of the total hours required must be in 300-400-level courses. A total of 28 credit hours must be in the core courses and a minimum g.p.a. of 2.0 is required in these courses for graduation. None of the core courses or developmental courses may be taken pass, fail. The General Microbiology option requires MBioS 301, 302, 340, 341, 440, 441, 442, 443, and 6 additional hours in the microbiology degree program and one advanced lecture-lab course outside the department. Those contemplating graduate study are urged to take the Chem 340-343 series in lieu of Chem 240. Requirements for the Medical Technology option are the same except that Zool 417 is required. Zool 417 fulfills the requirement for one advanced lecture-lab course outside the department and is strongly recommended. A one-year internship in an accredited school of medical technology is required after graduation for those interested in becoming certified medical technologists.

**Minor in Microbiology**

A minimum of 16 credit hours including MBioS 302 and the remaining at the 300-400-level selected from: MBioS 340, 341, 342, 426, 440, 441, 442, 443, 444, 445, 446, 448, 450, 454, and MBioS 499. A grade of C or better is required in all course work for the minor.

**MOLECULAR BIOLOGY MINOR**

An undergraduate minor in molecular biology is available and administered by the faculty of the School of Molecular Biosciences. A grade of C or better is required in all course work for the minor. Students may satisfy the 18-21 credit hour requirement for this minor by taking the following courses: MBioS 301, 302, 303, 401; MBioS 304, 402, or 454; MBioS 413, 426, or 520. Further information can be obtained from the School of Molecular Biosciences office.

**Degree Program Requirements**

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

**GENERAL BIOCHEMISTRY DEGREE PROGRAM (121 HOURS) **

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>
### Sophomore Year

#### First Semester
- **Hours**
- Biol 103 [B] (GER) 4
- Chem 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 172 4

#### Second Semester
- **Hours**
- Biol 104 [B] (GER) 4
- Chem 340 4
- Chem 341 2
- MBioS 301 4
- Phys 101 [P] (GER) 4

#### Junior Year

#### First Semester
- **Hours**
- Arts & Humanities [H,G] (GER) 3
- Biol 104 [B] (GER) 4
- Chem 340 3
- Chem 341 2
- MBioS 301 4
- Phys 102 [P] (GER) 4
- Social Sciences [S,K] (GER) 3

#### Second Semester
- **Hours**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Chem 220 2
- Chem 222 2
- Engl 201 [W] (GER) 3
- MBioS 304 [M] 3
- MBioS 361 [M] 1
- Complete Writing Portfolio

### Junior Year

#### First Semester
- **Hours**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Chem 220 2
- Chem 222 2
- MBioS 303 4
- MBioS 361 [M] 1
- Science Elective 3
- Complete Writing Portfolio

#### Second Semester
- **Hours**
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Engl 201 [W] (GER) 3
- MBioS 304 [M] 3
- MBioS 361 [M] 1
- Complete Writing Portfolio

### Senior Year

#### First Semester
- **Hours**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Chem 220 2
- Chem 222 2
- Engl 201 [W] (GER) 3
- MBioS 304 [M] 3
- MBioS 465 3
- Elective 3

#### Second Semester
- **Hours**
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- MBioS 302 4
- MBioS 401 3
- MBioS 465 3
- Elective 3

### BIOCHEMISTRY/MOLECULAR BIOLOGY OPTION DEGREE PROGRAM (121 HOURS) ✔FYDA

#### Freshman Year

#### First Semester
- **Hours**
- Biol 103 [B] (GER) 4
- Chem 105 [P] (GER) 4
- GenEd 110 [A] (GER) 3
- Math 171 [N] (GER) 4

#### Second Semester
- **Hours**
- Biol 104 [B] (GER) 4
- Chem 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 172 4

#### Sophomore Year

#### First Semester
- **Hours**
- Chem 220, 222 4
- Chem 340, 341 5
- Engl 101 [W] (GER) 3
- Phys 201 [P] (GER) 4

#### Second Semester
- **Hours**
- Arts & Humanities [H,G] (GER) 3
- Chem 340, 341 5
- Engl 201 [W] (GER) 3
- Phys 202 [P] (GER) 4

#### Junior Year

#### First Semester
- **Hours**
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 6
- Math 273 2
- MBioS 303 4
- MBioS 361 [M] 1
- Phys 303 3

#### Second Semester
- **Hours**
- Math 220 2
- MBioS 304 [M] 3
- MBioS 465 3
- Phys 304 3
- Science Elective 3
- Social Sciences [S,K] (GER) 3

#### Senior Year

#### First Semester
- **Hours**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Intercultural [I,G,K] (GER) 3
- MBioS 414 3
- Tier III Course (GER) 3
- Elective 2

#### APPLIED GENETICS AND CELL BIOLOGY DEGREE PROGRAM (123 HOURS) ✔FYDA

College of Agriculture and Home Economics with a focus on either plant or animal biotechnology.

#### Freshman Year

#### First Semester
- **Hours**
- Biol 103 [B] (GER) 4
- Chem 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 107 3

#### Second Semester
- **Hours**
- Ag Ec 201 [S] (GER) 3
- Biol 104 [B] (GER) 4
- Chem 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 108 2

#### Sophomore Year

#### First Semester
- **Hours**
- Chem 240; or Chem 340, 341, 342 4-8
- Math 140 [N] or 171 [N] (GER) 4
- MBioS 301 4

#### Second Semester
- **Hours**
- Arts & Humanities [H,G] (GER) 3
- Communication Proficiency [C,W] (GER) 3
- MBioS 302 4
- MBioS 303 4
- Soc 331[S] (GER) or Soc 430 [K] (GER) 3
### BIOTECHNOLOGY DEGREE PROGRAM

#### MOLECULAR GENETICS AND CELL BIOLOGY DEGREE PROGRAM (120 HOURS)

<table>
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<tr>
<th>Junior Year</th>
<th>First Semester</th>
<th>Hours</th>
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<tr>
<td>One from: MBioS 426, 520</td>
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<td>Phys 101 [P] (GER)</td>
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<tr>
<td>Two from: MBioS 304 [M], 402, 454, Biol 452</td>
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<td>Complete Writing Portfolio</td>
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#### Senior Year

##### First Semester

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| MBioS 401 | 3 |
| Phys 102 [P] (GER) | 4 |
| Electives | |

##### Second Semester

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<th>Degree Program Courses</th>
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| MBioS 490 | 2 |

#### Departments

**College of Sciences**

**School of Molecular Biosciences**

### BIOTECHNOLOGY DEGREE PROGRAMS (120 HOURS) FYDA

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<thead>
<tr>
<th>Freshman Year</th>
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<td>GenEd 110 [A] (GER)</td>
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<th>Second Semester</th>
<th>Hours</th>
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| Chem 240 | 4 |
| Communication Proficiency [C,W] (GER) | 3 |
| Phys 101 [P] (GER) | 4 |

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<th>Second Semester</th>
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<tr>
<td>MBioS 301</td>
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<td>MBioS 303</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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### Microbiology and Medical Technology Degree Programs (120 HOURS)

#### Description of Courses

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<tr>
<th>Molecular Biosciences</th>
<th>MBioS 101 (Micro) [B] Introductory Microbiology</th>
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<tbody>
<tr>
<td>4</td>
<td>Microbiology for the informed citizen as it impacts humans and their environment. Not for students who have taken Biol 103 and 104. Credit not granted for both MBioS 101 and MBioS 102/105.</td>
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<table>
<thead>
<tr>
<th>MBioS 102 (Micro) Introductory Microbiology</th>
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<tbody>
<tr>
<td>Description of microorganisms and the role they play in disease production, public health, the environment and in commercial processes. Not for students who have taken Biol 103 and 104. Credit not granted for both MBioS 101 and MBioS 102/105.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>MBioS 105 (Micro) [B] Introductory Microbiology Laboratory</th>
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<tbody>
<tr>
<td>1 (0-3) Prereq MBioS 102 or equivalent or c/.. Introductory microbiology laboratory; lab portion of MBioS 101. Credit not granted for both MBioS 101 and MBioS 102/105.</td>
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<tr>
<th>MBioS 150 [Q] Genetics and Society</th>
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<tr>
<td>2 (3-2) Same as Biol 150.</td>
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<table>
<thead>
<tr>
<th>MBioS 301 (GenCB) General Genetics</th>
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<tr>
<td>4 Prereq Biol 104; two semesters Chem. Principles of modern and classical genetics.</td>
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2. Required independent lab project E Mic 586/587 or MBioS 498 or 499; additional laboratory courses from the following are recommended: MBioS 304, 378, MBioS 498 or 499, MBioS 441 [M], 443 [M], 454.

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1. Pre-med students and those interested in advanced degrees should take Chem 340, 341, 342, and 343, a one-year course in organic chemistry.
2. Chem 220 and 222, Quantitative Chemistry, 4 credits, should be taken after MBioS 303, 304.
3. Electives may include MBioS 401, 426, 444, 445, 446, 448, 450, 454, 547. A total of two courses (6 credits) is required.

For Microbiology Degree Program, Entom 343, 448, Zool 315, 333, 417, or 428 may satisfy this requirement; for Medical Technology Degree Program, take Zool 417.
302 (Micro 301) General Microbiology 4 (3-3) Prereq Bioi 104; Chem 240 or c/. Structure, function, nutrition, physiology and genetics of microbes and their application to immunology, pathology, microbial diversity and environmental microbiology.

303 (BC/BP 364) Introductory Biochemistry 4 Prereq Chem 106; Chem 240 or 340. Modern biochemistry for undergraduates in the biological sciences. Cooperative course taught by WSU, open to UI students (MMBB 380).

304 (BC/BP 366) [M] Introductory Biochemistry Laboratory 3 (1-6) Prereq Bioi 303 or c/. Basic biochemical techniques.

320 [B] DNA and Society 3 Prereq 1 collegiate course in biology. The role of DNA in natural processes and diseases; impact of biotechnology on health care, agriculture, industry, and our lives.

341 (Micro 311) Diagnostic Medical Bacteriology 2 (0-6) Prereq Bioi 340 or c/. Techniques and tests for the identification of bacteria pathogenic for humans.

342 (Micro 331) Microbial Ecology 3 Prereq Bioi 104; Chem 240 or c/. Discussion of microorganisms' behavior in nature and microbial activities influence on ecological balance.

360 (BC/BP 312, GenCB 312) [M] Cell and Molecular Laboratory 2 (0-6) Prereq Bioi 301, 303, or c/; one semester organic chemistry. Laboratory methods in cell biology; genetics and molecular biology.

361 (BC/BP 398) [M] Undergraduate Seminar 1 Prereq junior standing. Opportunities in biochemistry, biophysics and molecular biology.

378 Introduction to Molecular Biology Computer Techniques V 1 (0-5) to 3 (1-6) Prereq Bioi 301, 303. Computer analysis of nucleic acid sequences and protein structure.

401 (BC/BP 463) General Biochemistry 3 Prereq Bioi 303, junior standing. Structure and function of proteins, nucleic acids and biological membranes; principles of enzymology; biochemical methodology.

414 (BC/BP 464) General Biochemistry 3 Prereq Bioi 413. Metabolism of carbohydrates, proteins, fats, bioenergetics; photosynthesis; control of metabolic processes.

420 (GenCB) Fundamentals of Molecular Genetics 3 Prereq Bioi 301, 303. Genetics and molecular biology emphasizing eukaryotic topics and including prokaryotic techniques.

422 (GenCB 405) Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Same as Hort 405/505. Credit not granted for both Bioi 422 and 522.

423 (GenCB 430) Human Genetics 3 Prereq Bioi 301. Exploration of individual and population genetics leading to critical discussion of current social, medical, and scientific issues.

424 (GenCB 453) Directed Problems in Cell Biology 1 Prereq Bioi 301 or 303; c/ in MBioS 401. Adjunct course to Bioi 401.

425 (GenCB 455) [T] Origins of Life 3 Prereq one Tier II course in biological sciences and completion of one Tier I and three Tier II courses. Origin of life and evolution of genetic structure; critical analysis of molecular evolution.

426 (GenCB 462, Micro 462) Microbial Genetics 3 Prereq Bioi 301 or 303; Bioi 302. Genetics of bacteria, bacteriophages and plasmids; regulation of gene expression; genetic manipulation of microorganisms.

427 (GenCB 488) [M] Perspectives in Biotechnology 3 Same as A 488. Credit not granted for both MBioS 427 and 522.

432 (Micro 413) Immunology 3 Prereq Bioi 302; org chem. Principles of basic immunology. Credit not granted for both Bioi 440 and 540.

441 (Micro 413) [M] Immunology Laboratory 2 (0-6) Prereq Bioi 440 or c/. Fundamental principles and techniques used in immunology.

442 (Micro 414) General Virology 3 Prereq Bioi 301, 303; organic chemistry. The biology of bacterial, animal, and plant viruses. Credit not granted for both MBioS 442 and 542. Cooperative course taught by WSU, open to UI students (MMBB 414).

443 (Micro 415) [M] General Virology Laboratory 2 (0-6) Prereq Bioi 442 or c/. Laboratory techniques concerning cultivation and characterization of viruses. Cooperative course taught by WSU, open to UI students (MBBio 415).

444 (Micro 416) Food and Applied Microbiology 3 Prereq Bioi 416.

445 (Micro 417) Food Microbiology Laboratory 2 (0-6) Same as FSHN 417.

446 (Micro 420) 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 (MBBio 420).

447 (Micro 450) Molecular Mechanisms in Microbiology 2 In-depth discussion of molecular mechanisms and different experimental approaches in microbiology. Cooperative course taught by UI (MBBio 450), open to WSU students.

448 (Micro 431) Soil Microbial Ecology 3 Same as Soils 431.

450 (Micro 428) Basic and Applied Microbial Physiology 3 Prereq Bioi 302, 303. Basic microbial physiology and its relevance to the processes of applied microbiology. Credit not granted for both MBioS 450 and 550.

452 (Micro) Environmental Microbiology 3 Prereq college-level biology, microbiology, organic chemistry. Microbial contamination and interactions between micro-organisms and the environment, methods and mechanisms of bioremediation. Credit not granted for both MBioS 452 and 552.

454 (Micro 464) Techniques in Molecular Biology 3 (1-6) Prereq Bioi 402, or MBioS 302. Basic principles and techniques of gene manipulation.

455 (Micro 489) Biotechnology for High School Teachers 3 (1-6) Prereq high school science teaching experience. Methodologies illustrating the use of microbes to implement laboratory exercises in biotechnology.

465 (BC/BP 472) 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 spectrophotometry.


469 (GenCB) [M] Genetics and Cell Biology Seminar 2 May be repeated for credit. Prereq MBioS 301. Classical literature in genetics and cell biology; current topics discussed by faculty experts in the field.

472 (GenCB 498) [M] Topics in Applied Genetics and Cell Biology 2 Prereq senior status in genetics and cell biology. Written and oral presentation of a topic in applied genetics and cell biology.

490 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 (Micro) Senior Project 1 Prereq senior Micro major. Laboratory research or library project; seminar presentation.

498 Directed Research V 1 (0-3) to 3 (0-12) May be repeated for credit. Prereq MBioS 301 or 303. Introduction to laboratory research.

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

501 (GenCB 550) Cell Biology 3 Prereq MBioS 301, 303. Graduate-level counterpart of MBioS 401; additional requirements. Credit not granted for both MBioS 401 and 501. Cooperative course taught by WSU, open to UI students (Genet/PlSc 550).

503 (BC/BP 565) Molecular Biology I 3 Prereq MBioS 301, 303. DNA replication and recombination in prokaryotes and eukaryotes; recombinant DNA methods and host/vector systems; genome analysis; transgenic organisms.

504 (GenCB 566) Molecular Biology II 3 Prereq MBioS 301, 303. Gene expression and regulation in prokaryotes and eukaryotes, including transcription, RNA processing, and translation; chromatin structure; DNA repair.

506 (Micro 529) Molecular Techniques in Microbiology 3 (1-6) Prereq grad. level biochemistry or molecular biology course or instructor consent. Current molecular biology techniques applied to DNA and protein isolation and characterization: southern and western blots, PCR, PAGE, computer cloning. Cooperative course taught by WSU, open to UI students (MMBB 529).

513 (BC/BP 563) General Biochemistry 3 Graduate-level counterpart of MBioS 413; additional requirements. Credit not granted for both 413 and 513. Cooperative course taught by WSU, open to UI students (MMBB 541).

514 (BC/BP 564) General Biochemistry 3 Graduate-level counterpart of MBioS 414; additional requirements. Credit not granted for both 414 and 514. Cooperative course taught by WSU, open to UI students (MMBB 542).

520 (GenCB 502) Eukaryotic Molecular Genetics 2 Prereq MBioS 301, 303. Gene control and organization; lower eukaryotic and cell culture genetics.
521 (GenCB 556) Cell Biotechnology V 1-3 Prereq MBioS 303, 401. Contemporary cell biotechnology; techniques including cell culture, immunology (including preparation and use of monoclonal antibodies), nucleic acid hybridization (including in situ).

522 (GenCB 505) Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Graduate-level counterpart of MBioS 422; additional requirements. Credit not granted for both MBioS 422 and 522.

523 (GenCB 572) Fundamentals of Oncology 3 Same as P/T 572.

524 (GenCB 575) Cellular and Molecular Aspects of Development 3 Same as Zool 573.

525 (GenCB 581) Advanced Topics in Genetics V 1-2 May be repeated for credit. Prereq MBioS 520 or 511. Recent research in selected areas of genetics.

526 (GenCB 592) Advanced Topics in Cell Biology V 1-3 May be repeated for credit; cumulative maximum 7 hours. Current research in cell structure and function. Cooperative course taught by WSU, open to UI students (Genet/Pisc 592).

527 (GenCB 588) Perspectives in Biotechnology 3 Graduate-level counterpart of MBioS 427; additional requirements. Credit not granted for both MBioS 427 and 527.

528 (GenCB 558) Molecular and Cellular Reproduction 3 (2-2) Course will review the state of the art concepts of the molecular, cellular, and physiological aspects of mammalian reproduction.

530 (GenCB 570) Plant Molecular Genetics 3 Prereq MBioS 520. Plant molecular genetics with emphasis on systems specific to plants and plant genetic engineering. Cooperative course taught by WSU, open to UI students (Genet/Pisc 570).

531 (Bot 511) Plant Cell Biology 3 Prereq graduate standing. Function of the plant cell with emphasis on current research; topics include membrane biology, protein targeting, and molecular signaling.

532 (GenCB 504) Plant Transmission Genetics 3 Same as CropS 504.

533 (GenCB) Fungal Genetics 4 (3-3) Same as PL P 534.

535 (GenCB) Molecular Genetics of Plant and Pathogen Interactions 2 Same as PL P 535.


539 (GenCB 580) Protein Trafficking in Eukaryotic Cells 3 Same as PL Ph S50.

540 (Micro 512) Immunology 4 The immune system at the animal, cellular, and molecular levels. Credit not granted for both MBioS 440 and 540. Cooperative course taught by WSU, open to UI students (MMBB 512).

541 (Micro) Seminar 1 May be repeated for credit. Literature reviews and research reports.

542 (Micro 514) General Virology 3 Graduate-level counterpart of MBioS 442; additional requirements. Credit not granted for both MBioS 442 and 542.

543 (Micro 562) Advanced Pathogenic Mechanisms 3 Prereq by interview only. Detailed analysis of microbial virulence factors and host factors involved in infection and infectious disease. Cooperative course taught jointly by WSU and UI (MMBB 562).

544 (Micro 568) Microbial Transformation 3 Prereq MBioS 303, MBioS 450. Use of microbes in the biodegradation of wastes and bioprocessing to produce valuable chemicals. Cooperative course taught by UI (MMBB 568), open to WSU students.

545 (Micro 570) Advanced Immunology 3 Prereq introductory course in immunology. Cellular and molecular regulation of the immune response. Cooperative course taught by WSU, open to UI students (VS 570).

546 (Micro 580) Selected Topics in Microbiology 1 May be repeated for credit; cumulative maximum 2 hours. Prereq 9 hours 300-400-level Micro.

547 (Micro 582) Advanced Topics in Microbiology V 1-3 May be repeated for credit.

549 (Micro 590) Selected Topics in Immunology 1 May be repeated for credit; cumulative maximum 2 hours. Prereq course in immunology. Seminar series on advances in immunology.

550 (Micro 528) Basic and Applied Microbial Physiology 3 Graduate-level counterpart of MBioS 450; additional requirements. Credit not granted for both MBioS 450 and 550.

552 (Micro) Environmental Microbiology 3 Graduate-level counterpart of MBioS 452; additional requirements. Credit not granted for both MBioS 452 and 552.

561 (BC/BP) Biochemical Signaling in Plants, Animals and Microorganisms 2 Prereq MBioS 513. New research on intra and extra cellular biochemsitry, including communication in plants and hormone action in animals.

567 (BC/BP) Proteins and Enzymes 3 Prereq MBioS 513. Enzyme mechanisms; protein structure and function; protein evolution.

568 (BC/BP) Advanced Topics in Biochemistry V 1-3 May be repeated for credit. Prereq MBioS 513 or c/. Recent research in selected areas of biochemistry.

570 (BC/BP) Biological Membranes 2 or 3 Prereq MBioS 514. Structure and function of biological membranes; composition, transport, receptors, and sensory phenomena.

571 (BC/BP 587) Advanced Topics in Plant Biochemistry 2 Prereq MBioS 514; basic botany. Biochemistry unique to plants; new research advances.

573 (BC/BP) Physical Biochemistry 3 Prereq MBioS 465 or one year physical chem. Techniques for the study of biological structure and function: spectroscopy; magnetic resonance, diffusion, and sedimentation, electron microscopy, diffraction and scattering.

574 (BC/BP) Protein Biotechnology 3 Biotechnology related to the isolation, modification and large scale commercial production, patenting and marketing of useful recombinant proteins and products.

575 (BC/BP 580) Protein Trafficking in Eucaryotic Cells 3 Same as PL Ph S50.

576 (BC/BP) Molecular Biology Techniques I 1 (0-3) Prereq MBioS 514 or c/. Modern laboratory technique in the sequencing of nucleic acids.

577 (BC/BP) Molecular Biology Techniques II 1 (0-3) Prereq MBioS 514 or c/. Modern laboratory techniques in the use of plasmids as cloning vehicles.

578 (BC/BP 591) Biochemistry Seminar 1 or 2 May be repeated for credit; cumulative maximum 10 hours. Required of all graduate students in biochemistry.

581 Seminar in Animal Physiology 1 Same as AS 540.

593 (BC/BP) Research Proposal 2 May be repeated for credit; cumulative maximum 4 hours. Written and oral presentation of an area of biochemistry.

600 (BC/BP, GenCB, Micro) Special Projects or Independent Study Variable credit. S, F grading.


702 (BC/BP, GenCB) Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 (BC/BP, GenCB) Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

School of Music and Theatre Arts

The School of Music and Theatre Arts offers courses leading to the degree of Bachelor of Music, Bachelor of Arts in Theatre Arts and Drama, Master of Arts in Music, Master of Arts in Theatre Arts and Drama, and Master of Arts in the Teaching of Theatre Arts and Drama. Endorsement curricula offered in cooperation with College of Education provide certification for teachers of music or drama. Minors in music and drama are available as are many courses, performance opportunities, and other activities for students interested in music and theatre.

Music


The Music Program is committed to a tradition of excellence in performance, teaching, and the study of theoretical, historical, and philosophical aspects of the musical arts. Its chief objectives are:

- to provide students with a foundation in the analysis and criticism of music and guide them toward acquiring discriminating judgment in a progressive musical environment;
- to train teachers and practitioners of music who can be effective in contemporary society;
- to assist aspiring performers and composers to reach the highest potential of artistic capacity;
Theory studies as freshmen will usually require more combination with other fields. At least 42 of the hours required for this degree must be 300-400-level courses. The following curricula are designed to prepare students as professional musicians, teachers, and practitioners of music.

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.

Students following any of the music education or elective studies options are required to present an acceptable senior recital in the major performance medium.

Students following any of the music education options must have a minimum g.p.a. of 2.5 in all of the following areas: cumulative g.p.a., 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.

MAJOR IN 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.

### FIRST AND SECOND YEAR REQUIREMENTS

The first and second year requirements are common to the Brass, Percussion, Strings, Winds; Keyboard; Keyboard, with elective studies in Pedagogy; and Voice degree programs:

**Freshman Year**

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<th>Course</th>
<th>Hours</th>
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<td>Mus 252²</td>
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<td>Music Private Lessons</td>
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**Sophomore Year**

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<td>Communication [C,W] (GER)</td>
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<td>Degree Program Course, if necessary⁵</td>
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<tr>
<td></td>
<td>GenEd 110 [A] (GER)</td>
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</tr>
<tr>
<td></td>
<td>Mus 351¹</td>
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</tr>
<tr>
<td></td>
<td>Mus 352²</td>
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<tr>
<td></td>
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<tr>
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<td>Music Private Lessons</td>
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<tr>
<td>Second Semester</td>
<td>Degree Program Course, if necessary⁶</td>
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<td></td>
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<tr>
<td></td>
<td>Math Proficiency [N] (GER)</td>
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<tr>
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<td>Mus 353³</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ For Brass, Percussion, Strings, Winds, and Voice degree programs, take Mus 181/182/281. (Class piano credits not required for degree.)
² Fall only.
³ Chosen from Mus 428-444.

BRASS, PERCUSSION, STRINGS, WINDS PERFORMANCE DEGREE PROGRAM

**OPTION III - 138 HOURS**

**FYDA**

Requirements include: Upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; junior and senior recitals.

**Junior Year**

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td></td>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mus 360 [M]</td>
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<td></td>
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<td></td>
<td>Music Electives</td>
<td>2</td>
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<tr>
<td></td>
<td>Complete Writing Portfolio</td>
<td>1</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mus 361 [M]</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mus 435</td>
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<td></td>
<td>Mus 455</td>
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<td>Music Private Lessons</td>
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<td></td>
<td>Music Electives</td>
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<td></td>
<td>Physical Sciences [P] (GER)</td>
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**Senior Year**

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>Music Private Lessons</td>
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<td></td>
<td>Music Electives</td>
<td>4</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Music Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Music Electives</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Tier III Course (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Fall only.
² Spring only.
³ Chosen from Mus 428-444.

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**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. At least 42 of the hours required for this degree must be 300-400-level courses. The following curricula are designed to prepare students as professional musicians, teachers, and practitioners of music.

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.

Students following any of the music education or elective studies options are required to present an acceptable senior recital in the major performance medium.

Students following any of the music education options must have a minimum g.p.a. of 2.5 in all of the following areas: cumulative g.p.a., 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.

**Degree Program Requirements**

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

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 g.p.a. of 2.0; completion of 10 hours with a cumulative g.p.a. of 2.0 and a grade of C or better in any of the following courses: Mus 151, 152, 161, 181, 182, 251, 252, 253, 254, 281; approval of the appropriate 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 g.p.a. and C or better in each course listed for the major, minor and professional core, plus a 2.5 cumulative g.p.a., 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 g.p.a. and a grade of C or better in each music course. Each student is required to pass the piano proficiency exam and the upper-division exam. Students must also complete the General Education Requirements plus those for the College of Liberal Arts.

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School of Music and Theatre Arts
KEYBOARD PERFORMANCE DEGREE PROGRAM (OPTION 1A - 138 HOURS) FYDA

Requirements include: Accompany a junior, senior, or graduate recital; piano proficiency exam; upper-division exam; junior recital; senior recital; 2.5 average in all music courses; C or better in all music courses.

Junior Year

First Semester
- Arts & Humanities [H,G] (GER) 3
- Intercollegiate [I,G,K] (GER) 3
- Mus 360 [M] 3
- Mus 435 1
- Mus 451 1
- Mus 465 2
- Mus Private Lessons 4
- Complete Writing Portfolio

Second Semester
- Mus 361 [M] 3
- Mus 441 1
- Mus 451 1
- Mus 465 2
- Mus Private Lessons 4
- Physical Sciences [P] (GER) 4

Senior Year

First Semester
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER) 6
- EdPsy 301, or Psych 361 or 490 3 or 4
- Mus 498 Practicum 2
- Mus Ensemble 1
- Mus Private Lessons 4
- Secondary Instrument 2

Second Semester
- Arts & Humanities [H,G] or Social Sciences [S, K] (GER) 3
- Mus 486 2
- Mus 498 Practicum 2
- Mus Ensemble 1
- Mus Private Lessons 4
- Tier III Course (GER) Electives 1 or 2

Electives 5

VOICE PERFORMANCE DEGREE PROGRAM (OPTION II - 139 HOURS) FYDA

Requirements include: Upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; junior and senior recitals.

Junior Year

First Semester
- Intercultural [I,G,K] (GER) 3
- Mus 360 [M] 3
- Mus 428 1
- Mus 491 1
- Mus Private Lessons 4
- Physical Sciences [P] (GER) 4
- Complete Writing Portfolio

Second Semester
- Mus 361 [M] 3

Fall only.
2 Spring only.
3 Chosen from Mus 428-444.
4 Ensemble required if enrolled for applied music, but not required for degree; may be used as music elective.

KEYBOARD PERFORMANCE (ELECTIVE STUDIES IN PEDAGOGY) DEGREE PROGRAM (OPTION 1B - 138 HOURS) FYDA

Requirements include: Accompany a junior, senior, or graduate recital; piano proficiency exam; upper-division exam; junior recital; senior recital; 2.5 average in all music courses; C or better in all music courses.

Junior Year

First Semester
- Arts & Humanities [H,G] (GER) 3
- Intercollegiate [I,G,K] (GER) 3
- Mus 360 [M] 3
- Mus 435 1
- Mus 451 1
- Mus 465 2
- Mus Ensemble 1
- Mus Private Lessons 4
- Complete Writing Portfolio

Second Semester
- Mus 361 [M] 3

Fall only.
2 Spring only.
3 Chosen from Mus 428-444.
4 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: C or better in all music courses; 2.5 music average; upper-division exam; piano proficiency exam.

Students must pass the piano proficiency exam, pass the upper-division exam, achieve a 2.5 g.p.a. 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.

Freshman Year

First Semester
- Arts & Humanities [H,G] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Mus 181 1
- Mus 251 1
- Mus 252 1
- Mus Ensemble 428-444 1
- Mus Private Lessons 2

Second Semester
- ComSt 102 [C] (GER) 3
- GenEd 111 [A] (GER) 3
- Mus 161 1
- Mus 182 1
- Mus 253 1
- Mus 254 1
- Mus Ensemble 428-444 1
- Mus Private Lessons 2

Sophomore Year

First Semester
- Econ 101 [S] (GER) 3
- Mus 281 1
- Mus 351 1
- Mus 352 1
STUDIES IN ELECTRICAL ENGINEERING
BACHELOR OF MUSIC, WITH ELECTIVE STUDIES IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE (128 HOURS) ✔FYDA

This program offers specialization in music in combination with a minor in Theatre. This four-year program is designed to meet the needs of students wishing professional preparation in music combined with studies in theatre.

Students following this option are required to present an acceptable senior half recital in the major performance medium.

Students must pass the piano proficiency exam, pass the upper-division exam, achieve a 2.5 g.p.a. 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.

Freshman Year

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<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
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</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 107</td>
<td>4</td>
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<tr>
<td>Mus 181</td>
<td>0 or 1</td>
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<tr>
<td>Mus 251</td>
<td>3</td>
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<td>Mus 252</td>
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<tr>
<td>Mus Ensemble 428-444</td>
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<tr>
<td>Mus Private Lessons</td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE/CS Minor Course(s)</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
</tr>
<tr>
<td>Communication [W, C] (GER)</td>
</tr>
<tr>
<td>EE/CS Minor Course</td>
</tr>
<tr>
<td>Mus 258</td>
</tr>
<tr>
<td>Mus 361</td>
</tr>
<tr>
<td>Mus 481</td>
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<tr>
<td>Mus Electives 300-400</td>
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<td>Electives</td>
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Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Humanities [H, G] (GER)</td>
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</tr>
<tr>
<td>Mus 163</td>
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<td>Mus 257</td>
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<td>Mus 360</td>
<td>3</td>
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<td>Mus 452</td>
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<tr>
<td>Mus 435 or 428</td>
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<td>Mus Private Lessons</td>
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Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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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>Communication [W, C] (GER)</td>
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<tr>
<td>EE/CS Minor Course</td>
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<tr>
<td>Mus 258</td>
</tr>
<tr>
<td>Mus 361</td>
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<td>Mus 481</td>
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<td>Mus Electives 300-400</td>
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Senior Year

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<tbody>
<tr>
<td>EE/CS Minor Course(s)</td>
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<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
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<tr>
<td>Mus Ensemble 428-444</td>
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<tr>
<td>Mus 496</td>
</tr>
<tr>
<td>Mus Electives 300-400</td>
</tr>
<tr>
<td>Mus Private Lessons 400-level and senior recital</td>
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<td>Electives</td>
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Sophomore Year

<table>
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<th>First Semester</th>
<th>Hours</th>
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<tbody>
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<td>Mus 281</td>
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<td>Mus 351</td>
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<tr>
<td>Mus 352</td>
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</tr>
<tr>
<td>Mus Ensemble 428-444</td>
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</tr>
<tr>
<td>Mus Private Lessons</td>
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</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
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<tr>
<td>Social Sciences [S, K] (GER)</td>
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Second Semester

<table>
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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Cpt S 250 or EE 214</td>
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<td>Intercultural [G, I, K] (GER)</td>
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<td>Mus 353</td>
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<td>Mus 354</td>
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<td>Mus Private Lessons</td>
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<td>Phys 202 [P] (GER)</td>
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Junior Year

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<tbody>
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<td>Mus 452</td>
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<td>Mus 435 or 428</td>
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Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
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<td>EE/CS Minor Course</td>
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<tr>
<td>Mus 258</td>
</tr>
<tr>
<td>Mus 361</td>
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<td>Mus 481</td>
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<tr>
<td>Mus Electives 300-400</td>
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<tr>
<td>Electives</td>
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Senior Year

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE/CS Minor Course(s)</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
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<tr>
<td>Mus Ensemble 428-444</td>
</tr>
<tr>
<td>Mus 496</td>
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<tr>
<td>Mus Electives 300-400</td>
</tr>
<tr>
<td>Mus Private Lessons 400-level and senior recital</td>
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<tr>
<td>Electives</td>
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Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eng 101 [W] (GER)</td>
<td>3</td>
</tr>
<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 253</td>
<td>3</td>
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<td>Mus Ensemble 428-444</td>
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</tr>
<tr>
<td>Mus Private Lessons</td>
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Second Semester

<table>
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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Eng 101 [W] (GER)</td>
</tr>
<tr>
<td>Mus 257</td>
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<td>Mus 360</td>
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<td>Mus 452</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
</tr>
<tr>
<td>Theat 260</td>
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Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>Mus 163 [G] (GER)</td>
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<td>Mus 257</td>
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</tr>
<tr>
<td>Mus 360</td>
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<tr>
<td>Mus 435 or 428</td>
<td>1</td>
</tr>
<tr>
<td>Mus 452</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
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<tr>
<td>Theat 260</td>
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<tr>
<td>Theat 367 [H] (GER)</td>
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Electives

<table>
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<tr>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<td>Mus 353</td>
</tr>
<tr>
<td>Mus 354</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
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<tr>
<td>Mus Private Lessons</td>
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</table>

Business Minor Courses

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Business Minor Course</td>
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<tr>
<td>Mus 258</td>
</tr>
<tr>
<td>Mus 361</td>
</tr>
<tr>
<td>Mus 428 or 435</td>
</tr>
<tr>
<td>Mus 481</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
</tr>
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EE/CS Minor Course(s)

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<td>Mus 258</td>
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<td>Mus 496</td>
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<tr>
<td>Mus Electives 300-400</td>
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<tr>
<td>Mus Private Lessons 400-level and senior recital</td>
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Science Elective (GER)

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<tr>
<td>Physical Science [P] (GER)</td>
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<tr>
<td>Theat 160 [H] (GER)</td>
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Arts & Humanities [H, G] or Humanities [H, G] (GER)

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Social Sciences [S, K] (GER)

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Intercultural 

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Arts & Humanities 

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<tr>
<td>Electives</td>
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School of Music and Theatre Arts
## Second Semester

### Hours

| Arts & Humanities [H,G], Intercultural [I, G, K], or Social Sciences [S, K] (GER) or Theat 365 | 3 |
| Mus 258 | 2 |
| Mus 361 [M]^1 | 3 |
| Mus 428 | 1 |
| Mus 481^1 | 1 |
| Mus Private Lessons | 2 |
| Theat 362 | 3 |
| Theat 496 | 1 |

### Senior Year

#### First Semester

### Hours

| Arts & Humanities [H,G], Intercultural [I, G, K], or Social Sciences [S, K] (GER) | 3 |
| Biological Sciences [B] (GER) | 3 |
| Musical Sciences [B] (GER) | 4 |
| Mus 496 | 2 |
| Mus Ensemble 428-444 | 1 |
| Mus Private Lessons | 2 |
| Theat 361 | 3 |

#### Second Semester

### Hours

| Arts & Humanities [H,G] (GER) or Social Sciences [S, K] (GER) | 3 |
| Mus 202 or 302, Private Lessons | 2 |
| Mus 361 [M]^1 | 3 |
| Mus Ensemble^1, 3 | 1 |
| Mus 451^1 | 2 |
| Mus 456 | 2 |
| Mus Private Lessons (202 or 302) | 2 |
| Music Electives | 4 |
| Complete Writing Portfolio | 3 |

### Junior Year

#### First Semester

### Hours

| Physical Sciences [P] (GER) | 4 |
| Mus 360 [M]^1 | 3 |
| Mus Ensemble^1, 3 | 1 |
| Mus 451^1 | 2 |
| Mus 456 | 2 |
| Mus Private Lessons | 1 |
| Music Electives | 3 |

#### Second Semester

### Hours

| Arts & Humanities [H,G] or Social Sciences [S, K] (GER) | 3 |
| Mus 202 or 302, Private Lessons | 2 |
| Mus 361 [M]^1 | 3 |
| Mus Ensemble^1, 3 | 1 |
| Mus 451^1 | 2 |
| Mus 456 | 2 |
| Mus Private Lessons | 2 |
| Music Electives | 2 |
| Electives | 5 |

### Sophomore Year

#### First Semester

### Hours

| Math Proficiency [N] (GER) | 3 |
| Mus 256 | 1 |
| Mus 281^1 | 1 |
| Mus 351^1 | 3 |
| Mus 352^1 | 1 |
| Mus Ensemble^1 | 1 |
| Mus Private Lessons | 2 |
| Science Elective (GER) | 4 |

#### Second Semester

### Hours

| Arts & Humanities [H,G] (GER) | 3 |
| Biological Sciences [B] (GER) | 4 |
| Mus 256 | 1 |
| Mus 353^2 | 3 |
| Mus 354^2 | 1 |
| Mus Ensemble (Choral)^1 | 1 |
| Mus Private Lessons | 2 |
| Music Electives | 2 |

### MAJOR IN COMPOSITION

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.

### COMPOSITION DEGREE PROGRAM

#### OPTION V - 141 HOURS

**FYDA**

| Requirements include: Upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; minor recital. |

### Freshman Year

#### First Semester

### Hours

| Engl 101 [W] (GER) | 3 |
| ComSt 102 [C] (GER) | 3 |
| Mus 181^1 | 1 |
| Mus 251^2 | 3 |
| Mus 252^3 | 1 |
| Mus Ensemble^1 | 1 |
| Mus Private Lessons | 2 |
| Social Sciences [S, K] (GER) | 3 |

#### Second Semester

### Hours

| Communication [C,W] (GER) | 3 |
| GenEd 111 [A] (GER) | 3 |
| Mus 161^1 | 3 |
| Mus 182^2 | 1 |
| Mus 253^3 | 3 |
| Mus 254^4 | 1 |
| Mus Ensemble^1 | 1 |
| Mus Private Lessons | 2 |
| Mus Elective | 1 |

### MAJOR IN MUSIC EDUCATION

This program offers professional preparation in music with specialization in music education. At least 42 of the hours required for this degree must be 300-400-level courses.

The following curricula are designed to prepare students as professional teachers of music. 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 g.p.a. of 2.5 in all of the following areas: cumulative g.p.a., 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 option IV endorsements 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 g.p.a.

Students must pass the Piano Proficiency Exam, pass the upper-division exam, achieve a cumulative 2.5 g.p.a. and a grade of C or better in all Music classes, and a 2.5 g.p.a. 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.

### BROAD ENDORSEMENT DEGREE PROGRAM

**OPTION IVA - 156 HOURS**

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.

### Freshman Year

#### First Semester

### Hours

| Arts & Humanities [H,G] (GER) | 3 |
| Engl 101 [W] (GER) | 3 |
| Mus 181 | 0 or 1 |
| Mus 251 | 3 |
| Mus 252 | 1 |
| Mus Ensemble | 1 |
| Mus Private Lessons | 2 |
| Psych 105 [S] (GER) | 3 |

#### Second Semester

### Hours

| ComSt 102 [C] (GER) | 3 |
| Engl 201 [W] (GER) | 3 |
| Mus 161 | 3 |
| Mus 182 | 0 or 1 |
| Mus 253 | 3 |
| Mus 254 | 1 |
| Mus Ensemble | 1 |
| Mus Private Lessons | 2 |

### Sophomore Year

#### First Semester

### Hours

| GenEd 110 [A] (GER) | 3 |
CHORAL/GENERAL ENDOREMENT DEGREE PROGRAM
(OPTION I VB - 152 HOURS)

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; 7 credits (minimum 4 vocal) ensemble; upper-division exam, piano proficiency; solo half recital.

First Semester
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Mus 181 3
- Mus 215 3
- Mus 252 1
- Mus Ensemble 1
- Mus Private Lessons 1
- T & L 300 1
- Complete Writing Portfolio

Second Semester
- ComSt 102 [C] (GER) 3
- Engl 201 [W] (GER) 3
- GenEd 111 [A] (GER) 3
- Mus 161 3
- Mus 253 3
- Mus 254 1
- Mus Ensemble 1
- Mus Private Lessons 2

Sophomore Year
- Biological Sciences [B] (GER) 4
- Intercultural [L,G,K] (GER) 3
- Mus 182 0 or 1
- Mus 315 3
- Mus 352 1
- Mus 491 2
- Mus Ensemble 1
- Mus Private Lessons 2
- T & L 300 1

Junior Year
- Mus 353 3
- Mus 354 1
- Mus 481 1
- Mus 490 4
- Mus Ensemble 1
- Mus Private Lessons 2
- T & L 301 2
- May Field Experience
- Certify Major, Certify T & L

Senior Year
- Mus 360 [M] 3
- Mus 488 2
- Mus 489 2
- Mus 493 2
- T & L 302 2
- T & L 303 2
- T & L 317 2
- Science Elective (GER) 4

CHORAL/GENERAL ENDOREMENT DEGREE PROGRAM
(OPTION IVC - 151 HOURS)

This option provides teacher certification in Designated Arts: Music (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; 7 credits (minimum 4 instrumental) ensemble; upper-division exam; piano proficiency; solo half recital.

First Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Arts & Humanities [H,G], Intercultural [L,G,K], or Social Sciences [S,K] (GER) 6
- Math Proficiency [N] (GER) 3 or 4
- Mus 455 or T & L 328 2

Second Semester
- ComSt 102 [C] (GER) 3
- Engl 201 [W] (GER) 3
- Mus 181 3
- Mus 215 3
- Mus 252 1
- Mus Ensemble 1
- Mus Private Lessons 1
- T & L 300 1

Junior Year
- Mus 360 [M] 3
- Mus 488 2
- Mus Ensemble 1
- Mus Private Lessons 2
- T & L 302 2
- T & L 303 2
- T & L 317 2

Senior Year
- Arts & Humanities [H,G] (GER) 3
- Arts & Humanities [H,G], Intercultural [L,G,K], or Social Sciences [S,K] (GER) 6
- Tier III Course (GER) 3

INSTRUMENTAL/GENERAL ENDOREMENT DEGREE PROGRAM (OPTION IV C - 151 HOURS)

This option provides teacher certification in Designated Arts: Music (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; 7 credits (minimum 4 instrumental) ensemble; upper-division exam; piano proficiency; solo half recital.

First Semester
- Arts & Humanities [H,G] (GER) 3
- Engl 101 [W] (GER) 3
- Mus 181 0 or 1
- Mus 215 3
- Mus 252 1
- Mus Ensemble 1
- Mus Private Lessons 1
- T & L 300 1

Second Semester
- Arts & Humanities [H,G] (GER) 3
- Mus 488 2
- Mus Ensemble 1
- Mus Private Lessons 2
- T & L 300 2

Junior Year
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Music Upper-Division Exam

Senior Year
- Arts & Humanities [H,G] (GER) 3
- Arts & Humanities [H,G], Intercultural [L,G,K], or Social Sciences [S,K] (GER) 6
- Tier III Course (GER) 3

Fifth Year
- Arts & Humanities [H,G] (GER) 3
- Arts & Humanities [H,G], Intercultural [L,G,K], or Social Sciences [S,K] (GER) 6
- Tier III Course (GER) 3
Fifth Year  

First Semester  

Hours  

MUS 497  4  
T & L 415  12  

MUSIC EDUCATION, WITHOUT TEACHING CERTIFICATE (OPTION IVA-132 HOURS)  

FYDA  

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.

Freshman Year  

First Semester  

Hours  

Arts & Humanities [H,G] (GER)  3  
Engr 101 [W] (GER)  3  
GenEd 110 [A] (GER)  3  
Mus 181  0 or 1  
Mus 251  3  
Mus 252  1  
Mus Ensemble  1  
Mus Private Lessons  2  
Psych 105 [S] (GER)  3  

Second Semester  

Hours  

Biological Sciences [B] (GER)  4  
ComSt 102 [C] (GER)  3  
GenEd 111 [A] (GER)  3  
Mus 161  3  
Mus 182  0 or 1  
Mus 253  3  
Mus 254  1  
Mus Ensemble  1  
Mus Private Lessons  2  

Sophomore Year  

First Semester  

Hours  

Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  3  
Engr 101 [W] (GER)  3  
Mus 281  0 or 1  
Mus 351  3  
Mus 352  1  
Mus 491  2  
Mus Ensemble  1  
Mus Private Lessons  2  

Second Semester  

Hours  

Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  3  
Intercultural [I,G,K] (GER)  3  
Mus 281  0 or 1  
Mus 351  3  
Mus 352  1  
Mus 491  2  
Mus Ensemble (Instrumental)  1  
Mus Private Lessons  2  
T & L 301  1  

Junior Year  

First Semester  

Hours  

Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  3  
Engr 101 [W] (GER)  3  
Mus 281  0 or 1  
Mus 351  3  
Mus 352  1  
Mus 491  2  
Mus Ensemble  1  
Mus Private Lessons  2  
T & L 301  1  

Second Semester  

Hours  

Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  3  
Intercultural [I,G,K] (GER)  3  
Mus 281  0 or 1  
Mus 351  3  
Mus 352  1  
Mus 491  2  
Mus Ensemble (Instrumental)  1  
Mus Private Lessons  2  

Senior Year  

First Semester  

Hours  

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)  6  
Mus 460 [M]  3  
Mus 480  3  
Mus 493  3  
Mus Ensemble (Choral)  1  
Mus Private Lessons (400-level, Sr. Recital)  2  
Tier III Course (GER)  3  

MA DEGREE—FIRST SEMESTER  

Second Semester  

Hours  

Engl 402  2  
Mus 487 (in MA degree)  2  
Mus 494 (in MA degree)  2  
Mus 550 or 500 (in MA degree)  2  
Mus 575 (in MA degree)  1  
Mus 589 (in MA degree)  1  
T & L 400  2  

BACHELOR OF ARTS IN MUSIC (123 HOURS)  

FYDA  

This four-year program is designed to meet the needs of students wishing a broad liberal arts background with a major in music. Of the total 120 credits required for a degree in this program, 73 credits are devoted to courses outside music, including the General Education Requirements. Non-music courses other than those used for the GE requirements must be at the 200-level or above. 40 credits of the 120 required for the degree must be in 300-400-level. Music courses beyond the required 47 credits in music add to the number of credits required in the degree. Other requirements include: C or better in all music courses; 2.5 music average; upper-division exam; piano proficiency exam or grade of C or better in Mus 182.

Freshman Year  

First Semester  

Hours  

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)  6  
Intercultural [I,G,K] (GER)  3  
Mus 487  2  
Mus 493  2  
Mus 494  2  
T & L 328 or Mus 453  2  
T & L 478  2  
Tier III Course (GER)  3  
Ensemble and Mus Private Lessons—optional  3  

Second Semester  

Hours  

Math Proficiency [N] (GER)  3  
Mus 103  2  
Mus 163 [G] (GER)  3  
Mus 353  3  
Mus 354  1  
Mus 490  4  
Mus Ensemble (Instrumental)  1  
Mus Private Lessons  2  
T & L 301  1  

Junior Year  

First Semester  

Hours  

Mus 360 [M]  3  
Mus 455 or T & L 328  2  
Mus Ensemble (Choral)  1  
Mus Private Lessons  2  
T & L 302  2  
T & L 303  3  
T & L 317  2  

Second Semester  

Hours  

Intercultural [I,G,K] (GER)  3  
Mus 258  2  
Mus 361 [M]  3  
Mus 428 or 435  1  
Mus 453 or T & L 328  2  
Mus 481  1  
Mus Private Lessons  2  
Physical Science [P] (GER)  4  

Senior Year  

First Semester  

Hours  

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)  6  
Mus 460 [M]  3  
Mus 480  3  
Mus 493  3  
Mus Ensemble (Choral)  1  
Mus Private Lessons (400-level, Sr. Recital)  2  
Tier III Course (GER)  3  

FYDA  

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.

First Semester  

Hours  

Arts & Humanities [H,G] (GER)  3  
Engr 101 [W] (GER)  3  
GenEd 110 [A] (GER)  3  
Mus 181  0 or 1  
Mus 251  3  
Mus 252  1  
Mus Ensemble  1  
Mus Private Lessons  2  
Psych 105 [S] (GER)  3  

Second Semester  

Hours  

Biological Sciences [B] (GER)  4  
ComSt 102 [C] (GER)  3  
GenEd 111 [A] (GER)  3  
Mus 161  3  
Mus 182  0 or 1  
Mus 253  3  
Mus 254  1  
Mus Ensemble  1  
Mus Private Lessons  2  

Senior Year  

First Semester  

Hours  

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)  6  
Mus 460 [M]  3  
Mus 480  3  
Mus 493  3  
Mus Ensemble (Choral)  1  
Mus Private Lessons (400-level, Sr. Recital)  2  
Tier III Course (GER)  3  

MA DEGREE—FIRST SEMESTER  

Second Semester  

Hours  

EdPsy 402  2  
Mus 487 (in MA degree)  2  
Mus 494 (in MA degree)  2  
Mus 550 or 500 (in MA degree)  2  
Mus 575 (in MA degree)  1  
Mus 589 (in MA degree)  1  
T & L 400  2  

BACHELOR OF ARTS IN MUSIC (123 HOURS)  

FYDA  

This four-year program is designed to meet the needs of students wishing a broad liberal arts background with a major in music. Of the total 120 credits required for a degree in this program, 73 credits are devoted to courses outside music, including the General Education Requirements. Non-music courses other than those used for the GE requirements 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 47 credits in music add to the number of credits required in the degree. Other requirements include: C or better in all music courses; 2.5 music average; upper-division exam; piano proficiency exam or grade of C or better in Mus 182.
### 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, Theat 367, Mus 163, 363, or 262; 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.

### Theatre Arts and Drama

**Associate Professor and Theatre Arts and Drama Coordinator, G. R. Caldwell; Professor, L. H. Harris; Associate Professors, T. Converse, L. Furman, W. H. Sheppard.**

The Theatre Arts and Drama Program provides musical theatre students with a foundation of studies in production, history, and analysis of the theatre arts within a liberal arts context. As an integral part of the academic program, WSU Theatre presents a regular schedule of productions by faculty and students. The undergraduate curriculum offers a well-rounded background in all of the major disciplines of theatre.

### Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Students seeking the Bachelor of Arts in Theatre Arts and Drama must complete the General Education Requirements plus those for the College of Liberal Arts. Students pursuing a teaching endorsement option must have a minimum g.p.a. of 2.5 in all of the following areas: cumulative g.p.a., 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.

### THEATRE ARTS AND DRAMA DEGREE PROGRAM (120 HOURS)  

#### MUSICAL THEATRE DEGREE PROGRAM (120 HOURS)  

- **Freshman Year**
  - **First Semester**  
    - Engl 101 [W] (GER) 3  
    - GenEd 110 [A] (GER) 3  
    - Mus 203 or 303 3  
    - Mus 251 3  
    - Theat 260 3  
  - **Second Semester**  
    - Communication Proficiency [C,W] (GER) 3  
    - GenEd 111 [A] (GER) 3  

- **Sophomore Year**
  - **First Semester**  
    - Intercultural [I,G,K] (GER) 3  
    - Physical Sciences [P] (GER) 4  
    - Social Sciences [S,K] (GER) 3  
    - Theat 261 3  
    - Theat 496 1  
  - **Second Semester**  
    - Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3  
    - Biological Sciences [B] (GER) 4  
    - Theat 361 3  
    - Theat 362 3  
    - Theat 496 1  

- **Junior Year**
  - **First Semester**  
    - Literature Elective [H] (GER) recommended 3  
    - Theat 264 or 294 2  
    - Theat 363 or 364 3  
    - Theat 365 3  
    - Theat 402 1  
    - Theat 496 1  
  - **Second Semester**  
    - Literature Elective [H] (GER) recommended 3  
    - Theat 264 or 294 2  
    - Theat 363 or 364 3  
    - Theat 365 3  
    - Theat 402 1  
    - Theat 496 1  

- **Senior Year**
  - **First Semester**  
    - Theat 313 3  
    - Theat 401 or 465 3  
    - Theat 496 1  
    - Electives 9  
  - **Second Semester**  
    - Theat 496 1  
    - Tier III Course (GER) 3  
    - Electives 8  

Spring only course.

1. Music performing group required if enrolled for applied music, but not required in degree or class piano credits; not required in degree.
2. Fall only.
3. 3 Chosen from Mus 428-444.
4. Spring only.

### Jazz Studies Minor

Required courses: Mus 257, 258, 362, 438, 439, 440, 457, 458, and one 3-credit Mus course.
Mary teaching endorsement is in another field.

Theatre Program. Also available is a supporting teaching endorsement in drama for students whose primary teaching endorsement is in another field.

## Description of Courses

### 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 beyond tuition for either performance studies or the use of practice facilities. 100-level performance studies in selected instruments 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 Director (audition required) or study in a secondary performance medium by music majors.

Individual instruction in performance studies is offered at the 300- and 400-level for music majors and, by special permission of the Director, to advanced non-music majors who meet all requirements for music majors as listed below. All students enrolled in 200- through 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 jury examinations at the end of each term. For enrollees in Mus 203, 303, or 403, the required ensemble is Mus 431 or Mus 432. 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 all of these criteria are met. In addition, each music major must pass the piano proficiency exam, as a precondition to 400-level standing.

Performance studies may not be taken on a pass, fail basis or audited. Enrollment in performance studies policy is by permission of the director.

### Nonmajor and Secondary Performance Studies

Lower-division courses and Mus 319 available for 2 credits only and may be repeated for credit. Mus 319 is designed for 300-400-level study on secondary instrument or voice by music majors.

### Major Performance Studies

Admission to 300 level is by audition only. Students progress from the 300 level to the 400 level by upper-division examination before a representative committee of the faculty. This evaluation will include all aspects of the student’s program, including performance, literature, and core music requirements.

The 500 level represents credit given for graduate study and is limited to enrolled graduate students pursuing a master’s degree. Credit for the 300, 400 and 500 levels is granted on the basis of 2 credits for one half-hour lesson per week and 4 credits for two half-hour lessons per week. All major performance studies may be repeated for credit.

### Music Performing Groups

The lab-lecture ratios of these courses reflect the number of rehearsal hours per week (for example, 0-4 equals 4 hours of rehearsal weekly). All courses (except Mus 430) in this section are repeatable for credit up to a maximum of 8 credits. The Music Program limits to 4 the number of music performing group credits that may be counted toward the 30 credit hour minimum for the Master of Arts in Music. All 500-level courses in this section are offered conjointly with 400-level courses by the same name. The usual prohibition against credit for both 400-500-level credit for conjoint courses does not apply to music performing groups.

### Major Performance Studies

Admission to 300 level is by audition only. Students progress from the 300 level to the 400 level by upper-division examination before a representative committee of the faculty. This evaluation will include all aspects of the student’s program, including performance, literature, and core music requirements.

The 500 level represents credit given for graduate study and is limited to enrolled graduate students pursuing a master’s degree. Credit for the 300, 400 and 500 levels is granted on the basis of 2 credits for one half-hour lesson per week and 4 credits for two half-hour lessons per week. All major performance studies may be repeated for credit.

### Music Performing Groups

The lab-lecture ratios of these courses reflect the number of rehearsal hours per week (for example, 0-4 equals 4 hours of rehearsal weekly). All courses (except Mus 430) in this section are repeatable for credit up to a maximum of 8 credits. The Music Program limits to 4 the number of music performing group credits that may be counted toward the 30 credit hour minimum for the Master of Arts in Music. All 500-level courses in this section are offered conjointly with 400-level courses by the same name. The usual prohibition against credit for both 400-500-level credit for conjoint courses does not apply to music performing groups.
431 Con certo Choir 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

432 University Singers 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Public performance may be required.

433 Vocal Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performance may be required.

434 Symphony Orchestra 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Orchestral literature and public performance each semester.

435 Chamber Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

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.

439 Vocal Jazz Ensemble 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances.

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. Public performances.

442 Marching Band/Varsity Band 1 May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

467 Marching Band Techniques 2 (0-4) Prereq Mus 253. In-depth experience with planning, designing and arranging marching band shows using traditional and contemporary techniques.

528 Opera Workshop 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 428; additional requirements.

531 Concert Choir 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 431; additional requirements.

533 Vocal Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 433; additional requirements.

534 Symphony Orchestra 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 434; additional requirements.

535 Chamber Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 435; additional requirements.

537 Wind Symphony 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 437; additional requirements.

538 Jazz-Lab Band 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 438; additional requirements.

539 Vocal Jazz Ensemble 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Graduate-level counterpart of Mus 439; additional requirements.

443 Accompaniment 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Graduate-level counterpart of Mus 440; additional requirements.

444 Accompanying 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performance may be required.

181 Class Piano I 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. For majors, minors, and elem educ majors only. By audition only. Pedal, sightreading, transposition, playing by ear, chord progressions and melody harmonization.

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 and theoretical knowledge.

251 Materials and Structures of Music I 3 By examination. Orchestration, melody, rhythm, intervals, tonality, modality, scales and modes, musical forms and sampling synthesis; topics include sequencing, waveforms, and creative projects.

252 Materials and Structures of Music II 3 Prereq Mus 151. Notation and performance of music fundamentals: melody, rhythm, scales, intervals, key signatures, triads; preparatory for Mus 251.

253 [H] Musical Style in Composition 3 Introduction to musical style in composition, history, and analysis including theory fundamentals, history survey, and beginner composition.

254 Applied Theory I 1 (0-3) By examination. Ear training, conducting, rhythmic reading, sight singing, keyboard, dictation.

255 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.

256 Applied Theory II 1 (0-3) Prereq c// in Mus 253. Ear training, sight singing, keyboard, dictation.

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.

259 Class Piano III 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Prereq Mus 182. By audition only. Principles, functional keyboard.

351 Materials and Structures of Music I 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 251. 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.

451 Seminar in Counterpoint 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 353. Counterpoint techniques of the 16th and 17th century with original stylistic writing.

452 Electronic Music 2 (1-3) Prereq Mus 353. Introduction to computer-controlled digital, analog, and sampling synthesis; topics include sequencing, waveform editing, and creative projects.

453 Form and Analysis 2 Prereq Mus 353. Organization of musical works according to the relationships in sectional divisions, thematic divisions, and tonal bases.

455 Seminar in Instrumentation 2 May be repeated for credit. Prereq Mus 352. Scoring for various instrumental combinations.

456 Seminar in Advanced Composition V 1-3 May be repeated for credit. Prereq upper-level composition review. Original writing in small and large forms (traditional and experimental).

457 Seminar in Jazz Improvisation/Composition 2 Prereq Mus 257. Arranging and composing for instrumental jazz ensembles.

459 Advanced Jazz Improvisation 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 258. Advanced concepts in jazz improvisation.

550 Seminar in Analysis 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 453 or c//. Required of all graduate students. Applications of analytical techniques to develop a basis for musical understanding and interpretation.

553 Seminar in Music Theory 2 May be repeated for credit; cumulative maximum 4 hours.

556 Graduate Seminar in Advanced Composition V 2 (1-2) or 3 (1-4) May be repeated for credit; cumulative maximum 10 hours. Prereq by interview only. The creation of works for either traditional acoustic ensembles or electro-acoustic media.

History and Literature

Mus

160 [H] Survey of Music Literature 3 Exploration of predominantly western music through demonstrations, performances, lectures, concerts, and discussions.

162 Introduction to Critical Studies in Music 3 Prereq Mus 152, 251, or c//. Historical styles of music through analytical listening, score examination and source materials.

163 [G] World Music 3 Exploration of music from a global perspective through demonstrations, performances, lectures and discussion.

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.


360 [H] History of Music I: Baroque and Classic Periods 3 Prereq Mus 161, 251, 252. Development and change in the musical culture of western Europe from 1600 to 1815.

361 [H] History of Music II: Romantic Period and the 20th Century 3 Prereq Mus 360. Development and change in the musical culture of western Europe and the U.S. from 1815 to the present.
486 Seminar in Major Performance Literature
2 May be repeated for credit; cumulative maximum 6 hours. Prereq Mus 351 or c/c. Survey/performance of solo and chamber literature for voice, keyboard, strings, winds, brass, percussion.

466 Seminar in Band Literature and Performance
1 May be repeated for credit; cumulative maximum 6 hours. Prereq Mus 153 or c/c. Survey/performance of music for elementary education majors. Prereq 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) Pedagogy methods course in voice; 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
2 (0-6) Prereq Mus 481. Brass, woodwind, and percussion techniques for music education majors.

494 Wind and Percussion Techniques
2 (0-6) Prereq Mus 483. Brass, woodwind and percussion techniques; elementary instrument conducting for music education majors.

497 Directed Student Teaching in Music
4 Prereq maintain 2.5 g.p.a. in primary, supporting, and professional education core courses; completion of all required courses. By interview only. Supervised teaching in public schools (full day, full semester), including a two-hour weekly seminar reflecting on effective teaching. S, F grading.

498 Piano Pedagogy Practicum
2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 486. Supervised teaching in Piano Preparatory Lab School, including lesson planning and meetings with coordinator for critiques and suggestions. S, F grading.

575 Advanced Conducting
2 or 3 May be repeated for credit. Prereq Mus 482. Rehearsing orchestras, bands, and choruses. Public performance may be required.

586 Seminar in Piano Pedagogy
2 Graduate-level counterpart of Mus 486; additional requirements. Credit not granted for both Mus 486 and 586.

588 Choral Methods and Materials I
1 (0-6) Prereq Mus 486; additional requirements. Credit not granted for both Mus 486 and 588.

589 Choral Methods and Materials II
2 Graduate-level counterpart of Mus 489; additional requirements. Credit not granted for both Mus 490 and 590.

591 Vocal Pedagogy
2 (1-3) Prereq graduate standing. Graduate-level counterpart of Mus 491; additional requirements. Credit not granted for both Mus 491 and 591.

Problems, Research, Recitals, and Thesis

496 Topics in Music
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.

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

522 Graduate Recital
2 May be repeated for credit; cumulative maximum 4 hours. Private screening and public performance as required within each performance emphasis.

596 Topics for Music
V 1-4 Varying subjects offered at graduate level.

597 Topics for Music
V 1-4 Varying subjects offered at graduate level.

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

700 Master’s Research, Thesis, and/or Examination
Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination
Variable credit. S, F grading.
324 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] [M] 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.

401 Dramaturgy 3 Prereq by interview only. Strategies for collaborating with directors, designers, and playwrights; investigating theatrical contexts; adapting and/or updating scripts; communicating effectively with audiences.

402 Production Analysis 1 (0-3) May be repeated for credit; cumulative maximum 6 hours. Analysis and comparison of theatre productions through discussion and written evaluation. Credit not granted for both Theat 402 and 502.

418 Topics—Study Abroad 3

419 Topics—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

460 Technical Theatre Management 3 Prereq Theat 163. Organization and management of theatrical productions; the role of the stage manager, backstage crew; 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. Cooperative course taught by WSU, open to UI students (ThA 381). Credit not granted for both Theat 464 and 564.

465 Dramatic Theory and Criticism 3 Prereq Theat 362, 363, 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.

468 [M] Theatre for Young Audiences 3 Prereq Theat 260. Study in evolution of dramatic literature and production demands for Theatre for Young Audiences (TYA). Credit not granted for both Theat 468 and 568.

470 Theory and Practice of Puppetry Arts 3 Prereq Theat 163. Puppetry arts with emphasis in drama, education, and therapy; practical and theoretical application. Credit not granted for both Theat 470 and 570.

471 Applied Puppetry Arts 2 (1-3) Prereq c/f in Theat 470 or 570. Applications of puppetry arts theory to specific emphasis: production, education, and therapy. Credit not granted for both Theat 471 and 571.

472 Drama Therapy 3 Prereq current knowledge in psychology/counseling therapy. Balanced theoretical and experiential approach toward understanding therapeutic applictions of drama and theatre. Credit not granted for both Theat 472 and 572.

480 Playwriting 3 Prereq Engl 351. Practical experience in the creative process of playwriting.

490 Internship in Professional Theatre 2-15 Prereq Theat 163, 264; 360 or 361; 362; 365 or 366. Off-campus experience with Seattle area professional theatres in all aspects of production excluding performance. S, F grading.

494 Acting: Rehearsal and Performance 1 V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. By interview only. Practical application of acting techniques during the production of plays.

496 Applied Theatre Studies 1 V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 12 hours. Practical application of acting, scenery construction and painting, costumes, properties, box office and other projects connected with University Theatre productions.

498 Repertory Theatre 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Rehearsal, performance and related technical and management work in Summer Palace Theatre.

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

501 Research Methods and Dramaturgy 3 Prereq graduate standing. Theory, methods, and practice of graduate-level research as applied to both scholarship and theatre productions.

502 Production Analysis 1 (0-3) May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of Theat 402; additional requirements. Credit not granted for both Theat 402 and 502.

504 Instructional Practicum 1 May be repeated for credit; cumulative maximum 4 hours. Instruction and guidance in teaching theatre arts and drama. S, F grading.

541 History of the Theatre I 3 Major developments of all aspects of theatre arts from preliterature times to 1650.

542 History of the Theatre II 3 Major developments of all aspects of theatre arts from 1650 to 1800.

561 Performance III: Directing 3 (0-6) Graduate-level counterpart of Theat 461; additional requirements. Credit not granted for both Theat 461 and 561.

564 Creative Drama 3 Prereq graduate standing. Graduate-level counterpart of Theat 464; additional requirements. Credit not granted for both Theat 464 and 564.

565 Seminar in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Seminar in various periods, movements, and phases of drama.

568 Theatre for Children and Youth 3 Prereq graduate standing. Graduate-level counterpart of Theat 468; additional requirements. Credit not granted for both Theat 468 and 568.

563 Scene Design: Art and Practice 3 (0-6) Prereq graduate standing. The art of scene design, conceptualization and actualization; design analysis, research, and technical skills needed to execute renderings and models.

570 Theory and Practice of Puppetry Arts 3 Prereq Theat 163. Graduate-level counterpart of Theat 470; additional requirements. Credit not granted for both Theat 470 and 570.

571 Applied Puppetry Arts 2 (1-3) Graduate-level counterpart of Theat 471; additional requirements. Credit not granted for both Theat 471 and 571.

572 Drama Therapy 3 Graduate-level counterpart of Theat 472; additional requirements. Credit not granted for both Theat 472 and 572.

590 Graduate Internship in Professional Theatre 2 V 1-15 Prereq Theat 501; completion of one academic year of master’s level course work in Theatre Arts and Drama at WSU. Internship position at upper levels of administration or production that requires expertise in specific areas; theories/practical application. S, F grading.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.
Department of Natural Resource Sciences


Natural resources are the ultimate basis for much of the environmental quality, social well being and economic success in the state of Washington and the world. Issues and concerns surrounding natural resources are of extraordinary importance as society strives to both sustain and balance the various ecological, socioeconomic and aesthetic values provided by natural resources and ecosystems. Given these facts, the Mission of the Department of Natural Resource Sciences at WSU is to advance and impart knowledge of ecosystems and natural resources, including their attributes and functions; their ecological and societal values; and their management in an ecologically, socially and economically sound, sustainable manner.

Our mission is pursued through programs in undergraduate and graduate education, basic and applied research, extension and continuing professional education. These programs: (1) promote stewardship of natural resources and ecological systems; (2) contribute to abundant and sustainable systems for food, fiber and other natural resource-derived products and values; and (3) promote the well-being and quality-of-life of resource-dependent communities and all other publics deriving or placing values on natural resources.

Our programs reflect and integrate the breadth of disciplines and professions comprising the natural resource sciences. Forestry, Range Management, Wildlife Ecology, Wildland Recreation Management are represented in the department, plus contributing 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.

Well-educated and motivated professionals are needed to provide answers to questions of sustainability and ecological diversity and meet the ever increasing demands for the many values and products supplied by the world’s natural resources. The educational programs and the diversity of the faculty of the department help students prepare to meet these needs. Our curricula feature not only traditional disciplines such as Forestry, Range Management, Wildlife Ecology and Wildland Recreation, but also provide opportunities in other areas such as: applied plant and animal ecology; conservation biology/biological diversity; wildlife/conservation biology; landscape ecology; urban ecology/resource management; wetland/aquatic resources; and social/political dimensions of natural resources.

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, range conservationists, wildlife biologists, park managers, information specialists, game managers, consultants, researchers, and in a variety of roles in developing countries. In addition, with further education our graduates are involved in environmental education in grade schools and high schools, in the legal profession, and in natural resource law enforcement.

At the undergraduate level, the Department offers a single undergraduate degree (B.S. in Natural Resource Sciences), with majors: (1) Forestry, (2) Wildlife Ecology, (3) Range Management, (4) Wildland Recreation Management and (5) Natural Resources. Each major provides opportunities for further specialization via specific Options or with course selection. Irrespective of Major/Option, all undergraduate students B.S. in Natural Resource Sciences take a common set of GE/GER’s and basic courses in biological, physical and social sciences, mathematics, communications and arts/humanities. Students also take a common core of natural resource science courses designed to provide breadth and integration among natural resource disciplines, and provide a holistic perspective in understanding and managing natural resources. Thereafter, greater and more specific educational depth is provided by required upper-division coursework within each Major and Option. In addition to reviewing the following sections, it is recommended that students interested in our curricula directly contact the department to obtain the most current information.

The structure of the undergraduate curriculum is such that it is very flexible (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 four disciplinary Minors (Forestry, Range Management, Wildland Recreation and Wildlife) available to all students, plus a fifth general Natural Resource Minor available to non-natural resource majors.

Student chapters of professional societies (Society of American Foresters, Society for Range Management, and The Wildlife Society) provide out of class opportunities for students to interact with each other socially and professionally and to interact 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 co-operative 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. Stefen Center; the Hudson Biological Reserve at Smoot Hill; the Kramer/Palouse Natural Area; the Ownby Herbarium; and the 12,000-acre Colosolium multiple-use area provide students with access to the facilities and technologies needed to develop competence in their chosen professions. These facilities and the close proximity of natural forest, rangeland and aquatic ecosystems to the Pullman campus provide significant opportunities for field and experiential learning to natural resource science students. For further information, visit http://coopext.cahe.wsu.edu/~nrs/.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GE/GER credits required.

All letter-graded courses specifically required for each degree program must be taken for letter grade (i.e., not pass, fail). This applies to all students in Natural Resource Sciences major and minor/option programs.

BACHELOR OF SCIENCE IN NATURAL RESOURCE SCIENCES

Students pursuing the BS in Natural Resource Sciences must major in one (or more) of five areas: forestry, range management, wildlife ecology, wildland recreation management and/or 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 planning. In addition, each major has a core of courses designed to meet the requirements of the discipline and/ or professional area represented by the major. Each major also includes options or course selections, which enable students to further specialize their education.

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 GE/GER’s, basic science requirements and natural resource core takes a core of forestry courses in such areas as forest measurements, silviculture, forest vegetation, harvesting, soils, watershed and range management. Each student also selects a professional option. The forestry options include Business Management, Forest Management, Forest Wildlife, 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 U.S. Office of Personnel Management for forester. The Forest Wildlife option produces forestry professionals sensitive to the needs of wildlife, who are able to bridge the gap between the traditional forester and the wildlife biologist. With careful selection of courses students in the Forest Wildlife option will meet the federal qualifications for wildlife biologist. With careful selection of courses students in the Forest Wildlife option will meet the federal qualifications for wildlife biologist. With careful selection of courses students in the Forest Wildlife option will meet the federal qualifications for wildlife biologist. With careful selection of courses students in the Forest Wildlife option will meet the federal qualifications for wildlife biologist.
FIRST AND SECOND YEAR REQUIREMENTS
The first two years are common to all forestry degree programs. Please consult your adviser about when courses are available since some courses are taught only once yearly or on alternate years:

Freshman Year
First Semester Hours
Biol 103 [B] (GER) 4
Chem 101 [F] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
NATRS 100 4
Stat 212 [N] (GER) 4

Second Semester Hours
Ag Ec 201 [S] or Econ 101 [S] (GER) 3
Biol 104 [B] or Bot 120 [B] (GER) 4
GenEd 110 [A] (GER) 3
Intercultural [L,G,K] (GER) 3
Math 107 4
NATRS 101 1

Sophomore Year
First Semester Hours
Degree Program Course 2 3
NATRS 204 2
NATRS 280 3
NATRS 300 4
NATRS 301 3

Second Semester Hours
GenEd 111 [A] (GER) 3
NATRS 302 [M] 3
NATRS 312 2
NATRS 313 3
NATRS 374 or SoilS 474 3
SoilS 201 3

1 For the Business Management option, take Econ 101.
2 For the Business Management option, choose from AgEc 230, B Law 210, Dec S 215, Dec S 340.
3 To be taken only by forestry wildlife students during this semester.

BUSINESS MANAGEMENT OPTION
(121 HOURS)  ✔FYDA

Junior Year
First Semester Hours
Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER) 3
NATRS 305 3
NATRS 311 3
NATRS 351 3
Complete Writing Portfolio

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
Forestry Elective 2 3
NATRS 410 or 420 (both required) 2 or 3
NATRS 438 [M] 3
Restricted Math Elective 1 3

Senior Year
First Semester Hours
Forestry Electives 3 6
NATRS 351 3
NATRS 418 2
NATRS 440 or ES/RP 486 3 or 4
NATRS 470 2

Second Semester Hours
Forestry Electives 3 6
NATRS 414 [M] 3
NATRS 420 or 410 (both required) 2 or 3
NATRS 460 3
Tier III Course (GER) 3

1 As approved by department, 12 additional credits required, 9 at the 300-400-level.
2 One from: Ag Ec 409; Math 140, 171, 202; Stat 410, 412, 422.
3Tier III Course (GER) 3

FORESTRY MANAGEMENT OPTION
(129 HOURS)  ✔FYDA

Junior Year
First Semester Hours
NATRS 280 4
NATRS 305 3
NATRS 311 3
NATRS 440 or ES/RP 486 3 or 4
NATRS 430 or 450 3

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER) 3
NATRS 331 or 348 and 349 2 2
NATRS 410 or 420 (both required) 3 or 2
NATRS 460 3
Restricted Math Elective 1 3 or 4

Senior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
NATRS 331 or 430 and 349 2 2
NATRS 414 [M] 3
NATRS 420 or 410 (both required) 2 or 3
NATRS 438 [M] 3
Tier III Course (GER) 3

Second Semester Hours
NATRS 430 or 450 3
NATRS 470 2

1 One of: Ag Ec 409; Math 140, 171, 202; or Stat 410, 412, 422.
### RANGE MANAGEMENT MAJOR (122 HOURS)

The Range Management major provides students with an understanding of the characteristics, resource values and function of rangeland ecosystems that provide food/habitat to wild and domestic herbivores plus a host of other environmental and socioeconomic benefits to society. Students are prepared to apply such understanding through a variety of professional careers in rangeland science and/or management. This major is fully accredited by the Society for Range Management.

In addition to university GER's, basic science courses and the natural resource common core, students in this major complete the range management core curriculum with courses in range management principles, measurements/remote sensing, soil science, watershed management, livestock management, and improvements in rangeland ecosystems. In addition, students are provided the opportunity to attain either greater breadth or more specialization in specific facets of range management through the Directed Studies option. In this option, students with their advisers select courses focusing upon particular aspects of rangeland ecology and/or management that correspond to their particular interests and educational/career goals.

#### Freshman Year

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<tr>
<th>First Semester</th>
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<tr>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 107</td>
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#### Sophomore Year

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<td>NATRS 301</td>
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<td>SoilS 201</td>
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<td>Engl 201 [W], H D 205 [C], or ComSt 102 [C]</td>
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<td>NATRS 302 [M]</td>
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<td>NATRS 312</td>
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<td>NATRS 374</td>
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#### Junior Year

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<td>NATRS 311</td>
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<td>NATRS 351</td>
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<td>NATRS 357 or 430 (both required)</td>
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<td>SoilS 451 [M]</td>
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<td>Complete Writing Portfolio</td>
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<td>Degree Program Course1</td>
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<td>NATRS 101</td>
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1 At least 10 credits of approved electives required approved by department, depending on student interest in either greater breadth or depth in subjects relevant to Range Management.

### WILDLIFE ECOLOGY MAJOR (120 HOURS) (FYDA)

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 both wildlife biology or wildlife management. The core requirements plus proper selection of approved wildlife electives may allow majors to meet the U.S. 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 individualize and often enhance their professional development by minoring in another subject such as communications, computer science, and other natural resource fields (forestry, range or wildlife recreation). 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 GER's, 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 principles, and natural resource interpretation. Each student selects and completes an option in management or animal systematics courses from Entom 343, Zool 412, 423, 428, 430; NATRS 417. For Directed Studies option, eleven to fourteen credits of department approved electives. For Pre-Vet option, Phys 101, Chem 240, MBioS 301 and 303 are required.

#### Freshman Year

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1 Chem 105 and 106 required for Pre-Vet option.

### WILDLAND RECREATION MANAGEMENT MAJOR

Wildland recreation management focuses upon recognizing, providing and perpetuating and improving recreational opportunities and values associated with natural environments. The Wildland Recreation curriculum is designed to impart understanding both of natural resources and of resource-based recreation principles/applications, and prepare students for careers in back-country/dispersed or front-country/concentrated recreation management with local/state/federal parks agencies or in the private sector.

In addition to university GER's, the basic science courses and the natural resource common core, students in this major complete the wildland recreation core courses such as soils/geology, recreation management principles and natural resource interpretation. Each student selects and completes an option in management or interpretation; or completes a minor in another related discipline such as business, environmental science, forestry, wildlife, criminal justice, or anthropology. To
provide an opportunity for in-depth study and analysis, each student completes a senior thesis in a subject area that corresponds to his/her professional interest.

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<td>Stat 212 [N] (GER)</td>
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### Sophomore Year

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<td>Ag Ec 201 [S] or Econ 101 [S] (GER)</td>
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<td>Intercultural [L,G,K] (GER)</td>
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<td>NATRS 371</td>
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### Junior Year

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<td>NATRS 471 or 472 [M] (both required)</td>
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<tr>
<td>Option Courses</td>
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<td>Tier III Course (GER)</td>
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<tr>
<td>Option Courses</td>
<td>3</td>
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</table>

### Transfer Students

Transfer students should plan to complete the basic required courses in English composition, chemistry, speech, biological sciences, mathematics, microeconomics, social sciences, and arts and humanities by the end of their sophomore year. Students may be granted credit for equivalent technical courses taken at other academic institutions. Refer to WSU Transfer Guides for Community Colleges, available through community college advisers and the Internet, for details.

### 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 M.S. in Natural Resource Sciences (thesis-based), M.S. in Natural Resources (non-thesis), and a Ph.D. in Environmental Science and Regional Planning program. 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

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1 Must be approved by department, to total 15-23 credits in a required option in one of the following areas: General Studies, Directed Studies, Natural Resource Policy, Natural Resource Social Science, Wetland/Aquatic Resources, Plant Resources (applied ecology or ecophysiology), Landscape Ecology, Fire Science/Management, Urban Ecology/Resource Management, and available at WSU-Vancouver only Environmental Horticulture. Lists of approved electives for each of these options are available from the Department. A ninth option, Directed Studies, allows students working with their advisers to select courses that either increase their general knowledge of natural resources, or focus upon an aspect of natural resource sciences not represented by the other eight options.

### Natural Resource Major

**(120 HOURS) FYIDA**

The Natural resource major is offered for students interested in biological, physical or socioeconomic aspects of natural sciences that extend beyond traditional disciplinary boundaries or which represent areas of specialization not encompassed by our other majors. This is also the most flexible of our majors, and hence offers exceptional opportunities for tailoring (in consultation with academic advisers) of courses/curricula to match individual student interests and needs within the realm of natural resource sciences.

In addition to university GER’s, basic science courses and the natural resource common core, students will complete a major core composed of a limited number of courses in the areas of soil science, conservation biology, ecology and social sciences. To provide an opportunity for in-depth study and analysis, each student will be required to complete a senior thesis, typically on a subject that corresponds to his/her area of primary interest. Based upon area of primary interest and in addition to the major core and senior thesis, each student also will complete one of nine available options composed of approved elective courses. Eight options are designed to provide specialization in specific areas of natural resource sciences, and include Natural Resource Policy, Natural Resource Social Science, Wetland/Aquatic Resources, Plant Resources, Landscape Ecology, Fire Science/Management, Urban Ecology/Resource Management, and available at WSU-Vancouver only Environmental Horticulture. Lists of approved electives for each of these options are available from the Department. A ninth option, Directed Studies, allows students working with their advisers to select courses that either increase their general knowledge of natural resources, or focus upon an aspect of natural resource sciences not represented by the other eight options.

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1 Must be approved by department, to total 15-23 credits in a required option in one of the following areas: General Studies, Directed Studies, Natural Resource Policy, Natural Resource Social Science, Wetland/Aquatic Resources, Landscape Ecology, Fire Science/Management, Plant Resources, or (at Vancouver only) Environmental Horticulture. Lists of approved electives for each of these options, which must include at least 9 credits of 300-400 level courses are available from the Department.

2 Must be approved by department.

### Transfer Students

Transfer students should plan to complete the basic required courses in English composition, chemistry, speech, biological sciences, mathematics, microeconomics, social sciences, and arts and humanities by the end of their sophomore year. Students may be granted credit for equivalent technical courses taken at other academic institutions. Refer to WSU Transfer Guides for Community Colleges, available through community college advisers and the Internet, for details.

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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 M.S. in Natural Resource Sciences (thesis-based), M.S. in Natural Resources (non-thesis), and a Ph.D. in Environmental Science and Regional Planning program. 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 adviser. 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.

MINORS IN FORESTRY, RANGE, WILDLAND RECREATION, WILDLIFE AND NATURAL RESOURCES

Four minors (forestry, range, wildland recreation and wildlife) are available both to students majoring in other natural resource fields and to students in other degree programs at WSU. A fifth, broader minor in natural resources is designed to serve the needs of students who are not matriculated in a natural resource degree program/major at WSU (and can be taken only by non-natural resource science majors). Requirements for these minors are listed below:

Forestry: minimum of 16 credit hours. Required courses: NATRS 204, 301, 305. Restricted electives: at least 8 credit hours selected from NATRS 331, 348, 406, 420, 430, 460.

Range: minimum of 18 credit hours. Required courses: NATRS 301, 302, 351, Soils 201. Restricted electives: at least 6 credit hours selected from NATRS 452, 453, 457, 460, 480.

Wildland Recreation: minimum of 18 credit hours. Required courses: NATRS 371, 373, 470, 471, 472. Restricted electives: at least 4 credit hours selected from NATRS 312, 438, 460, 474, 487.

Wildlife: minimum of 19 credit hours. Required courses: NATRS 280, 435. Restricted electives: at least 11 credit hours from NATRS 340, 406, 429, 431, 436, 450, 460, 480; no more than one from Zool 423, 428, 430.

Natural Resources: minimum of 16 credit hours of courses approved by department. For non-NATRS majors only. Required courses: at least 9 credit hours of NATRS courses, as least 9 credit hours of courses numbered 300 or higher, and at least one course in each of the following areas (three courses total); individual courses may be used to satisfy only one area: 1) Basic Principles of Natural Resource Sciences/Management: Recommended Electives: NATRS 100, 101, 303; others upon departmental approval; 2) Socioeconomic Aspects of Natural Resource Sciences/Management: Recommended Electives: NATRS 303, 311, 312, 403, 419, 438; others upon departmental approval; 3) Ecological Aspects of Natural Resource Sciences/Management: Recommended Electives: NATRS 280, 301, 302, 303, 351, 371, 419, 450, 460, 470; others upon departmental approval.

Description of Courses

Natural Resource Sciences

NATRS

100 Introduction to Natural Resource Management I 1 Nature and significance of natural resources; types of renewable natural resource systems; goals and principles of natural resource management.

101 Introduction to Natural Resource Management II 1 Professional fields of natural resource management. Field trip required.

204 Introduction to Measurements and Computers in Natural Resources 2 (1-3) Prereq Math 107, sophomore standing. Introduction to basic concepts, field techniques and the use of spreadsheet in natural resources. Field trips required.

280 Introductory Wildlife Management I 4 (3-3) Prereq Biol 104 or Bot 120. An introductory course in the principles of wildlife management. Field trip required.

300 Natural Resource Ecology 4 (3-3) Prereq Biol 103, Biol 104 or Bot 120. Ecology as applied to management of natural resource ecosystems; biological diversity; conservation biology; global climate change in natural resource ecology. Field trips required.

301 Forest and Range Plant Resources I 3 (2-3) Prereq Biol 104 or Bot 120. Identification and ecology of important forest and range plants with emphasis on woody plants; attributes significant to vegetation management. Field trips required.

302 [M] Forest and Range Plant Resources II 3 (2-3) Prereq NATRS 301. Identification and ecology of important forest and range plants with emphasis on herbaceous plants; attributes significant to vegetation management. Field trips required.

303 [B] Conservation of Renewable Resources 3 (2-3) Prereq completion of Tier I science requirement. A series of case studies of international natural resource conservation issues that emphasizes ecological concepts and human decision making. Cooperative course taught by WSU, open to UI students (for 306).

304 Forest and Range Biology 3 Prereq Biol 372 or NATRS 300; NATRS 302 or c/. Structure and functions of forest and range plants; influence of biotic and environmental factors on plant and stand growth.

305 Silviculture 3 Prereq NATRS 204, 300, 302. Stand dynamics, natural regeneration methods, intermediate stand treatment, relationships of natural resource management to silvicultural practice. Field trips required.

311 Natural Resource Economics 3 Same as Ag Ec 311.

312 Natural Resources and Society 2 Prereq NATRS 100; junior standing. Social views of natural resources, processes by which these views are developed and expressed, social conflict over natural resources.

313 Forest Measurements 2 (1-3) Prereq NATRS 204. Theory and application of forest measurements. Field trips required. Cooperative course taught jointly by WSU and UI (for 374).

320 Timber Harvesting 3 Prereq NATRS 204. Current practices and problems; planning and coordinating timber harvesting with forest management. Field trips required. Cooperative course taught by UI (for Pol 430), open to WSU students.

321 Introduction to Wood Technology 3 Prereq Biol 103. 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 (for Pol 277), open to WSU students.

331 Forest Pathology 2 (0-6) 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 Entom 343. Principles and practice of forest pest management; web-based course.

351 Principles of Range Management 3 Prereq NATRS 301. Basic concepts in range management; range history; physiology of range productivity and utilization; grazing management; range improvements. Field trip required.

353 Forest and Range Plant Identification Laboratory 1 (0-3) May be repeated for credit; cumulative maximum 6 hours. Identification, forage value, and habitats of North American range plants.

357 Rangeland and Riparian Habitat Assessment 3 (2-3) Prereq NATRS 204 or 351, statistics course, or by interview only. Theory and application of rangeland ecosystem measurements. Methods for inventory and monitoring of upland and riparian rangeland communities; basic sampling techniques used for measuring vegetation attributes and assessing production utilization for management purposes. Field trip required. Cooperative course taught jointly by WSU and UI (Rng 357).

371 Foundations in Resource Rec-Tourism 3 Prereq junior standing. Historic development; benefits; federal, state, and local involvement; current problems and trends in the field of wildlife recreation. Cooperative course taught by UI (RR/T 287), open to WSU students.

372 Wildlife Recreation Field Laboratory 1 (0-3) Prereq NATRS 371 or c/. Field observation of recreation practices. Field trips required.

373 Environmental Interpretive Methods 3 Prereq NATRS 371. Introduction to environmental interpretation; communication psychology and media applied to noncaptive audiences in leisure and natural resource settings. Cooperative course taught by UI (RRT 387), open to WSU students.

374 Remote Sensing and Airphoto Interpretation 3 Same as Soil 374.

385 Resource Recreation and Tourism Management 3 Prereq RRT 287, 310, 311, or by permission only. Comprehensive intro to theory, processes, techniques for managing natural resource recreation and tourism systems; tourists, resource attraction, and program management strategies demonstrating budgeting, contracting, and human resource management stressed. Cooperative course taught by UI (RR 385), open to WSU students.

407 Forest Populations 1 Prereq enrollment in CEFES Program. Concepts of genetics, population dynamics and pest management applied to forest management.

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. Credit not granted for both NATRS 410 and 510.

413 Forest Nursery Management 2 Forest nursery design; seed processing and quality; nursery equipment and cultural practices; seedling quality. Field trips required. Credit not granted for both NATRS 413 and 513. Cooperative course taught by UI (for 413/513), open to WSU students.

414 [M] Ecosystem Surveys and Inventories 3 (2-3) Prereq Decl 3215, Stat 212 or 412; NATRS 313 or 357. The application of sampling theory in natural resource inventories and surveys.

416 Principles of Fisheries Management 4 (3-3) Application of principles toward managing recreational and commercial aquatic resources. Field trips required. Cooperative course taught jointly by WSU and UI (Fish 418).

417 Special Topics 1-3 May be repeated for credit; cumulative maximum 6 hours.
418 Forest Growth and Yield 2 Prereq Dec S 215, Stat 212, or 412. Factors influencing forest yields, traditional prediction methods; development and application of growth and yield simulators. Credit not granted for both NATRS 418 and 518.

419 Topics in Natural Resource Sciences V-1-3 May be repeated for credit; cumulative maximum 9 hours. Topical issues in natural resource sciences.

420 Wood and Wood Products 2 Prereq NATRS 204. Wood science and its role in the manufacture and marketing of forest products.

421 Fish Health Management 3 (2-3) Prereq MBioS 101. Epidemiology, prevention, diagnostics, and treatment of infectious and non-infectious diseases of free-living and confined fish and shellfish. Cooperative course taught by UI (Fish 424), open to WSU students.

422 Tropical Forestry 3 (2-3) Distribution, physiognomy and climate of world tropical and subtropical vegetation types. Credit not granted for both NATRS 422 and 522. Cooperative course taught by UI (For 420), 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 Aquaculture and Fish Health 4 (3-3) Prereq MMB 250, Fish 411. Concepts and methods of extensive and intensive aquaculture; emphasis on epidemiology, diagnosis, and prevention of infectious and non-infectious diseases of fish. Cooperative course taught by UI (Fish 419), open to WSU students.

428 Resolving Environmental Conflicts 4 (3-3) Same as R 435. Credit not granted for both NATRS 428 and 528.

430 Introduction to Wildland Fire 3 Prereq NATRS 300. Physical nature and behavior of wildland fire; the forest environment; fire ecology; practice of wildland fire management. Field trip required.

431 Wildlife Nutrition 3 (2-3) Nutritional requirements and interactions of wildlife populations. Credit not granted for both NATRS 431 and 531. Cooperative course taught by WSU, open to UI students (WLF 431).

432 Low-volume Forest Roads 3 Prereq NATRS 320. Road classification; design of forest roads; construction techniques; costing, environmental considerations, design project. Three days of field trips. Cooperative course taught by UI (ForP 432), open to WSU students.

433 Forest Tractor System Analysis 3 Prereq NATRS 320. Planning, layout, and cost analysis of forest tractor systems, production estimating, machine capabilities, and options; layout project. Three days of field trips. Cooperative course taught by UI (ForP 433), open to WSU students.

434 Cable Systems Analysis 3 Prereq NATRS 320. Layout, planning, and design for cable logging systems; analysis of forces involved in cable logging; crew and terrain requirements; layout and design project; cost and equipment analysis. Three one-day field trips. Cooperative course taught by UI (ForP 434), open to WSU students.

435 Resolving Environmental Conflicts 4 (3-3) Same as R 435.


437 Wildland Fire Management Laboratory 1 (0-3) Prereq NATRS 430. Wildland fire combustion; fire behavior; fuel evaluation; fire effects; application to fire management. Field trips required. Credit not granted for both 437 and 537.

438 [M] Natural Resource Policy and Administration 3 (2-2) Prereq NATRS 312, residency for standing, development, content, and implementation of federal public land and natural resource policies emphasizing forest, range, wildlife, and wildland recreation. Credit not granted for both NATRS 438 and 538.

439 Production and Cost Control in Forest Industry 3 Prereq NATRS 420. Introduction to production planning and cost control for timber harvesting and forest products processing operations; development and application of machine rates and system production rates; break-even analysis; machine replacement; cash flow in investment decisions; use of microcomputers in analysis. Cooperative course taught by UI (ForP 431), open to WSU students.

440 Integrated Forest Management Models 3 (2-3) Prereq NATRS 313; 410 or 510. Mathematical programming techniques for decisions in forest planning; coordinate site projects, area analysis, strategic forest plans, and regional forest resource policies. Credit not granted for both NATRS 440 and 540. Cooperative course taught by UI (ForP 447), open to WSU students.

441 Population Ecology and Conservation 4 (3-3) Prereq Biol 104, NATRS 300 or Biol 372, NATRS 280, 435, or by permission only. Course focusing on ecology, conservation, management of vertebrate populations, especially threatened and endangered species; designed for wildlife and conservation biology majors.

444 Nongame Management 2 Same as Zool 445.

450 [M] Conservation Biology 3 Prereq by interview only. Patterns of biological diversity; factors producing changes in diversity; values of diversity; management principles applied to small populations; protected areas; landscape linkages; biotic integrity; restoration, legal issues and funding sources. Credit not granted for both NATRS 450 and 550. Cooperative course taught jointly by WSU and UI (WLF 440).

452 Range Development and Improvements 3 (2-3) Prereq BioL 104, NATRS 300 or Biol 372. Managing rangeland forage resources; ecological considerations, plant control, seeding, fertilization, fire, facilitating animal use. Field trips required. Credit not granted for both NATRS 452 and 552.

453 Range Livestock Management 3 Rec NATRS 351. Range livestock management, nutrition and behavior; plant responses to grazing; grazing systems; stocking variables. Field trips required. Credit not granted for both NATRS 453 and 553.

459 Rangeland Ecology 3 Prereq NATRS 302. Application of ecological principles in rangeland management; stressing response and behavior of range ecosystems to various kinds and intensities of disturbance and management practice. Field trips required. Cooperative course taught by UI (Rng 459), open to WSU students.

460 Watershed Management 3 Prereq NATRS 204, completion of department requirement in Biol, Chem, and Ph S, Math and Stat; or by interview only. 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.

461 [M] Limnology and Aquatic Ecosystem Management 3 (2-3) Prereq Biol 102 or Bot 120; Chem 101. Introduction to the science and management of aquatic ecosystems, emphasizing lakes.

470 Topics in Resource Planning 2 Prereq senior year/permission of instructor. Topics span all aspects of resource planning on federal, state, industrial/non-industrial private forest and range lands in Pacific Northwest region.

471 Wildland Recreation Management 3 (2-3) Prereq NATRS 371. Planning and management techniques applied to wildland recreation problems and situations. Field trips required. Credit not granted for both NATRS 471 and 571.


473 Interpretive Methods Lab 3 Prereq NATRS 373. Development and application of interpretive materials and techniques; concentration on equipment and methods commonly used by natural resource agencies for communicating management programs and interpreting natural environments to visitors. Field trip required. Cooperative course taught by UI (RRT 488), open to WSU students.


475 Management of Recreation Sites and Leisure Settings 2 Introduction to theory, processes, and techniques for managing natural resource-based recreation and tourism sites; emphasis on site impacts and their management, visitor/customer management, liability and risk management, and the proper care of landscape trees and other amenity resources. Field trips required. Cooperative course taught by UI (RRT 484), open to WSU students.

476 Field Environmental Education 3 Concept and techniques of environmental education with emphasis on application at camps, parks, and similar recreation and tourism informal settings. Field trips required. Cooperative course taught by UI (RRT 487), open to WSU students.

477 Public Involvement in Natural Resource Management 3 Theoretical and applied concepts of public involvement in both public and private sectors of natural resource management; historical and legal mandates, government agency responsibilities, applied methods and techniques, case studies, and practical experience. Field trips required. Cooperative course taught by UI (RRT 486), open to WSU students.

479 Natural Resource Management Internship V 2-12. An elective opportunity for select students to supplement their academic training with practical field experience.

480 Big Game Range Management 3 Prereq NATRS 301. Big game habitat management on rangelands and forested ranges; big game habitat rehabilitation. Field trip required. Credit not granted for both NATRS 480 and 580.
Aquatic Ecosystem Assessment Methods for Environmental and Natural Resource Sciences 3 (1-6)
Prereq NATRS 460, Zool 310, 411. Integrating structural and geomorphic analyses, biologic indicators, water quality, and community-level indices into assessments of plant and animal system health and biotic integrity.


Wildlife Science Internship V 2-6 May be repeated for credit; cumulative maximum 12 hours. A cooperative internship with wildlife agencies. S, F grading.

Integrated Field Studies 2 (1-3) Prereq NATRS 204, 302, 374, junior standing. Two-week field course at the end of spring semester to emphasize interdisciplinary studies of natural resource management.

Wilderness Management 3 Prereq NATRS 371. Philosophical, historical, and legal background of wilderness management problems and ecological/sociological approaches to their solution, issues, and current research. Cooperative course taught by UI (RRT 490), open to WSU students.

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

Agroforestry Systems 2 Prereq NATRS 304. Agroforestry systems used in the world including their current use in developing countries. Cooperative course taught by UI (RRT 490), open to WSU students.

Forest Finance and Valuation 3 Graduate-level counterpart of NATRS 410; additional requirements. Credit not granted for both NATRS 410 and 510.

Integrated Forest Resource Economics 2 Microeconomic theory of forest resource production and supply; valuing non-commodity and intangible forest resources; optimizing jointly produced resources; hierarchical decision analysis, case studies and policy evaluation. Cooperative course taught by UI (RRT 490), open to WSU students.

Forest Nursery Management 2 Graduate-level counterpart of NATRS 413; additional requirements. Credit not granted for both NATRS 413 and 513. Cooperative course taught by UI (RRT 490), open to WSU students.

Advanced Forest Mensuration 1 Prereq enrollment in CEFES program. Evaluation of forest growth and yield in forest ecosystem management.

Forest Growth and Yield 2 Graduate-level counterpart of NATRS 418; additional requirements. Credit not granted for both NATRS 418 and 518.

Advanced Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

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.

Tropical Dendrology and Ecology 3 (2-3) Graduate-level counterpart of NATRS 422; additional requirements. Credit not granted for both NATRS 422 and 522. Cooperative course taught by UI (RRT 490), open to WSU students.

Plant Antecology 3 Prereq course in ecology or plant physiology. Quantitative aspects of individual species in rangeland and forest communities; emphasizing morphological and physiological mechanisms that influence plant establishment, below- and above-ground productivity, plant competition, and grazing sensitivity. Field trips required. Cooperative course taught by UI (RRT 500), open to WSU students.

Experimental Plant Ecology 3 (1-6) 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 (RRT 525).


Forest Genetics and Breeding 3 Prereq graduate standing. Genetic principles applied to forest ecosystems management; origin and function of genetic diversity; implications of silvicultural practices on gene pools. Field trips required. Cooperative course taught by UI (RRT 528), open to WSU students.

Resolving Environmental Conflicts 4 (3-3) Same as R 535. Graduate-level counterpart of NATRS 428; additional requirements. Credit not granted for both NATRS 428 and 528.

Principles of Population Dynamics 1 Prereq general ecology. Development of the theory of population dynamics from Mathus to the present.

Wildlife Nutrition 3 (2-3) Graduate-level counterpart of NATRS 431; additional requirements. Credit not granted for both NATRS 431 and 531. Cooperative course taught by UI (WLF 531), open to UI students.

Wildlife Ecology 4 (3-3) Graduate-level counterpart of NATRS 435; additional requirements. Credit not granted for both NATRS 435 and 535.

Advanced Wildlife Management 4 (3-3) Graduate-level counterpart of NATRS 436; additional requirements. Credit not granted for both NATRS 436 and 536.

Wildland Fire Management Laboratory 1 (0-3) Graduate-level counterpart of NATRS 437; additional requirements. Credit not granted for both NATRS 437 and 537.

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.

Integrated Forest Management Models 3 (2-3) Graduate-level counterpart of NATRS 440; additional requirements. Credit not granted for both NATRS 440 and 540.

Population Ecology and Conservation 4 (3-3) Prereq graduate standing. Graduate-level counterpart of NATRS 441; additional requirements. Credit not granted for both NATRS 441 and 541.

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.

Upland Game Ecology 2 Prereq NATRS 435. Ecology and management of wildlife species using forest and rangeland habitats; current management problems and procedures. Cooperative course taught by UI (WLF 546), open to WSU students.

Predator Ecology and Management 2 Ecology of predators and predator-prey systems with emphasis on mammalian species, discussion of predation theory and contributions of field studies to understanding the role of predation in natural and altered communities; human-predator conflicts and resolution. One three-day field trip required. Cooperative course taught by UI (WLF 547), open to WSU students.

Conservation Biology 3 Graduate-level counterpart of NATRS 450; additional requirements. Credit not granted for both NATRS 450 and 550.


Range Development and Improvements 3 (2-3) Graduate-level counterpart of NATRS 452; additional requirements. Credit not granted for both NATRS 452 and 552.

Range Livestock Management 3 Graduate-level counterpart of NATRS 453; additional requirements. Credit not granted for both NATRS 453 and 553.

Restoration Ecology 2 Prereq NATRS 302. Restoration of disturbed or damaged ecosystems; fundamental principles from stress physiology and community ecology; review of case studies. Cooperative course taught by UI (WLF 552), open to WSU students.

International Resource Management Seminar 3 May be repeated for credit; cumulative maximum 9 hours. An issues-centered analysis of natural resource management in global context. Cooperative course taught by WSU, open to UI students (RRT 554).

Foraging Ecology of Herbivores 3 Prereq graduate student or by permission. Synthesis of foraging behavior concepts including nutritive quality of forages, digestive and metabolic constraints, and diet and habitat selection. Cooperative course taught jointly by WSU and UI (RRT 556).

Advanced Topics in Range Management V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq NATRS 452. Review of current literature and its application in range management.

Watershed Management 3 Graduate-level counterpart of NATRS 460; additional requirements. Credit not granted for both NATRS 460 and 560.

Wildland Recreation Management 3 (2-3) Graduate-level counterpart of NATRS 471; additional requirements. Credit not granted for both NATRS 471 and 571.

Dispersed Recreation Management 3 (2-3) Graduate-level counterpart of NATRS 472; additional requirements. Credit not granted for both NATRS 472 and 572.

Managing Public Use of Wildland Recreation Settings 3 Graduate-level counterpart of NATRS 474; additional requirements. Credit not granted for both NATRS 474 and 574.
575 Advanced Remote Sensing 3 (1–4) Same as SoILS 574.
580 Big Game Range Management 3 Graduate-level counterpart of NATRS 480; additional requirements. Credit not granted for both NATRS 480 and 580.
588 Advanced Topics in Wildlife 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, FW, Rnge, and RRTT 505).
593 Special Topics Seminar 1 May be repeated for credit. Prereq 20 hours NATRS. Literature and problems.
594 Environmental and Natural Resources Issues and Ethics 3 Prereq senior standing. May be repeated for credit; cumulative maximum 7 hours. Ethical systems applied to natural resources; issues of professionalism and ethics in natural resource management. Cooperative course taught by WSU, open to UI students.
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.

Naval Science Program

Professor of Naval Science; Capt. Sowa, Cdr Jaszkowski, Lt Farrens, Lt Kowal.

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 commissioned 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 science textbooks at no cost and begin receiving a monthly stipend of $200 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 they have 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 at-sea 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, books, and a $200 a month stipend.

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 at-sea 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 (ICNE) 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.

Description of Courses

Naval Science

N S

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 ships; nuclear and conventional power. Cooperative course taught by UI (NS 102), open to WSU students.

201 Ships Systems II 3 Naval weapons: ballistics, control, propulsion, components, systems analysis. Cooperative course taught by UI (NS 201), open to WSU students.

202 Seapower and Maritime Affairs 2 U.S. 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 naval road. Cooperative course taught by UI (NS 302), open to WSU students.

311 Evolution of Warfare 3 Rec NS 101, 202. Evolution of war through tactics; strategy from Sun Tzu to J.F.C. Fuller. Cooperative course taught by UI (NS 311), open to WSU students.

401 Naval Organization and Management 2 Theories of management and management resources, motivational theories and leadership. Cooperative course taught by UI (NS 401), open to WSU students.

402 Naval Leadership 2 Rec NS 3 401. 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 Mayaguez. Cooperative course taught by UI (NS 412), open to WSU students.

419 Team Building? By interview only. Practical application of leadership and management techniques through athletics. Cooperative course taught by UI (NS 499), 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.
Students may certify in Neuroscience after completing a minimum of 24 semester hours with a 3.0 minimum g.p.a., 18 hours from Biol 103, 104, Chem 105, 106, Math 140 or 171, Phys 101, 102. No minimum g.p.a. is required for Neuro 201 or 301.

**NEUROSCIENCE (120 HOURS)**

**Freshman Year**

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**Sophomore Year**

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**Junior Year**

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<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>Neuro 403 [M]</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td>Psych 312</td>
<td>4</td>
<td></td>
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<tr>
<td></td>
<td>Electives (consult adviser)</td>
<td>3</td>
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<tr>
<td>Second Semester</td>
<td>Neuro 404</td>
<td>3</td>
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<tr>
<td></td>
<td>Neuro Electives and/or Neuro 495, 499</td>
<td>9</td>
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<td>Tier III Course (GER)</td>
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**Senior Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MBioS 310</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cpt S 350²</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E E 314³</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zool 353</td>
<td>4</td>
<td></td>
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<tr>
<td>Second Semester</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td>MBioS 310</td>
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<tr>
<td></td>
<td>Cpt S 350²</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E E 314³</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zool 353</td>
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**COMPUTATIONAL NEUROSCIENCE (133 HOURS)**

<table>
<thead>
<tr>
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<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Freshman Year</td>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
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</tr>
<tr>
<td></td>
<td>Engl 101 [W] (GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
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<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Cpt S 350²</td>
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<td></td>
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<tr>
<td>Math 171 [N] (GER)</td>
<td>3</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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</tbody>
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**Sophomore Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecn 101 [S] or 102 [S] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Math 273</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
<td>4</td>
<td></td>
</tr>
</tbody>
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**Junior Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 104 [B] (GER)</td>
<td>4</td>
<td></td>
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<tr>
<td>Cpt S 350²</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Math 220</td>
<td>2</td>
<td></td>
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<tr>
<td>Math 315</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Phys 202 [P] (GER)</td>
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</table>

**Senior Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSys 339</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>E E 214³</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>E E 261/262³</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Math 360</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MBioS 303</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Neuro 301</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**MINOR IN NEUROSCIENCE**

A minor in neuroscience requires a minimum of 16 semester hours in Neuro, at least 13 of which must be at or above the 300-level. The minor must include Neuro 301 and...
at least two of the following courses: Neuro 403, 404, and 430. The minor must include at least three credits and up to five credits of Neuro 495 or 499. Students minoring in Neuroscience may include 500-level courses in their minor program, provided they obtain the consent of the faculty teaching the course, prior to registration. Additional courses acceptable for satisfying the minor are Neuro 406, 436, 506, 513, 526, 528, 529, 530, 534, 537, 538, 543, and 579.

Transfer Students
Transfer students must satisfy the program requirements for graduation. Science courses taken at other institutions will be evaluated and credits accepted where possible. Inquiries should be directed to the program coordinator.

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 grade point average of 3.0 (A=4.0) on the basis of the last 60 graded semester hours or 90 graded quarter hours of undergraduate study or on the basic science portion (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 preliminary exam.

Applications for admission to the program must include GRE scores, transcripts for all college-level work, three letters of recommendation, and a description of career objectives. For students whose native language is not English, TOEFL scores are also required. Applications and inquiries should be directed to the Program in Neuroscience, Department of VCAPP, Washington State University, Pullman, WA 99164-6520 or email grad_neuro@vetmed.wsu.edu.

Description of Courses

Neuroscience

Neuro

138 Freshman Special Topics 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

201 The Brain and Society 3 Introductory neuroscience for non-majors; exploration of neuro-science-related topics of societal importance from an integrated neuroanatomical, biochemi-cal, and behavioral perspective.

301 Exploring the Brain 3 Structure and function of the nervous system from single neurons to behavior.

403 [M] Cellular Neurobiology 3 Prereq MBioS 303, Neuro 301, or by interview only. Cellular and molecular interactions occurring within the nervous system.

404 Neuroanatomy 3 (2-3) Prereq Neuro 301, or by interview only. Fundamental principles of the organization and plans of circuitry of the nervous system.

405 [M] Neuroscience of Behavior 3 Prereq Neuro 301, or by interview only. Neural control of feeding and drinking behavior, sociosexual behavior, sleep behavior, and learning and memory.

406 [M] Neuroscience Research Techniques 3 (2-5) Prereq Neuro 301, or by interview only. Historical development, theory and technical bases for contemporary laboratory methods in the neurosciences.

430 [M] Principles of Neurophysiology 3 Prereq Neuro 301, or by interview only. Advanced exploration of the principles underlying cellular, sensory, motor and integrative functions of the nervous system.

436 Fundamentals of Synaptic Organization 3 Descriptions of how different circuits in the brain execute normal and pathological fundamentals.

461 Neurobiology 3 Prereq Phys 101; Biol 201; Chem 240 recommended. Study of the nervous system, with an emphasis on the basic mechanisms of neuronal signaling, the function of sensory systems, and neural development. Cooperative course taught by UI (Zool 461), open to WSU students.

464 Integrative Neural-Endocrine Function 3 Maintenance of homeostasis by coordinated neural and endocrine control.

495 Directed Research V 1 (0-3) to 3 (0-9) Prereq Neuro 301; certified major. May be repeated for credit. Introduction to neuroscience laboratory research and literature.

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

501 Fundamentals of Graduate Research in the Life Sciences 1 Same as V Ph 501.

502 Faculty Research in Pharmacology/Toxicology 1 Same as P/T 502.

504 Principles of Pharmacology 1 2 Same as P/T 506.

505 Principles and Methods of Toxicology 3 Same as P/T 505.

506 Generation, Degeneration, Regeneration in the Nervous System 2 Same as Zool 506.

507 Principles of Therapeutics 3 Same as P/T 507.

513 Advanced Neuroanatomy 3 Same as V An 513.

520 Functional Neurosurgery 4 (3-3) Prereq instructor permission or graduate standing. Functional aspects of the brain from cell membrane to higher integrative processes.

521 Mammalian Neuroscience 3 (2-3) Same as V M 521P.

526 Domestic and Exotic Animal Behavior 2 (1-3) Same as V M 526P.

528 Behavioral Mechanisms in Physiology 3 Same as V Ph 528.

529 Cellular and Molecular Neurobiology 3 Same as V Ph 529.

530 General and Comparative Neurophysiology 4 Neural function in vertebrates and invertebrates from the molecular to the behavioral level; emphasis on electrophysiology. Cooperative course taught by WSU, open to UI students (Zool 530).

531 Neuroscience Laboratory Rotation 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Same as V Ph 531.

534 Advanced Neurophysiology 3 Same as V Ph 534.

537 Physiology and Biochemistry of Neuropeptides 3 Same as V Ph 537.

538 Neuroendocrinology 3 Same as V Ph 538.

539 Research Topics in Neuroscience 2 May be repeated for credit; cumulative maximum 6 hours. Concepts and controversies within a specific and highly focused domain of neuroscience.

540 Special Topics in Integrative Neuroscience 3 May be repeated for credit; cumulative maximum 6 hours. Concepts and controversies in neuroscience involving integrative properties of cell systems.

541 Special Topics in Cellular and Molecular Neuroscience 3 May be repeated; cumulative maximum 6 hours. Concepts and controversies in neuroscience that involve nerve cell function and regulation.

542 Special Topics in Disciplinary Neuroscience 3 May be repeated; cumulative maximum 6 hours. Concepts and controversies in neuroscience that revolve around traditional approaches to nervous system study.

543 Special Topics in Behavioral/Clinical Neuroscience 3 May be repeated for credit; cumulative maximum 6 hours. Concepts and controversies in neuroscience that involve normal and pathological aspects of behavior.

544 Neurobiology of Drug Abuse 3 Prereq 300-400-level or graduate-level general pharmacology. Impact of drugs of abuse on the central nervous system, with emphasis on neurobiological mechanisms of addiction. Cooperative course taught by WSU, open to UI students (Zool 544).

545 Experimental Design 1 (0-2) May be repeated for credit; cumulative maximum 6 hours. Interpretation of experimental results as the outcome of hypothesis testing and specific results to general ex-planatory concepts of neuroscience. S, F grading.

561 Receptorology 2 Same as P/T 561.

564 Brain-Endocrine Interaction 3 Same as V Ph 564.

574 Physiological Psychology 3 Same as Psych 574.

577 Behavioral Pharmacology 3 Same as Psych 577.

579 Behavioral Neuroscience 3 Same as Psych 579.

584 Sensory Bases of Behavior 3 Same as Psych 584.

586 Seminar in Physiological/Sensory Psychology 3 Same as Psych 586.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

College of Nursing/Intercollegiate Collge of Nursing

Professor and Dean, D. Dellor; Professor and Associate Dean for Academic Affairs, A. Hirsch; Professor and Associate Dean for Instructional Resources and Extended College Activities, C. Clark; Professor and Associate Dean for Research, M. Haberman; Professors, M. Bruya, Z. Higgs, J. Thiele; Associate Professors, M. Armstrong, J. Banasik, T. Bayne, R. Binder, K. Busch, R.

**Baccalaureate Program**

The Intercollegiate College of Nursing was established July 1, 1968 and exists as a joint endeavor of Washington State University, Eastern Washington University, Gonzaga University and Whitworth College. Its cooperative undergraduate program is the first of its kind among colleges and universities in the United States.

The program is designed for two types of students, those with no previous preparation in nursing and registered nurses. The curriculum is four academic years of full-time study for the student with no previous preparation in nursing. The length of the program for the registered nurse (RN) is approximately one year of full-time study.

The lower-division courses, for students with no previous preparation in nursing (freshman and sophomore years), are offered on the Pullman campus. They provide the student with a foundation in the natural and social sciences and humanities.

The 300-400-level courses, junior and senior years, are offered at the Intercolligate College of Nursing in Spokane 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 leads to the degree of Bachelor of Science in Nursing. It is approved by the Washington State Board of Nursing 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 adviser 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 advisers on the Pullman, WSU Tri-Cities and WSU Vancouver campuses.

**Master of Nursing Program**

The Graduate Program in Nursing at the Intercolligate College of Nursing was established in 1983 and has been accredited by the National League for Nursing (NLN) since 1986 and approved 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 g.p.a., (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.

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 adviser are provided by the Graduate Program Office at the Intercollegiate College of Nursing. For further information, visit: nursing.wsu.edu.

**Degree Program Requirements**

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity (D) course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

**Bachelor of Science (126 Hours)**

The Bachelor of Science in Nursing degree requires a total of 120 semester hours. All students must meet the General Education Requirements for graduation as described elsewhere in the catalog. The prenursing course requirements are indicated by an asterisk (*) in the schedule of studies listed below.

*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 courses in nursing. Criteria for admission to the 300-400-level nursing major include an overall cumulative g.p.a. of 2.5 or higher and a cumulative g.p.a. of 2.5 or higher in prerequisite courses.*

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 101 [P] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Psych 105 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Soc 101 or 102 [S] (GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Biol 102 or 103 [B] (GER)</td>
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<tr>
<td>Chem 102 [P] (GER)</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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**Sophomore Year**

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<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Stat 212</td>
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<tr>
<td>Zool 315</td>
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**Second Semester**

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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>FSHE 223</td>
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<td>Nurs 200</td>
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<tr>
<td>Zool 251</td>
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**Junior Year**

<table>
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<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Nurs 308</td>
<td>2</td>
</tr>
<tr>
<td>Nurs 311</td>
<td>4</td>
</tr>
<tr>
<td>Nurs 314</td>
<td>4</td>
</tr>
<tr>
<td>Nurs 315</td>
<td>4</td>
</tr>
<tr>
<td>Nurs 318</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
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<td>Nurs 309</td>
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</tr>
<tr>
<td>Nurs 322</td>
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<tr>
<td>Nurs 324</td>
<td>4</td>
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<tr>
<td>Nurs 325</td>
<td>5</td>
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<td>Nurs 328</td>
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<td>Nurs 341</td>
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<td>Nurs 345</td>
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<td>Nurs 416</td>
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<td>Nurs 417</td>
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<tr>
<td>Tier III Course (GER)</td>
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**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Nurs 408</td>
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</tr>
<tr>
<td>Nurs 414</td>
<td>3</td>
</tr>
<tr>
<td>Nurs 415</td>
<td>3</td>
</tr>
<tr>
<td>Nurs 416</td>
<td>2</td>
</tr>
<tr>
<td>Nurs 417</td>
<td>2</td>
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<tr>
<td>Tier III Course (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<td>Nurs 409</td>
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</tr>
<tr>
<td>Nurs 424</td>
<td>3</td>
</tr>
<tr>
<td>Nurs 425</td>
<td>2</td>
</tr>
<tr>
<td>Nurs 426</td>
<td>2</td>
</tr>
<tr>
<td>Nurs 427</td>
<td>3</td>
</tr>
<tr>
<td>Nurs 430</td>
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</tbody>
</table>

*Note: Part-time schedule of study is available; see adviser.*

**Bachelor of Science**

**Option for Registered Nurses:** Required courses:

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurs 360, 365, 366, 400, 405, 406, 440, 460, 462, 465, 477, 495, capstone/upper-division elective</td>
</tr>
</tbody>
</table>

**Master of Nursing**

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 ICNE. Candidates for the MN degree are required to demonstrate competence in relevant computer applications. A thesis or specified non-thesis option is required.

**Core Courses in the Areas of Concentration**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurs 504</td>
</tr>
<tr>
<td>Nurs 507</td>
</tr>
<tr>
<td>Nurs 700</td>
</tr>
<tr>
<td>Nurs 702</td>
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</table>

College of Nursing/Intercolligate College of Nursing
Courses Required, Psychiatric/Mental Health Nurse Practitioner

<table>
<thead>
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<th>Course Code</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Nurs 541</td>
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<td>Nurs 542</td>
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<td>4 or 5</td>
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<td>Nurs 547</td>
<td>2</td>
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<td>Nurs 548</td>
<td>4</td>
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<td>Nurs 562</td>
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<td>Nurs 581</td>
<td>4</td>
</tr>
<tr>
<td>Nurs 582</td>
<td>3</td>
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<tr>
<td>PharP 525*</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>Variable</td>
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</tbody>
</table>

Electives: 

- Recommended elective.

Description of Courses

The following courses are offered at the Intercollegiate Center for Nursing Education Spokane and Yakima. Courses in the bachelor of science program for registered nurses are also offered at WSU Tri-Cities, WSU Vancouver, and Wenatchee.

**Nursing**

**Nurs 200 Professional of Nursing**

- Theoretical/historical aspects of professional nursing; development of nursing roles, scopes of practice, problem solving, and ethical decision making.

- **Assessiveness Training for Nurses**
  - Prereq: junior in Nurs. Assertion techniques and conflict management skills in personal and nursing situations; integrating theoretical concepts into practical situations. S, F grading.

- **Professional Development I: Research and Informatics**
  - 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**
  - Prereq: Nurs 308; c// Nurs 315. Continuation of Professional Development series; moral/ethical reasoning models, decision processes, and philosophical basis of nursing as a discipline explored.

- **Pharmacological Basis of Nursing Practice**
  - Prereq: major in Nurs or written permission of instructor. Utilization of pharmacological concepts as a basis for critical thinking and decision making in nursing.

- **Pathophysiology and Pharmacology in Nursing**
  - Prereq: admission to nursing. Etiology, pathogenesis, clinical manifestations of common human dysfunction; nursing implications for prevention and therapeutic approaches including pharmacologic and nonpharmacologic therapies.

- **Pathophysiological Basis of Nursing Practice**
  - Prereq: major in Nurs or written permission of instructor. Pathophysiologic processes, interrelationships with physiological defense mechanisms, theories of stress adaptation, age and psychological/behavioral responses.

- **Mental Health Concepts: Individual and Family**
  - Prereq: major in Nurs or written permission of instructor. Critical analysis of nursing’s use of mental health concepts incorporating the neural basis of behavior, social systems, and culture.

- **Introduction to Nursing Practice in Health and Illness**
  - Introduction to nursing concepts and health assessment including core professional values, knowledge, and competencies for nursing practice.

- **Nursing Practice: Health and Illness**
  - Prereq: Nurs 308, 311, 314. Introduction to nursing practice and health assessment: professional values, core competencies, core knowledge and role development. S, F grading.

- **Growth and Development Across the Life Span**
  - Prereq: admission to nursing or by permission. Theoretical and conceptual perspectives on human growth and development across the life span.

- **Nursing Concepts: Foundations**
  - Prereq: Nurs 310, 312, 330, or c//. Nursing concepts foundational to care of well/ill clients; nursing process, nurse/client roles, communication, relationships, basic needs and teaching-learning theories.

- **Nursing Practice: Foundations**
  - Prereq: admission to nursing; psycho-motor skills and interpersonal relationships in the care of adult clients.

- **The Human Experience of Diversity and Health**
  - Prereq: admission to nursing or by permission. Explorations of regional, national, and global expressions of health and illness and implications for health care professionals.

- **Nursing Concepts in Acute and Chronic Illness in the Adult**
  - Prereq: Nurs 311, 314, 315. Theoretical concepts of acute and chronic illness in the adult as a basis for critical thinking and decision-making in nursing.

- **Nursing Practice in Acute and Chronic Illness in Adults**
  - Prereq: Nurs 311, 314, 315; c// Nurs 324. Application of acute/chronic illness concepts in adults as a basis for critical thinking and decision-making in nursing. S, F grading.

- **Introduction to Gerontological Nursing**
  - Prereq: Nurs 318. Professional values, communication, and functional assessment in care of elders; core knowledge and role development of the gerontological nurse.

- **Nursing Concepts and Practice: Health Assessment**
  - Prereq: major in Nurs or written permission of instructor. Holistic multi-dimensional assessment of the well client throughout the adult years; comparison of findings with established norms.

- **Nursing Concepts: Maternity Nursing**
  - Prereq: Nurs 310, 312, 320, 321, 330; 313, 346, or c//. Normal reproductive processes and common health problems associated with reproduction; assessment and nursing care during the antepartum, intrapartum, and postpartum cycles.

- **Nursing Practice: Maternity Nursing**
  - Prereq: Nurs 310, 312, 320, 321, 330; 313, 342, 346, or c//. Experience in the care of mothers in the antepartum, intrapartum, and postpartum periods and newborns; family care and family planning. S, F grading.

- **Nursing Concepts: Nursing of Children**
  - Prereq: Nurs 310, 312, 320, 321, 330; 313, 346, or c//. Normal growth and development concepts applied to maintenance of child health, care of acutely ill hospitalized children, and needs of children requiring chronic care.

- **Nursing Practice: Nursing of Children**
  - Prereq: Nurs 310, 312, 320, 321, 330; 313, 344, 346, or c//. Experience in health maintenance and nursing care of children with acute and/ or chronic health problems; family is included in care planning. S, F grading.

- **Nursing Concepts: Family and Child Development**
  - Prereq: major in Nurs or written permission of instructor. Physical, cognitive, psychosocial, and moral development of children, infancy through adolescence; theoretical framework; family development and family theory.

- **Therapeutic Communication in Nursing**
  - Prereq: junior in Nurs. Therapeutic communication and relationship development with the well/ill client; various coping strategies used by nurse and client. S, F grading.

- **Professional Nursing Concepts and Issues**
  - Prereq: major in Nurs, RN or by interview. Philosophical, historical, economic, legal/ethical, and professional issues designed for registered nurses to build upon previously acquired professional concepts.

- **Nursing Concepts and Practice: Health Assessment for RNs**
  - Prereq: major in Nurs, RN or by interview. Holistic assessment of clients throughout the age continuum. For RNs with a basic knowledge of assessment skills of adult clients.
365 Nursing Concepts: Assessment and Application of Physiological Concepts to Nursing Practice 3 Prereq enrolled in WSU College of Nursing; registered nurse. Integration of pathophysiologocal, assessment, pharmacological nursing concepts with diverse client populations; emphasizing neurological, EN, skin, musculoskeletal, endocrine, and respiratory systems.

366 Nursing Concepts: Assessment and Application of Physiological Concepts to Nursing Practice II 3 Prereq enrolled in WSU College of Nursing; registered nurse. Integration of pathophysiologocal, assessment, pharmacological nursing concepts with diverse client populations; emphasizing fluid/electrolytes, oncology, GI/GU; cardiovascular; immune system, renal.

390 Laboratory Value Analysis and Interpretation 2 Prereq Nurs 312. Analysis and interpretation of common laboratory values with nursing focused application in selected case scenarios. S, F grading.

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.

401 [M] Nursing Leadership: Research 2 Prereq major in Nurs or written permission of instructor. Focus on the process of scientific inquiry used in investigating nursing problems.

402 Nursing Leadership: Group Theory 2 Prereq major in Nurs or written permission of instructor. Group and leadership theories as they relate to the practice of professional nursing.

403 Nursing Leadership and Management 3 Prereq Nurs 420, 421; or written permission of instructor. Application of leadership/management theories to steps of the management process; analysis of selected issues critical to the professional nurse.

405 Nursing Leadership 2 Prereq enrolled in WSU College of Nursing; registered nurse. Application of group leadership and management theories to professional nursing practice.

406 Nursing Management 3 Prereq enrolled in WSU College of Nursing; registered nurse. Management, leadership, and group theories are utilized and applied to the management of nursing and health care.

408 Professional Development III: Leadership and Management 3 Prereq Nurs 309. Continuation of Professional Development series; focus on impact of leadership, management, and resource allocation on patient outcomes.

409 Professional Development IV: Transition to Practice 2 Prereq Nurs 408. Continuation of Professional Development series; focus on transition to practice and nursing across health care systems/delivery within global arena.

414 Child and Family Health: Theory 3 Prereq Nurs 324, 325; c/ Nurs 318, 328. Analysis and evaluation of scientific and theory base for nursing care of children and families.

415 Children and Families as the Focus of Nursing Care 3 (1-6) Prereq Nurs 324, 325; c/ Nurs 318, 328, 414. Synthesis and application ofunderlying science and nursing process with the unique population of children and families. S, F grading.
513 Innovative Leadership and Management
V 3, 4 (3-3), or 5 (3-6) Prereq graduate standing in Nurs. Key issues affecting nursing administration; nursing and management theories for application in nursing service settings.

517 Financial Management
V 2 (2-0) to 3 (2-3) Prereq graduate student in Nurs. Application of economic theory and principles of financial management to the role of nurse manager.

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 Nurs or by permission. Exploration of curriculum history, development, future predictions; program evaluation, instructional resources, leadership, and policy development in academic and service settings.

524 Multimedia Approaches to Instruction and Evaluation
V 2-4 Prereq Nurs 521. Group and individualized instruction and evaluation; creating instructional software, use of TV studio, AV, and computers.

537 Role Analysis: Advanced Practice
2 (1-3) Prereq graduate student in Nurs. Emphasis on role analysis including interdisciplinary relationships, consultative skills, responsibility, activities, and functions of the advanced practice nurse.

541 Psychiatric/Mental Health Nursing: Individu- als
3 (3-3) Prereq graduate standing in Nurs. Psychopathology and appropriate nursing interventions with individuals across age continuum; families, groups, and communities.

542 Psychiatric/Mental Health Advanced Practice Role Development
2 Prereq BSN degree. Advanced practice psychiatric/mental health nursing role development emphasizing systems theory and definition of scope and standards of independent and collaborative roles.

543 Advanced Psychiatric Nursing Concepts: Group Psychotherapy
4 (3-3) Prereq Nurs 541, 542, or by interview only. Introduction to theory and practice of group psychotherapy; milieu and other selected theories are studied and applied to nursing practice.

544 Differential Diagnosis of Medical and Psychiatric Mimics
2 Prereq Nurs 581, 582, or c/l. Nursing theoretical differential assessment and management principles of physical/psychiatric symptomatology in determining diagnoses and implementing appropriate treatment.

546 Practicum in Psychiatric/Mental Health Nursing
4 (1-9) or 5 (1-12) Prereq Nurs 541, 543. Individualized clinical experience/seminar designed to provide advanced competency, accountability, leadership in psychiatric/mental health nursing.

547 Practice Management for the Psychiatric Nurse Practitioner
2 Prereq last semester of NP program. Evaluation of the role of the psychiatric nurse practitioner across a variety of health care contexts, examining current practice issues.

548 Psychiatric Nurse Practitioner Internship
V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq Nurs 546, PharP525, by interview only. Application and integration of theory, research findings, and interventions in the case of clients with psychiatric disorders.

549 Dimensions of Substance Abuse
2 Prereq Nurses 504, 537, 541, 562, 581, 582. Introduction to assessment, evaluation, prevention, and treatment for substance abuse.

550 International, Interdisciplinary, and Transcultural Health Care
3 Prereq graduate standing in nursing or by permission. Focuses upon 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: application of skills required to obtain and use data bases.

556 Community-Based/Population-Focused Role Practicum
V 3 (2-2) to 6 (2-12) Prereq instructor's permission. Culuminating analysis, development, and enactment of advanced practice roles in teaching, practice, or administration of community-based/population-focused nursing.

557 Care Management with At-Risk Infant and Young Child Populations
3 Prereq graduate standing in nursing or by permission. Analysis of biopsychosocial health risks of infants and young children using model of risk and resiliency in advanced nursing practice.

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
2-4 Prereq graduate standing in nursing or by permission; Nurs 557 and 558 or c/l. 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.

562 Advanced Health Assessment and Differential Diagnoses
3 (3-3) Prereq graduate standing in Nurs. 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 Nurs. 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 Nurs. Theoretical bases including cultural variations for selected health promotion strategies for neonates through elderly clients.

565 Information Management for Nursing Practice
3 (2-3) Prereq computer competency in word processing/spreadsheets. Application/evaluation of nursing informatics; use for management of patient care data in nursing practice and administration.

566 Community Analysis and Program Planning
V 2 (1-3) or 3 (2-3) Prereq graduate standing in Nurs. Application of core public health functions in community analysis, program development and program evaluation.

567 Primary Care: Adults and Elders
4 (2-9) Prereq Nurs 562, 563, 581, or 582. 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 Nurs 562, 563, 581, or 582. Assessment, differential diagnosis, and therapeutic intervention with infants, children, and adolescents in rural and urban settings.

569 Primary Care: Family
4 (1-9) Prereq Nurs 562, 563, 581, or 582. Assessment, differential diagnosis, therapeutic intervention with individuals in childbearing, childrearing, and multigenerational families.

571 Adult and Elders: Inpatient Management of Chronic Problems
6 (3-9) Prereq Nurs 562, 563, 581, or c/l in Nurs 575, 582. Diagnosis and treatment of inpatient adults and elders with low to medium acuity.

572 Adult and Elders: Inpatient Management of Acute/Critical Problems
6 (3-9) Prereq Nurs 562, 563, 581, or in Nurs 575, 582. Diagnosis and treatment of inpatient adults and elders with high to critical acuity.

573 Diagnostic Testing and Interpretation
3 (2-3) Prereq graduate standing in Nurs. Analysis of diagnostic findings across the age continuum for clinical decision making; selected diagnostic and treatment skills for advanced practice.

576 Advanced Concepts in Nursing
2 Prereq graduate standing in Nurs. Exploration of linkage between nursing science concepts and nursing practice through analysis of relevant research.

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) Graduate-level counterpart of Nurs 478; additional requirements. Credit not granted for both 478 and 578.

581 Advanced Physiology and Pathophysiology
I 4 Prereq graduate standing in Nurs. Advanced cellular and system physiology/pathophysiology related to health care of individuals with neuroendocrine, gastrointestinal, and immune diseases.

582 Advanced Physiology and Pathophysiology
II 3 Prereq graduate standing in nursing. Advanced cellular and system physiology/pathophysiology related to health care of individuals with neuroendocrine, gastrointestinal, and immune diseases.
Graduate Program in Nutrition


The Graduate Program in Nutrition is composed of faculty from the Departments of Food Science and Human Nutrition, Animal Sciences and Human Development in the College of Agriculture and Home Economics. Candidates for the Ph.D. degree in Nutrition have one of two options to choose from a) biological nutrition option and b) behavioral nutrition option. Biological nutrition represents studies of the metabolism of human nutrients, additives and various other biological chemicals that are currently being explored in human beings and other animal systems. Behavioral nutrition research examines sociocultural, economic and political influences on food choice, dietary quality, and nutritional status using social science research methods such as surveys, focus groups and in-depth interviews. Specific areas of research include nutrition and disease, nutrient availability, nutritional requirements, utilization and interactions of nutrients, dietary assessment, food safety, and nutrition education.

The Doctoral degree requirements for human nutrition students include core courses in biological and behavioral nutrition, biochemistry, research methods and statistics. Students in the biological nutrition option take additional courses in biochemistry. Those in the behavioral nutrition option select courses in related social science areas of interest. The wide range of graduate courses available in agricultural, biological, pharmacy, veterinary, human development, sociology, education and psychology allow students, in consultation with their program committee, to develop a course of study that meets their particular needs and interests. A foreign language is not required.

Contact department for prerequisites. Students applying to the Graduate Program in Nutrition should have a master's degree in nutrition, or a closely related field. Baccalaureate holders with exceptional academic records and research experience may be admitted with faculty approval.

Admission requirements include application to WSU, complete transcripts, GRE scores, TOEFL scores (if applicable), three letters of recommendation attesting to the applicant's qualifications for doctoral study, and a letter of interest stating academic goals. Applications and inquiries should be directed to Program Director, R. J. Bull, J. H. Exon; Adjunct Associate Professors, T. J. Mast, D. L. Springer; Adjunct Assistant Professor, B. Thrall.

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 and Veterinary Medicine, and also in the Departments or Programs of Chemistry, Entomology, Food Science and Human Nutrition, Genetics and Cell Biology, Neuroscience, Psychology, and Zoology at WSU and in the Food Science and Toxicology Department at the University of Idaho. The Graduate Program in Pharmacology and Toxicology is designed to prepare students for careers in research and teaching and offers both Master of Science and Doctor of Philosophy degrees.

Students entering our program should have completed undergraduate work in biology, chemistry (including organic chemistry and biochemistry), mathematics (through calculus), a 300-level organ/mammalian physiology course and an undergraduate statistics course. 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. Each student in the program is required to complete the core curriculum:

**Program in Pharmacology and Toxicology**


<table>
<thead>
<tr>
<th>Description of Courses</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>Nutrition</strong></td>
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<tr>
<td>500 Seminar in Nutrition</td>
<td>1 May be repeated for credit; cumulative maximum 5 hours. Seminar on current research issues in nutrition.</td>
</tr>
<tr>
<td>505 Experimental Nutrition</td>
<td>3 (1-6) Same as A S 505.</td>
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<tr>
<td>507 Advanced Nutrition Metabolism</td>
<td>3 Same as A S 507.</td>
</tr>
<tr>
<td>508 Seminar-Written</td>
<td>2 Same as FSHN 508.</td>
</tr>
<tr>
<td>513 Mineral and Vitamin Metabolism</td>
<td>4 Same as A S 513.</td>
</tr>
<tr>
<td>520 Research Methods in Behavioral Nutrition</td>
<td>3 Same as FSHN 520.</td>
</tr>
<tr>
<td>521 Research Techniques in Nutrition</td>
<td>3 (1-6) Same as FSHN 521.</td>
</tr>
<tr>
<td>526 Advanced Community Nutrition</td>
<td>3 Same as FSHN 526.</td>
</tr>
<tr>
<td>531 Nutrition and Aging</td>
<td>2 Same as FSHN 531.</td>
</tr>
<tr>
<td>533 Pathophysiology of Human Nutrition</td>
<td>3 Same as FSHN 533.</td>
</tr>
<tr>
<td>598 Advanced Topics in Nutrition</td>
<td>1 or 2 May be repeated for credit. Recent research in nutrition.</td>
</tr>
<tr>
<td>600 Special Projects or Independent Study</td>
<td>Variable credit.</td>
</tr>
<tr>
<td>800 Doctoral Research, Dissertation and/or Examination</td>
<td>Variable credit. S, F grading.</td>
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</tbody>
</table>

*Students beginning study in the Pharmacology/Toxicology Graduate Program should have taken a 300-level (or higher) organ physiology/mammalian physiology course sometime in their college career; if not, the student will need to take one to correct this deficiency in his/her first year of study. Students in both the M.S. and Ph.D. programs are expected to develop an area of emphasis that is consistent with the research capabilities and interests of the faculty. In addition, elective graded coursework (currently 6 credits for M.S. students; 12 credits for Ph.D. 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: antioxidants; carcinogen-
esis, cancer chemotherapy and the effects of diet on tumor growth and metastasis; cardiovascular pharmacology and the nutritional and genetic basis of cardiovascular disease; drug metabolism and the role of drug and chemical metabolism in toxicological responses; endocrinology; hepatotoxicology, immunopharmacology; immunotoxicology of drugs of abuse and environmental contaminants; neurobiology, neuropharmacology and behavioral pharmacology; multiple chemical sensitivity; the physiology/biochemistry of neuropetide transmitters and hormones; and the molecular mechanism of chemically-induced cell death.

Veterinary Medicine and Pharmacy faculty in the Pharmacology/Toxicology Program are housed primarily in Wegner Hall. The building has been remodeled and provides an excellent atmosphere for study and research. Modern instruments available for pharmacological and toxicological research include: UV, IR, CD, fluorescence, and FT-NMR spectrophotometers, facilities for NMR, X-ray crystallography, mass spectrometry, molecular graphic systems, amino acid analysis, oligonucleotide and peptide synthesis, DNA sequencing, and an Electron Microscopy Center are available on campus. Laboratories of individual faculty members in the Pharm/Fox Program are well-equipped with: spectrophotometers, digital imaging, gas chromatographs, cell sorters, mammalian cell culture facilities, liquid scintillation, high performance liquid chromatographs, real-time quantitative PCR instrument, image analyzer, fluorescence and UV/visible microplate readers, flow cytometer, densitometer, and other instruments to perform their research projects. In addition, the building houses a health sciences library and a vivarium equipped to maintain a variety of research animals. Excellent research facilities house other members of the Pharmacology/Toxicology faculty at WSU and at the University of Idaho. You may visit our website at http://www.pharmacy.wsu.edu/PharmTox. 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 466554, Pullman, WA 99164-6534 or e-mail: pharmtox@wsu.edu.

Pre-Pharmacy Requirements

1. Arts and Humanities
2. Communication Proficiency (3 hours must be in written communications)
3. Intercultural Studies
4. Social Sciences
5. Tier III Course
6. World Civilizations
7. Writing Portfolio
8. Biol 103, 104
9. Chem 105, 106
10. Chem 340, 341, 342
11. Math 140
12. MBioS 302
13. Stat 412
14. MBioS 303
Total Credit Hours 66

*Courses listed in numbers 1 through 6 above must be selected from the General Education Require-
Degree Program Requirements

PROFESSIONAL CURRICULUM

The four professional years of the Doctor of Pharmacy (Pharm.D.) program are outlined below. A total of 192 credit hours are required for graduation.

<table>
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<tr>
<th>First Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>PharP 450</td>
<td>3</td>
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<tr>
<td>PharP 451</td>
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<tr>
<td>PharS 332</td>
<td>1</td>
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<tr>
<td>PharS 437</td>
<td>1</td>
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<tr>
<td>PharS 531P</td>
<td>3</td>
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<tr>
<td>PharS 540P</td>
<td>2</td>
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<tr>
<td>Zool 315</td>
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<tr>
<td>Zool 352</td>
<td>3</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<td>Second Semester</td>
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<td>PharP 456</td>
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<tr>
<td>PharP 573P</td>
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<tr>
<td>PharP 581P</td>
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<tr>
<td>PharS 533P</td>
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<tr>
<td>PharS 542P</td>
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<tr>
<td>PharS 556P</td>
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<td>Electives (Non-Professional)</td>
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<tr>
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<td>First Semester</td>
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<td>PharP 457</td>
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<td>PharP 552P</td>
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<tr>
<td>PharP 574P</td>
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<td>PharS 543P</td>
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<td>Electives (Non-Professional)</td>
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**Description of Courses**

Pharmaceutical Science

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<thead>
<tr>
<th>Course</th>
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<tr>
<td>PharP 531P</td>
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<td>PharP 562P</td>
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<tr>
<td>PharP 564P</td>
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<td>PharS 566P</td>
<td>5</td>
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<tr>
<td>PharS 567P</td>
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**Fourth Year**

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.

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PharP 561P</td>
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<td>PharP 564P</td>
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<tr>
<td>PharP 567P</td>
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**543P Pharmacological Basis of Therapeutics IV**

4 Prereq PharS 542P. Structure-activity relationship, mechanism of action, medication-related effects, pharmacological and structural determinants of drug targets; antagonists and agonists; drug interactions; receptor occupancy; pharmacological databases; and drug design.

**544P Toxicology**

2 Prereq PharS 542P, 556P. Molecular toxicology emphasizing basic concepts, molecular mechanisms of action, and pharmacodynamics of drugs that demonstrate selective toxicity against microbes and cancer cells.

**545P Total Quality Management**

1 Prereq PharP 531P, PharS 533P. A survey of quality improvement programs in the pharmaceutical industry and pharmacy practice.

**546P Selective Toxicity**

3 Prereq PharS 541P. Structure-activity relationships, mechanisms of action, and pharmacodynamics of drugs that demonstrate selective toxicity against microbes and cancer cells.

**556P Pathophysiology**

3 Prereq Zool 315. Mechanisms of major disease processes; cell injury, circulation, disease management, and neoplasia.

Pharmacy Practice

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<th>Course</th>
<th>Hours</th>
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<tr>
<td>PharP 217</td>
<td>2</td>
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</table>

**250 [S] The American Health Care System**

3 Development of the American health care delivery system; emergence of the health professions, insurance, hospitals, consumer advocacy, and formulation of health policy.

**450 Wellness and Preventive Medicine**

3 Principles and techniques of health education and preventive medicine.

**451 Pharmacy Practice**

1 Basic clinical skills, interpretation of patient data, problem-solving skills, professional communications, professionalism, and pharmacy ethics.

**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.

**457 Early Practice Experience II**

1 (0-3) Prereq PharP 450, 456. Continued practical experience in using knowledge and skills related to patient education, disease management, and medical self-care as well as one-on-one mentoring of other students. For Pharm.D. students only. S, F grading.

**483 [T] Human Body Systems**

3 Prereq FSHN 130 or MBioS 101; introductory biology; completion of one Tier I and three Tier II courses. Lifestyle skills: medical self care, including use of over-the-counter drugs, fitness nutrition, stress management, and body image.

**499 Special Problems**

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

**511P Advanced Pharmacotherapeutics I**

1 Pharmacotherapy of infectious diseases. S, F grading.

**512P Advanced Pharmacotherapeutics II**


**513P Advanced Pharmacotherapeutics III**

1 Pharmacotherapy of musculoskeletal disorders. S, F grading.

**514P Advanced Pharmacotherapeutics IV**

1 Pharmacotherapy of pulmonary diseases. S, F grading.
51P Advanced Pharmacotherapeutics 5  1  Pharma- 
cotherapy of renal diseases.  S, F grading.
51P Advanced Pharmacotherapeutics 6 1  Pharma- 
cotherapy of hematologic and oncology 
diseases.  S, F grading.
51P Advanced Pharmacotherapeutics 7 1  Phar-
macotherapy of endocrine disorders.  S, F grading.
51P Advanced Pharmacotherapeutics 8 1  Pharma-
terapy of gastrointestinal disorders.  
S, F grading.
51P Advanced Pharmacotherapeutics 9 1  Pharma-
terapy of neuropsychiatric disorders.  
S, F grading.
52P Practical Psychiatric Drug Therapy for  
Clinicians 3  Review of practical psychiatric 
drug therapy for physicians, pharmacists, men-
tal health professionals and others working in 
the mental health field.
53P Clinical Research Methods I: Pharma-
coeconomics 2  Prereq PharS 437, PharS 
533P.  Pharmacoeconomics and biostatis-
tics.  S, F grading.
53P Clinical Research Methods II: Pharma-
coepidemiology 3  Prereq PharP 531P, 537P.  
Pharmacoepidemiology and biostatics.
53P Pediatric Pharmacotherapy 1  Prereq 
533P or c//.  Pharmacotherapy of pedi-
tric medication.
53P Critical Care Pharmacotherapy 1  Prereq 
PharP 533 or c//.  Pharmacotherapy of critical 
care medicine.
53P Medication Errors 1  Prereq 3rd professional 
year student.  Identifying and preventing med-
cation errors and misadventures.
53P Parenteral Products 2 (1-3)  Prereq PharS 437, 
533P.  Preparation of intravenous admixtures, 
parenteral nutrition, parenteral hydration, 
and emergency medications.
54P Physical Assessment 2 (1-3)  Prereq 
PharP 538P or PharP 533P 532P.  Collec-
tion and evaluation of patient information; 
monitoring efficacy and toxicity of pharmacotherapy; 
physical assessment and clinical laboratory values.  
S, F grading.
54P Nonprescription/Herbal Products 3  Prereq 
PharP 533P, 538P.  Pharmacotherapy of non-
prescription medications and herbal prod-
ucts.
55P Pharmacotherapy 1  5  Prereq PharS 533P,  
542P.  Series of modules that provide the foun-
dation of pathophysiology and treatment 
of various diseases.
55P Pharmacotherapy II  5  Prereq 552P, PharS 
543P.  Series of modules that provide the foun-
dation of pathophysiology and treatment 
of various diseases.
55P Pharmacotherapy III  5  Prereq 552P, PharS 
543P.  Series of modules that provide the foun-
dation of pathophysiology and treatment 
of various diseases.
55P Special Topics 2  Contemporary issues in 
pharmacy.
57P Clinical Pharmacokinetics  V 1 (0-3) to 
2 (1-3) May be repeated for credit; 
cumulative maximum 2 hours.  Prereq PharS 433.  Applications of 
pharmacokinetic principles to safe and effective 
therapeutic management of individual patients 
in a clinical setting.
58P Literature Evaluation V 1 or 2  May be 
repeated for credit; cumulative maximum 2 
hours.  Prereq PharP 533P or c//.  An overview of 
the scientific method, emphasizing how to 
evaluate the pharmacological and biomedical 
literature to provide better patient care.
56P Acute Care Advanced Practice Experi-
ence  V 1 (0-3) to 5 (0-15)  May be repeated for 
credit; cumulative maximum 5 hours.  Prereq 
Pharm.D.  didactic coursework complete.  
Advanced practice experience in acute care 
settings.
56P Ambulatory Care Advanced Practice Ex-
perience  V 1 (0-3) to 5 (0-15)  May be repeated for 
credit; cumulative maximum 5 hours.  Prereq 
Pharm.D.  didactic coursework complete.  
Advanced practice experience in ambulatory 
care settings.
56P Elective I Advanced Practice Experience 
V 1 (0-3) to 5 (0-15)  May be repeated for credit; 
 cumulative maximum 5 hours.  Prereq Pharm.D. 
 didactic coursework complete.  Advanced prac-
tice experience in acute or ambulatory patient 
care settings.
56P Elective II Advanced Practice Experience  
V 1 (0-3) to 5 (0-15)  May be repeated for credit; 
cumulative maximum 5 hours.  Prereq Pharm.D. 
 didactic coursework complete.  Advanced prac-
tice experience in acute, ambulatory, or non-
traditional patient care.
56P Institutional Advanced Practice Experi-
ence  V 1 (0-3) to 5 (0-15)  May be repeated for 
credit; cumulative maximum 5 hours.  Prereq 
Pharm.D.  didactic coursework complete.  Advanced prac-
tice experience in a community pharmacy 
setting.
56P Extended Degree Advanced Practice Ex-
perience  V 1 (0-3) to 20 (0-60)  May be repeated for 
credit; cumulative maximum 20 hours.  Prereq 
five pharmacotherapy week-end workshops 
complete.  Advanced practice experience in 
various health care settings.
57P Pharmaceutical Care Laboratory I  1 (0-3)  
Prereq PharP 451 or c//.  Practicum designed to 
integrate classroom-acquired knowledge, 
behaviors and values into professional skills.
57P Pharmaceutical Care Laboratory II  1 
(0-3)  Prereq PharP 551P or c//, PharP 572P. 
Practicum designed to integrate classroom-ac-
quired knowledge, behaviors and values into 
professional skills.
57P Pharmaceutical Care Laboratory III  2 
(0-6)  Prereq PharP 552P or c//, PharP 573P. 
Practicum designed to integrate classroom-ac-
quired knowledge, behaviors, and values into 
professional skills.
57P Pharmaceutical Care Laboratory IV  2 
(0-6)  Prereq PharP 553P or c//, PharP 574P. 
Practicum designed to integrate classroom-ac-
quired knowledge, behaviors and values into 
professional skills.
58P Pharmacy Management 3  Management 
principles applied to pharmacy practice; 
health systems; patient care strategies.
58P Pharmacy Law 2  Prereq PharP 554P or c//. 
Laws relating to the practice of pharmacy.
59P Special Projects 2  May be repeated for credit; 
cumulative maximum 4 hours.  Laboratory re-
search, clinical research, or comprehensive 
review of selected subjects.  S, F grading.

Health Policy and Administration

Professor and Director, W. C. Schmidt; Professor, 
D. A. Sclar; Associate Professors, M. M. Ahern, 
J. S. Coyne, M. S. Hendryx, B. C. Hicks, T. L. 
Skaer; Assistant Professor, C. A. Molinari.

The Graduate Program in Health Policy and Admin-
istration (HPA) offers the Master of Health Policy and 
Administration degree at WSU Spokane. The HPA 
program’s mission is: (1) to prepare 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 Man-
gement; Government Regulation of Health Services; 
Economics of Health Care); core courses (Health Care 
Cost Accounting; Health Care Finance; Health Manage-
ment Decision Science; Health Care Management; 
Quality Management; Research and Evaluation Meth-
ods; Health Care Information Systems); electives; 3 credit 
internship; capstone course, Strategic Management; and 
3 credit graduate project.

Basic knowledge of statistics, microeconomics, fi-
nancial accounting, and computer skills (word 
processing, spreadsheet) are prerequisites for the re-
quired 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 Admin-
istration is accredited by the Accrediting 
Commission on Education for Health Services Admin-
istration (ACEHSA). According to the Association 
of University Programs in Health Administration 
Directory of Programs, “ACEHSA 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 ACEHSA 
is the most important assurance that a graduate pro-
gram 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). Accord-
ing to WICHE, WRGP “consists of very high quality 
masters and doctoral degree programs which tend not 
to be widely available throughout the West.” Admis-
sion 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 ACEHSA-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 grade point average 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., M.D., J.D., D.D.S.) or Ph.D. from a U.S. accredited school. Significant weight is given to GRE aptitude (verbal and quantitative combined) total scores of at least 1000, or a GMAT aptitude score of at least 500. However, indications of academic ability as expressed by undergraduate grade point average and professional experience are of greater importance than specific undergraduate background and GRE or GMAT scores.

For additional information, please call (509) 358-7980 or visit www.hpa.spokane.wsu.edu.

### Description of Courses

**Health Policy and Administration**

**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, anti-trust, health care financing and cost control.

**509 The Economics of Health Care** 3 Same as Econ 455.

**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 510. Aspects of health care financial management fundamentals and managerial accounting for strategic financial management.

**512 Health Management and Decision Science** 3 Prereq HPA 511. Application of decision science technology to risk-analysis problems in healthcare for both investor-owned and nonprofit entities.

**515 Health Care Management** 3 Introduction to the knowledge, skills, and values associated with the practice of health management.

**516 Quality Management** 3 Same as EM 570.

520 Research and Evaluation Methods 3 Prereq statistics. Basic research and evaluation methods for health care professionals.

530 Health Care Information Systems 3 Key attributes of health care information systems and their evolution in health care environment.

570 Marketing for Health Care Organizations 3 Prereq graduate standing. Basic marketing concepts, principles, and issues related to marketing public and private health care.

571 Managed Care/Integrated Delivery Systems 3 Prereq HPA 500, 511. Business, regulatory and liability issues in field of managed 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.

575 Aging and Long-term Care Administration 3 Introduction to issues in population aging and requirements for administration of aging and long-term care programs.

576 Managing Change for Healthier Communities 3 Prereq graduate standing. Prepares health leaders for managing change to create healthier communities through understanding determinants of health and implications of collaborative approaches.

577 Women’s Health: Social, Psychological, and Physiological Issues 2 Contemporary issues in women’s health focusing on physiological, social and psychological aspects.

578 Innovative Leadership and Management 3, 4 (3-3), or 5 (3-6). Same as Nurs 513.

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.

590 Strategic Management 3 Prereq HPA 511, 515. Key components and processes in strategic planning.

596 Seminar in Health Policy V 1-3 May be repeated for credit; cumulative maximum 9 hours. Major problems and research issues in health policy through dialogue among students and experts.

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. Major problems and research issues in health policy through dialogue among students and experts.

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

700 Masters’ Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Masters’ Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

### Department of Philosophy

Associate Professor and Department Chair, M. R. Neville; Professors, H. S. Silverstein; Associate Professors, D. M. Holbrook, M. W. Myers; Assistant Professors, M. K. Bloodworth, J. K. Campbell, D. L. Shier.

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 in Arts in Philosophy and to a supporting endorsement in education.

### Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs. American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Students complete one Honors Requirements in place of GERs.

At least 40 of the total hours required for the bachelor’s degree in this program must be in 300-400-level courses. No course with a grade of D+ or less will be counted toward the major, no course taken pass/fail may be counted toward the major, and the overall for courses in the major must be at least a C (2.0).

The first two years requirements are common to both philosophy degree programs:

### FIRST AND SECOND YEAR REQUIREMENTS

**Freshman Year**

**First Semester**

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<tr>
<th>Course</th>
<th>Credits</th>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Degree Program Course</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>
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<td>Math Proficiency [N] (GER)</td>
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**Second Semester**

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<td>Communications [C,W] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Phil 201</td>
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<tr>
<td>Science Elective (GER)</td>
<td>4</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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**Sophomore Year**

**First Semester**

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<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<td>Degree Program Course</td>
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<td>Foreign Language, if necessary, or Elective</td>
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<td>Elective</td>
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**Second Semester**

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<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<tr>
<td>Degree Program Course</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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1For Philosophy/Pre-Law, take Phil 260, and two Phil Electives; for Traditional Philosophy, take Phil 101, 290, and 305.
PHILOSOPHY/PRE-LAW DEGREE PROGRAM (120 HOURS)  

Junior Year

First Semester  
Arts & Humanities [H,G] or Social Science [S,K] (GER) 3  
Intercultural [I,G,K] (GER) 3  
Phil 360, 365, or 370 3  
Pol S 300 3  
Elective 3  
Complete Writing Portfolio

Second Semester  
Phil 301 [W] (GER) 3  
Phil 445, 460, or 470 3  
Tier III Course (GER) 3  
Elective 6

Senior Year

First Semester  
Phil Electives 6  
Electives 9

Second Semester  
Phil Electives 6  
Electives 9

TRADITIONAL PHILOSOPHY DEGREE PROGRAM (120 HOURS)  

Junior Year

First Semester  
Arts & Humanities [H,G] or Social Science [S,K] (GER) 3  
Intercultural [I,G,K] (GER) 3  
Phil 310 or 420 3  
Phil 335 or 340 3  
Elective 3

Second Semester  
Phil 325 3  
Phil 445 or 460 3  
Tier III Course (GER) 3  
Elective 6

Senior Year

First Semester  
Phil Electives 6  
Electives 9

Second Semester  
Phil Elective 3  
Electives 12

The undergraduate minor consists of 16 hours of course work, at least 8 of which must be in 300-400-level courses. Courses are chosen by the student, in consultation with the department, but will normally include Phil 101 and will always include Phil 201.

Description of Courses

Philosophy

Phil 101 [H] Introduction to Philosophy 3 Nature and place of philosophy in human thought; problems and achievements.

Phil 198 [H] Philosophy Honors 3 Open only to students in the Honors College.

201 [H] Elementary Logic 3 Analysis and evaluation of deductive and non-deductive arguments.

207 [H] Philosophy of Religion 3 Western religious thought, nature and knowledge of God, relations to science, morality, and society.

210 Philosophy in Film 3 The use of film as "philosophical text", discussing philosophical theories and debates presented in films, both old and new.

220 [H] Aesthetics 3 Analysis of aesthetic experience; applications to art and nature; criteria of art criticism.

260 [H] Introduction to Ethics 3 Ethics through analysis of contemporary moral and social issues.

290 [H] History of Ancient and Medieval Philosophy 3 Socrates, Plato, Aristotle; post-Aristotelian philosophy to the Renaissance. Cooperative course taught jointly by WSU and UI (Phil 309).

305 [H] History of Modern Philosophy 3 Renaissance, 17th and 18th century philosophers. Cooperative course taught jointly by WSU and UI (Phil 310).

310 [H] Nineteenth-century Philosophy 3 Focus on the Continental tradition in philosophy.

312 [H,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.

314 [G,M] Philosophies and Religions of India 3 PreReq 3 hours Phil. Metaphysical, epistemological, ethical, aesthetic, social, and political views of Hinduism, Buddhism, and Islam, and their influence on Indian civilization.

315 [G,M] Philosophies and Religions of China and Japan 3 PreReq 3 hours Phil. The philosophies and religions of China and Japan, and their metaphysical, epistemological, ethical, social, and political positions and views of God and gods.

325 [M] History of Analytic Philosophy 3 PreReq 3 hours Phil. Selected major philosophers, issues, and trends in analytic philosophy.

335 [M] Seminar in Theory of Knowledge 3 PreReq 3 hours Phil. Problems of immediate knowledge and mediate knowledge, modes of cognition. Cooperative course taught jointly by WSU and UI (Phil 440).

340 [M] Seminar in Metaphysics 3 PreReq 3 hours Phil. Theories of self, world, God, nature of being. Cooperative course taught jointly by WSU and UI (Phil 340).

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.

375 [M] Women and Ethics 3 Same as W St 375.

390 Topics in Philosophy 3 May be repeated for credit; cumulative maximum 6 hours.

401 Seminar in Symbolic Logic 3 PreReq Phil 201. Cooperative course taught by WSU, open to UI students (Phil 402).

407 Seminar in Religious Studies 3 May be repeated for credit; cumulative maximum 6 hours. Senior seminar for majors in religious studies.

410 Philosophy of Language 3 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).

418 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 350), open to WSU students.

420 Contemporary Continental Philosophy 3 PreReq 3 hours Phil. Twentieth-century European movements in philosophy; phenomenology, existentialism, structuralism, deconstruction, and others. Cooperative course taught by WSU, open to UI students (Phil 420).

430 [T,H] Philosophy of Art 3 PreReq completion of one Tier I and three Tier II courses. Philosophical exploration of any or all of the arts, emphasis on value considerations and comparisons of differing media.

435 [T] East/West Philosophy of Architecture 3 PreReq completion of science General Education Requirements, completion of one Tier I and two Tier II courses. Methodological comparison; cutting edge issues in science as they impact theism; guest lectures from professors in the natural sciences.

445 [M] Seminar in Social and Political Philosophy 3 PreReq 3 hours Phil. Problems of normative social and political theories; historical and contemporary philosophers. Cooperative course taught jointly by WSU and UI (Phil 430).

450 [M] 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).

460 [M] Seminar in Ethical Theory 3 PreReq 3 hours Phil. Problems of ethical theory as treated by historical and contemporary philosophers. Cooperative course taught jointly by WSU and UI (Phil 433).

470 Philosophy of Law 3 PreReq 3 hours Phil. Selected topics pertaining to moral and philosophical evaluation of law. Cooperative course taught by UI (Phil 410), open to WSU students.

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.

Physical Education Activity Courses

Description of Courses

PEACT 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 activity 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
### Physical Education Activity Courses

**Courses are graded A, S, or F, except as noted.**

#### PEACT
- **101** Beginning Conditioning
- **102** Beginning Conditioning ROTC
- **105** Beginning Wrestling
- **106** Self Defense
- **107** Beginning Judo
- **108** Karate
- **112** Weight Training
- **114** Beginning Gym Tumbling
- **116** Gymnastics
- **118** Adapted Physical Education
- **119** Aerobic Dance
- **120** American Social Dance Men
- **121** American Social Dance Women
- **122** Beginning Ballet
- **124** Tap Dancing
- **126** Beginning Mod Dance
- **127** Beginning Jazz Dance
- **128** Beginning Swimming
- **130** Diving
- **131** Scuba Diving
- **132** Conditioning Swimming
- **133** Water Aerobics
- **134** Conditioning Skiing
- **135** Aqua Fitness
- **137** Boating Safety Instruction
- **139** Rowing
- **140** Jogging
- **141** Beginning Golf
- **143** Beginning Bowling
- **145** Beginning Fencing Men
- **146** Beginning Fencing Women
- **147** Beginning Rollerskating and Rollerblading
- **148** Beginning Badminton
- **150** Beginning Tennis
- **152** Pocket Billiards
- **153** Ultimate Frisbee
- **154** Beginning Racquetball
- **158** Beginning Volleyball
- **160** Beginning Flag Football
- **162** Beginning Basketball
- **164** Beginning Soccer
- **174** Beginning Skiing
- **176** Intermediate Racquetball
- **181** Beginning Roller Hockey
- **200** Special Topics
- **201** Intermediate Conditioning ROTC
- **208** Intermediate Karate
- **220** Advanced Social Dance Men
- **221** Advanced Social Dance Women
- **222** Intermediate Ballet
- **224** Intermediate Tap Dance
- **227** Intermediate Jazz Dance
- **228** Intermediate Swimming
- **231** Advanced Scuba Diving
- **234** Emergency Water Safety
- **235** Lifeguarding
- **236** Lifesaving Recertification
- **241** Intermediate Golf
- **242** Advanced Golf
- **243** Intermediate Bowling
- **245** Intermediate Fencing Men
- **246** Intermediate Fencing Women
- **247** Advanced Racquetball
- **250** Intermediate Tennis
- **251** Advanced Tennis
- **253** Advanced Ultimate Frisbee
- **258** Intermediate Volleyball
- **259** Advanced Volleyball
- **260** Intermediate Flag Football
- **262** Intermediate Basketball
- **264** Intermediate Soccer
- **265** Advanced Soccer
- **266** Fly Fishing
- **274** Intermediate Skiing
- **275** Advanced Skiing
- **281** Intermediate Roller Hockey
- **282** Competitive Roller Hockey

### Physical Science Courses

**Description of Courses**

**Physical Science**

Ph S

**250 Principles of Astronomy and Physics** 4 (3-3)

Concepts, principles, and processes from astronomy and physics for a general student audience.

**298 Physical Science Honors** 4 (3-3)

Concepts from cosmology, astronomy, physics, chemistry, and biochemistry; how matter evolved from the Big Bang to intelligent life forms.

**430 Methods of Teaching Physical Science** 3 (2-3) Prereq T & L 303; 12 hours science. Methods, philosophy, and structure of science; application in teaching middle/secondary school physical science courses.

### Department of Physics


The Department of Physics in collaboration with the School of Electrical Engineering and Computer Science offers a specialization of the Master of Science in Physics in the multidisciplinary area of Optoelectronics.

### Degree Program Requirements

**Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements.** This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. **Honors students complete Honors Requirements in place of GERs.**

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 of courses below is appropriate for students who have had a good experience with calculus and wish to start physics in the first semester at WSU (even if the student is placed in Math 171, if their high school grades for a year course in calculus were B or better they may follow this schedule of study). Students who have placed in Math 172 can ac-
cerate the math sequence. A student who has not had calculus in high school should defer Phys 201 to the spring semester or until they have completed Math 171. Upon consultation with the departmental adviser, modifications can be made in the list of required courses to fit the needs of individual students. Note that in all the programs that follow, 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. The degree programs are listed as possibly offering the minor.

A student may certify as a physics major after completing 30 credits (preferably including Phys 201 and Math 171) with a cumulative g.p.a. 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.

**FIRST AND SECOND YEAR REQUIREMENTS**

The first year requirements are common to all physics degree programs:

### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Degree program course, if necessary(^1)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Phys 201 or 205</td>
<td>4 or 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 105 [P] (GER) or 115</td>
<td>4</td>
</tr>
<tr>
<td>Degree program course, if necessary(^1)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 172</td>
<td>4</td>
</tr>
<tr>
<td>Phys 202 or 206</td>
<td>4 or 5</td>
</tr>
</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Chem 106 [P] (GER) or 116</td>
<td>4</td>
</tr>
<tr>
<td>Degree program course, if necessary(^2)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Engl 402 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 220</td>
<td>2</td>
</tr>
<tr>
<td>Math 272</td>
<td>3</td>
</tr>
<tr>
<td>Phys 303</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Cpt S 150</td>
<td>4</td>
</tr>
<tr>
<td>Degree program course, if necessary(^2)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Math 315</td>
<td>3</td>
</tr>
<tr>
<td>Phys 304</td>
<td>3</td>
</tr>
<tr>
<td>Phys 330</td>
<td>3</td>
</tr>
</tbody>
</table>

\(^1\) Environmental: ES/RP 101; Physics Education: Psych 105 [S] (GER); Computer Physics: Cpt S 150, 250.

\(^2\) Astrophysics: Phys 345; Biophysics, Environmental Option: Biol 103, 104; Computer Physics, Optics and Electronics, Technical Option: E E 214; Physics Education: ComSrt 102, 1 T & L 300.

### THIRD AND FOURTH YEAR REQUIREMENTS

Consult the Physics Department to determine when classes should be taken:

#### Standard Four-Year Degree Agreement Program

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); Interdepartmental [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Math Electives (6 hours)\(^2\); Phys 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M], 499\(^2\).

#### Standard Program

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); Interdepartmental [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Math Electives (6 hours)\(^1\); Phys 320, 341, 342, 410, 415 [M], 443, 450, 461, 463, 465, 490 [M], 499; any 400-level Math or Phys course.

#### Astrophysics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Astronomy.

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdepartmental [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Art History 390; Math Electives (6 hours)\(^1\); Phys 320, 341, 342, 410, 412, 415 [M], 443, 450, 461, 463, 465, 490 [M], 499; any 400-level Math or Phys course.

#### Biophysics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Biophysics.

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdepartmental [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Astro 390; Math Electives (6 hours)\(^2\); Phys 320, 341, 342, 410, 412, 415 [M], 435, 443, 450, 461, 463, 490 [M].

#### Mathematical Physics Program

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); Interdepartmental [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Math Electives (12 hours)\(^2\); Phys 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M].

#### Materials Science Program

This program yields a Bachelor of Science in Physics Degree with a minor in Materials Science.

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdepartmental [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Math Electives (6 hours)\(^2\); Phys 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M].

#### Electrical Engineering Program

This program yields a Bachelor of Science in Physics Degree with a minor in Electrical Engineering.

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdepartmental [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Eng 101, 102, 261, 262, 314, 431, 496, 499; Math Electives (12 hours)\(^2\); Phys 320, 341, 342, 410, 415 [M], 443, 450, 463, 490.

#### Physics Education Program

This program yields a Bachelor of Science in Physics Degree with a minor in Education.

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdepartmental [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); EdPsy 261, 262, 314, 431, 496, 499; Math Electives (6 hours)\(^2\); Phys 320, 341, 342, 410, 415 [M], 443, 450, 463, 490.

#### Environmental Physics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Physics and possibly in Environmental Science.

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdepartmental [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Biol 372; Chem 340, ES/RP 335, 404, 444, 445, 499; Math Electives (6 hours)\(^2\); Phys 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M].

#### Materials Science Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and possibly in Materials Science.

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Interdepartmental [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Chem 331, 333; Math Electives (6 hours)\(^2\); MSE 301, 312, 314, 321, 499; Phys 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M].
## Department of Physics

1 Approved choices include: MATH 340, 360, 375, 401, 402, 415, 420, 440, 441, 443, 448. (Underlined entries are recommended.)

2 One hour of 499 in an appropriate department or Physics required. Additional hours may be taken for credit.

### Minor in Physics

A physics minor requires Phys 201, 202 and Phys 303, 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.

### Transfer Students

Transfer students receive credit for equivalent courses taken elsewhere, but must meet the requirements for graduation listed above.

### Preparation for Graduate Study

Undergraduate students contemplating graduate work in physics should consider enrolling in Phys 443, 450, 521, 571, and additional math courses. At least one year of German, Russian, or French is also recommended.

### Description of Courses

#### Description of Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>P [P] Physics for Scientists and Engineers</td>
<td>4</td>
<td>(3-3) Prereq Math 172, Phys 201</td>
<td>Calculus-based physics, topics in electricity, magnetism, electromagnetics, D/C and A/C circuits, optics, reflection, refraction, interference, diffraction, polarization.</td>
</tr>
<tr>
<td>203</td>
<td>Problem Solving for Physics 201</td>
<td>1</td>
<td>Prereq c// enrollment in Phys 201</td>
<td>Small class environment for students who desire focused attention on problem solving skills as applied to Phys 201.</td>
</tr>
<tr>
<td>204</td>
<td>Problem Solving for Physics 202</td>
<td>1</td>
<td>Prereq c// in Phys 202</td>
<td>Small class environment for students who desire focused attention on problem solving skills as applied to Phys 202 materials.</td>
</tr>
<tr>
<td>205</td>
<td>[P] Physics for Scientists and Engineers I - Honors</td>
<td>5</td>
<td>(3-4) Prereq Math 171</td>
<td>Calculus-based physics, honors section; mechanics, sound, and thermodynamics.</td>
</tr>
<tr>
<td>206</td>
<td>[P] Physics for Scientists and Engineers II - Honors</td>
<td>5</td>
<td>(3-4) Prereq Math 172, Phys 201 or 205</td>
<td>Calculus-based physics, honors section; electricity, magnetism, light, topics in modern physics.</td>
</tr>
<tr>
<td>303</td>
<td>Modern Physics I</td>
<td>3</td>
<td>Prereq Math 220 or c//; Phys 202</td>
<td>Quantum and relativity theories with applications to atomic, solid state, nuclear and elementary particle physics.</td>
</tr>
<tr>
<td>304</td>
<td>Modern Physics II</td>
<td>3</td>
<td>Prereq Phys 303</td>
<td>Continuation of Phys 303.</td>
</tr>
<tr>
<td>320</td>
<td>Mechanics</td>
<td>3</td>
<td>Prereq Math 315 or c//; Phys 102 or 202</td>
<td>Particle motion in one-, two-, and three-dimensions; motions of systems of particles; rigid body motion; Lagrange's equations.</td>
</tr>
<tr>
<td>330</td>
<td>Thermal Physics</td>
<td>3</td>
<td>Prereq Math 273; Phys 202</td>
<td>Thermal behavior of systems; energy and entropy; equations of state; changes of phase; elements of continuum and statistical approaches.</td>
</tr>
<tr>
<td>341</td>
<td>Electricity and Magnetism I</td>
<td>3</td>
<td>Prereq Math 315 or c//; Phys 202</td>
<td>Electrostatic fields, magnetic fields, dielectric and magnetic media.</td>
</tr>
<tr>
<td>342</td>
<td>Electricity and Magnetism II</td>
<td>3</td>
<td>Continuation of Phys 341. Maxwell's equations; electromagnetic waves, special relativity.</td>
<td></td>
</tr>
<tr>
<td>345</td>
<td>[P] Principles of Astronomy</td>
<td>3</td>
<td>Same as Astr 345</td>
<td></td>
</tr>
<tr>
<td>371</td>
<td>Mathematical Physics</td>
<td>3</td>
<td>Prereq Math 273, Phys 304</td>
<td>Mathematical techniques needed in 300-400- level physics courses, including vector analysis, matrices, Sturm-Liouville problems, special functions, partial differential equations, complex variables.</td>
</tr>
<tr>
<td>388</td>
<td>Environmental Physics</td>
<td>3</td>
<td>Prereq Math 171; Phys 101 or 201; 102 or 202</td>
<td>Basic physics concepts applied to environmental problems engendered by technology; physical understanding of the earth, resources; environmental changes induced by people.</td>
</tr>
<tr>
<td>410</td>
<td>Electronics</td>
<td>3</td>
<td>(1-6) Prereq Phys 102 or 202</td>
<td>Laboratory construction and investigation of electronic circuits employed in research instruments.</td>
</tr>
<tr>
<td>412</td>
<td>Modern Optics Laboratory</td>
<td>3-2-3</td>
<td>Prereq Phys 443 or c//</td>
<td>Fundamentals of experimental modern optics and applications in science and engineering.</td>
</tr>
<tr>
<td>415</td>
<td>[M] Quantum Physics Laboratory</td>
<td>3</td>
<td>(2-3) May be repeated for credit; cumulative maximum 6 hours</td>
<td>Prereq Phys 304. Experiments in modern and quantum physics, fundamental interactions of radiations with matter.</td>
</tr>
<tr>
<td>435</td>
<td>Astronomy and Astrophysics</td>
<td>3</td>
<td>May be repeated for credit; cumulative maximum 6 hours.</td>
<td></td>
</tr>
<tr>
<td>443</td>
<td>Optics</td>
<td>3</td>
<td>Prereq Phys 341 or c//; Polarization, interference, coherence, and diffraction phenomena of the electromagnetic spectrum; optics of solids; laser resonators; gaussian beams; ABCD matrices.</td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>Introduction to Quantum Mechanics</td>
<td>3</td>
<td>Prereq Math 315; Phys 303</td>
<td>Introduction to quantum theory with applications to atomic physics. Cooperative course taught jointly by WSU and UI (Phys 465).</td>
</tr>
<tr>
<td>461</td>
<td>Introduction to Atomic and Molecular Physics</td>
<td>3</td>
<td>Prereq Phys 304</td>
<td>Introduction to atomic and molecular physics; spectroscopy.</td>
</tr>
<tr>
<td>490</td>
<td>[M] Undergraduate Thesis</td>
<td>1</td>
<td>Preliminary thesis draft of a laboratory or library research experience, oral presentation, and final draft.</td>
<td></td>
</tr>
<tr>
<td>514</td>
<td>Optoelectronics Lab</td>
<td>1 V</td>
<td>(0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 3 hours.</td>
<td>Prereq graduate standing. Experiments with optical systems: Imaging, interference, coherence, information storage/processing, gas and solid state lasers, optical fibers, and communications systems.</td>
</tr>
<tr>
<td>515</td>
<td>Optoelectronics Lab II</td>
<td>2 V</td>
<td>(0-3) to 3 (0-9)</td>
<td>May be repeated for credit; cumulative maximum 3 hours. Experiments in optical physics, physical properties of light, laser physics, waveguides, quantum confined semiconductor structures and ultrafast dynamics and nonlinear optics.</td>
</tr>
<tr>
<td>521</td>
<td>Classical Mechanics I</td>
<td>3</td>
<td>Prereq Phys 320; 571 or c//.</td>
<td>Laws of motion as developed by Newton, d'Alembert, Lagrange, and Hamilton; dynamics of particles and rigid bodies. Cooperative course taught jointly by WSU and UI (Phys 521).</td>
</tr>
<tr>
<td>533</td>
<td>Thermal and Statistical Physics I</td>
<td>3</td>
<td>Prereq Math 440; Phys 330</td>
<td>Thermodynamic laws and potentials, kinetic theory, hydrodynamics and transport coefficients; introduction to statistical mechanics, ensembles, partition functions. Cooperative course taught jointly by WSU and UI (Phys 533).</td>
</tr>
<tr>
<td>534</td>
<td>Thermal and Statistical Physics II</td>
<td>3</td>
<td>Prereq Chem 531, 535; or Phys 533, 551</td>
<td>Phase transitions and critical phenomena, Ginzburg-Landau theory, Bose-Einstein condensation, superfluids, Fermi system, low-temperature expansions. Cooperative course taught jointly by WSU and UI (Phys 531).</td>
</tr>
</tbody>
</table>
573 Advanced Solid State Physics 3 Prereq Phys 534, 542, 552 or c//, 563, 571. Quantum theory of solids; Green's functions, correlation functions and advanced solid state physics. Cooperative course taught jointly by WSU and UI (Phys 541).

574 Quantum Optics 3 Prereq Phys 534, 542, 551. Nonlinear wave propagation theory applied to several nonlinear-optical phenomena; experimental techniques that prove a material's nonlinearity.

575 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).

576 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 561).


578 Physical Applications of Group Theory 3 Prereq Phys 551. Introduction to group theory with application to atoms, molecules, solids, and elementary particles; no previous knowledge of group theory assumed. Cooperative course taught jointly by WSU and UI (Phys 573), open to WSU students.

580 Seminar 1 May be repeated for credit. S, F grading.

581 Advanced Topcs 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.

591 Seminar in Computational Physics 1 May be repeated for credit; cumulative maximum 4 hours. Computational physics; numerical methods and physical application to supercomputers, mainframes, mini-, and microcomputers. S, F grading.

592 Wave Propagation Seminar 2 Prereq Math 440, 441. May be repeated for credit; cumulative maximum 4 hours. Waves in the continuum; elastic, plastic, and hydrodynamic waves; shock waves. S, F grading.

593 Seminar in Physics of Condensed Matter 1 May be repeated for credit; cumulative maximum 2 hours. Experimental and theoretical methods of study of matter in the condensed state and at interfaces. S, F grading.

594 Seminar in Solid-State Physics 1 May be repeated for credit; cumulative maximum 4 hours. Topics in the physics of solids; the experimental and theoretical study of the electronic and atomic structure of materials. S, F grading.

596 Seminar in Optical Physics 1 May be repeated for credit; cumulative maximum 3 hours. Current topics in experimental and theoretical aspects of optical physics. S, F grading.

597 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


Plant pathology is the study of plant diseases, including causes, economic consequences, epidemiology, and control. Opportunities for graduates in plant pathology include positions in research and development, teaching, extension, and sales. Plant pathologists are employed throughout the world by industries, governments, educational institutions, and private foundations.

A limited undergraduate program is designed to provide a broad background in the biological, physical, and agricultural sciences. However, most opportunities in plant pathology require advanced degrees. Students who intend to terminate university training with a baccalaureate degree are encouraged to enroll in the Integrated Pest Management curriculum.

The courses offered in this department are designed both to train students expecting to make plant pathology or mycology their professional field of specialization and to provide supplementary training for students in other biological and agricultural fields, particularly botany, crop science, genetics, horticulture, forestry, and entomology. Students who expect to become professional plant pathologists are advised to include in their undergraduate studies fundamental courses in bacteriology, botany, chemistry, genetics, physics, and zoology.

A professional career in plant pathology requires graduate training, and the four-year course outlined under the schedule of studies is basic for such later specialization. Students often enter advanced work in plant pathology following a major in biology, botany, crop science, genetics, horticulture, molecular biology, or similar areas as well as in plant pathology. Specialized areas of advanced study include mycology, nematology, virology, epidemiology, disease physiology, molecular biology of host-parasite relationships, ecology of disease development, biochemistry of pathogenicity, disease resistance, chemical control, and biological control. Research is conducted on diseases of grain crops, forage crops, forest trees, fruit, vegetables, ornamentals, and turf.

An interdisciplinary curriculum in Integrated Pest Management is available to those whose interests span the areas of plant pathology and pest management.

Department Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GEs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GEs. At least 40 of the total hours required for the bachelor's degree in this program must be in the 300-400-level courses.

The following list includes the departmental requirements for the undergraduate plant pathology curriculum. Students should consult their advisers for appropriate sequencing of courses and in selecting electives consistent with vocational and professional objectives. They should also check fulfillment of University and General Education Requirements.

PLANT PATHOLOGY DEGREE PROGRAM

(120 HOURS)

Freshman Year

First Semester

Biol 103 [B] (GER) 4

Second Semester

Department of Plant Pathology

(4)
Department of Plant Pathology

Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 107 3

Second Semester  
Biol 104 [B] (GER) 4
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
Math Proficiency [N] (GER) 3
MBioS 101 [B] (GER) 4

Sophomore Year  
First Semester  
Bot 120 [B] (GER) 4
Chem 240 4
Phys 101 [P] (GER) 4
SoILs 201 3

Second Semester  
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biol 372 4
Communication Proficiency [C,W] (GER) 3
CropS 101 3
Phys 102 [P] (GER) 4

Junior Year  
First Semester  
Bot 320 4
CropS 201 4
Hort 201 4
Social Sciences [S,K] (GER) 3
Complete Writing Portfolio

Second Semester  
Ag Ec 201 3
Arts & Humanities [H,G] (GER) 3
Bot 332 4
CropS 305 3
Engl 351 3

Senior Year  
First Semester  
Entom 340 3
MBioS 301 4
Intercultural [I,G,K] (GER) 3
Pl P 429 3
Ag Elective 3

Second Semester  
Tier III Course (GER) 3
Ag Electives 12

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.

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.

Description of Courses

Note that most plant pathology courses are offered on an alternate year only basis.

Plant Pathology

Pl P

309 Fundamentals of Plant Pathology 3 (2-3)  Prereq Biol 102 or Bot 120. Concepts and terminology associated with the classification, symptoms, causes, development, and control of plant diseases associated with irrigated crop production.

331 Forest Pathology 2 (0-6) Prereq Biol 103. Parasitic and nonparasitic diseases of forest and shade trees; life histories of fungi as related to diseases.

360 Crop Plant Problem Diagnosis 1 (0-3) May be repeated for credit; cumulative maximum 3 hours. Prereq CropS 305, Entom 340, Hort 304, 350, Pl P 309. Field assessment of crop plant problems; diagnosis of problems associated with crops growing in the Columbia Basin.

403 Advance Cropping Systems 3 Same as CropS 403. Credit not granted for both Pl P 403 and 503.

421 General Mycology 4 (2-6) Rec Biol 103 or Bot 120. 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 103 or Bot 120. Classification, symptoms, causes, epidemiology, and control of plant diseases. Credit not granted for both Pl P 429 and 529.

499 Special Problems V 1-4 May be repeated for credit.

503 Advance Cropping Systems 3 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 biochem or adv 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 Phytophacteryology 4 (3-3) Prereq MBioS 303; Micro 201. 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 to UI students (PlSc 514).

515 Seminar 1 May be repeated for credit.

521 General Mycology 4 (2-6) Graduate-level counterpart of Pl P 421; additional requirements. Credit not granted for both Pl P 421 and 521.

522 Basidiomycetes 3 (2-3) Prereq Pl P 421. Taxonomy, physiology, and reproduction of rusts, jelly fungi, smuts, and higher basidiomycetes. Cooperative course taught by WSU, open to UI students (Bot 575).

523 Ascomycetes and Fungi Imperfecti 3 (1-6) Prereq Pl P 421. Taxonomy, physiology, reproduction of ascomycetes, and fungi imperfecti. Cooperative course taught by WSU, open to UI students (Bot 576).

524 Lower Fungi 2 (1-3) Prereq Pl P 421. Taxonomy, phylology, physiology, and reproduction of aquatic and terrestrial phycymycetes and myxomycetes. Cooperative course taught by WSU, open to UI students (Bot 577).

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.

529 General Plant Pathology 3 (2-3) 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 2 Prereq MBioS 301, 303. Genetic and molecular biological aspects of host-pathogen interactions. Cooperative course taught by WSU, open to UI students (PlSc 535).

541 Analytical Methods for Phytopathological Research 3 (2-3) Prereq Micro 201 or Pl P 429. Survey of research techniques in plant pathology, including history and principles. Cooperative course taught by UI (PlSc 541), open to WSU students.

551 Diseases of Plants 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.

Program in Plant Physiology


Graduate study leading to degrees of Master of Science in Plant Physiology and Doctor of Philosophy is offered as an interdisciplinary curriculum by the graduate faculty from the Departments of Crop and Soil Science, Horticulture and Landscape Architecture, Molecular Biosciences, Plant Pathology, and the Institute of Biological Chemistry. The objectives of the program are to provide the graduate student with a broad knowledge in plant physiology 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 photorespiration, nitrogen fixation, phytochemistry, the physiology of vascular plants, metabolism, plant pathogen interactions, hormonal interactions and regulation of growth, crop production physiology, and ecological physiology as well as related areas in agriculture and biology.

Students entering the program must have completed their baccalaureate degree with training in one year each of elementary biology or botany, and physics, chemistry through one semester of organic chemistry, one semester each of plant physiology and genetics, and mathematics (through calculus). Limited undergraduate deficiencies may be remedied by taking the appropriate

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courses upon enrollment in the graduate program on a provisional basis. Degree requirements for both the MS and PhD degrees include courses in advanced plant physiology, plant morphology and anatomy, and biochemistry. To meet the minimum requirements of core course credit in the Graduate School, elective courses are chosen as approved by the student's adviser 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 plant physiology or to any participating academic unit. Should the latter route be followed, preference for the Program in Plant Physiology must be indicated and, if possible, the research area of interest identified.

The program offers flexibility for students with varied backgrounds in chemistry, biochemistry, plant physiology, molecular biology, botany, genetics, biology, and the agricultural sciences to pursue advanced training in plant physiology, 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 plant physiologists and plant scientists representing a wide range of research interests and provides the student with a broad choice of specialized facilities which are available in the cooperating academic units.

Financial support for students in the program is determined within the administering academic unit and not by plant physiology. Participating faculty may provide support through individual grants and contracts. Every effort will be made to inform applicants of these opportunities.

Course requirements are drawn from existing courses offered by cooperating departments and programs. In addition, a seminar is held weekly during each semester.

### Department of Political Science

**Acting Department Chair**, O. Marenin; **Professors**, T. Cook, M. Cottam, L. LeLoup, N. Lovrich, D. Nice; **Associate Professors**, A. Appleton, C. Clayton, F. Lutze, A. Mazar, T. Preston, G. Russell (Criminal Justice Director), S. Stehr (Graduate Director); **Assistant Professors**, D. Brody, G. Capowich, R. Jackson, K. Mason, M. Pickerill, E. Weber; **Instructor**, M. Erp.

Courses in political science are offered in political institutions (presidency, congress, the courts, political parties, mass media), public policy formation and evaluation, public law, civil liberties, international relations (foreign policy, strategic policy, conflict resolution), comparative government (area studies, post-industrial societies, cross-national comparisons), political philosophy and methodology.

The department offers courses of study leading to the degrees of Bachelor of Arts in Political Science, Master of Arts in Political Science, and Doctor of Philosophy.

The department is the locus of the Criminal Justice Program, which offers courses of study leading to the Bachelor of Arts in Criminal Justice and the Master of Arts in Criminal Justice. For details, see the criminal justice section of this catalog.

### 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 research 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.

### Minor and Second Major

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 g.p.a. of 2.0 in the political science courses is required.

### 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.

### Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

At least 40 of the total hours required for the bachelor’s degree in these programs must be in 300-400-level courses.

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.

### GENERAL POLITICAL SCIENCE DEGREE PROGRAM (123 HOURS) FYDA

36 hours in Pol S, at least 15 of which must be earned at WSU required.

#### Freshman Year

**First Semester**

<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>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 A [GER]</td>
<td>3</td>
</tr>
<tr>
<td>Pol S 101 S [GER]</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Communication [C W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 A [GER]</td>
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</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Pol S 102 S [GER]</td>
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### Sophomore Year

<table>
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<th>First Semester</th>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Pol S 103 [S] (GER)</td>
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</tr>
<tr>
<td>Science Elective (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Physical [P] Sciences (GER)</td>
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<tr>
<td>Pol S Elective</td>
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#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>300-400-level Arts &amp; Humanities or Social Sciences Elective</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Pol S Elective [M]</td>
<td>3</td>
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<tr>
<td>Physical [P] Sciences (GER)</td>
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<tr>
<td>Pol S Elective</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<table>
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<tbody>
<tr>
<td>300-400-level Arts &amp; Humanities or Social Sciences Elective</td>
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</tr>
<tr>
<td>300-400-level Pol S Elective [M]</td>
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<tr>
<td>Cpt S (GER) Stat Elective</td>
<td>3</td>
</tr>
<tr>
<td>Engl 201 [W], 301 [W], or 402 [W] (GER)</td>
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<tr>
<td>Pol S Elective</td>
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#### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<td>300-400-level Arts &amp; Humanities or Social Sciences Elective</td>
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<tr>
<td>300-400-level Pol S Elective</td>
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<tr>
<td>Electives</td>
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<th>Second Semester</th>
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<td>300-400-level Arts &amp; Humanities or Social Sciences Elective</td>
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<tr>
<td>300-400-level Pol S Elective</td>
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<tr>
<td>Tier III Course (GER)</td>
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<tr>
<td>Elective</td>
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</table>

### Second Semester

**Global Politics Degree Program (120 Hours)**

33 hours in Pol S, at least 15 of which must be earned at WSU required.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>English 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</td>
</tr>
<tr>
<td>Pol S 101</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Econ 101 [S] or 102 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Pol S 102</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Crm J 101</td>
<td>3</td>
</tr>
<tr>
<td>Phil 201</td>
<td>3</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Pol S 103</td>
<td>3</td>
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<tr>
<td>Elective</td>
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<tr>
<th>Senior Year</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 201 or 301 [W] (GER)</td>
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<tr>
<td>Pol S 300</td>
<td>3</td>
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<tr>
<td>Pol S [M] Course Elective</td>
<td>3</td>
</tr>
<tr>
<td>Public Speaking or Argumentation Elective</td>
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</tbody>
</table>

### Description of Courses

#### Pol S

**101 [S] American National Government**

Introduction to American politics exploring the constitution, political institutions and actors, the policy making process, and various public policies.

**102 [S] Introduction to Comparative Politics**

Nature of the state; fundamental problems of government and politics; ideological and institutional comparison of democracies and dictatorships.
103 [S] International Politics 3 Creation and operation of national, international, and supranational communities; major world problems since 1945.
198 [S] Political Science Honors 3 Open only to students in the Honors College.
206 State and Local Government 3 Institutions, processes, and problems, with special reference to the state of Washington.
300 The American Constitution 3 Prereq Pol S 101. Constitutional principles as established by the Supreme Court and related political developments.
301 Political Simulations 3 Prereq Pol S 101. Preparation for and participation in political simulations.
305 [S] Gender and Politics 3 Role of gender in political behavior; voting and political participation; women as subjects and objects of political systems.
314 National States and Global Challenges 3 Comprehensive introduction to the processes of the economic and political integration of the European Union.
316 American Public Policy 3 Institutions, processes, and substantive issues of American public policy and policy formation.
317 Mass Media and the Political Process 3 Relationship between the media and American political institutions and the public.
324 [I] Black Politics 3 Political culture, roles, and strategies of Black people in the United States; impact upon public policy.
330 Women and the Law 3 Same as W St 330.
333 [S] Development of Marxist Thought 3 Marxist theory from the original writing of Marx and Engels to contemporary developments.
340 Introduction to Public Administration 3 Prereq Pol S 101. Basic theories of administrative organization, relationships, and behavior.
375 Chicano/Latino Politics 3 Same as CAC 359.
381 Crime and Justice in the Media 3 (2-2) Same as Crm J 381.
401 Topics—Study Abroad 3
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.
403 Topics—Study Abroad 3
405 [M] Comparative Criminal Justice Systems 3
406 Topics—Study Abroad 3
408 Topics—Study Abroad 3
409 Topics—Study Abroad 3
411 Topics—Study Abroad 3
413 Latin American Governments 3 Institutions and political processes of selected Latin American republics.
415 Topics—Study Abroad 3
416 Policy Analysis 3 Analysis of public policy formation, evaluation and implementation.
417 The Electorate 3 Measurement and interpretation of electoral behavior; factors influencing the electorate; voter competence; representation of the electorate.
418 Issues in International Development 3 Same as Anth 418. Cooperative course taught by WSU, open to UI students (PolSc 462).
420 Political Parties and Pressure Groups 3 Theories of parties; characteristics of American parties; organization and behavior of pressure groups.
427 [M] 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 formation.
432 [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.
435 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 (PolSci 501). F grading.
437 Classical Political Thought 3 The development of political philosophy from the pre-Socratics to Machiavelli.
438 [M] Recent Political Thought 3 The development of political thought since Machiavelli.
439 Administrative Jurisprudence 3 Study of the origins, nature, and practice of justice and law in public administration.
445 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 (PolSc 445).
446 Public Budgeting 3 The government budget as an instrument of politics, planning and control; organizing for democratic accountability.
447 [M] Comparative Public Administration 3 Public administration systems in Europe, Japan, Socialist and developing countries; origins and development.
448 Urban Politics and Policy 3 Urban political processes and policies; intergovernmental relationships; impact of urban reform.
450 The Legislative Process 3 Role of legislatures in a democratic system; problems of representation; election and tenure of lawmakers; legislative organization and procedures.
455 The Presidency 3 Organization and processes of executive institutions at the national level; uses and limits of executive power.
456 Political Leadership 3 An analysis of political leadership, including different conceptions of leadership, recruitment, leader-follower relations, tactics, and evaluation of leaders.
460 [M] Politics of the Third World 3 Issues and problems of political development and international relations common among developing nations.
472 [M] Politics of Postindustrialized Nations 3 Government and politics of postindustrial societies, including West Europe and Japan.
476 Revolutionary China: 1800 to Present 3 Same as Hist 476.
495 Topics in Political Science V 1-3 May be repeated for credit; cumulative maximum 6 hours. Selected issues and topics in political science.
496 Computer-aided Research in Political Science 2 Mainframe and microcomputer applications for political science research; practical application. S, F grading.
497 Political Science Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. Prereq Pol S 101 or 206; by interview only. Participation as intern in federal, state, or local governmental units or nonprofit/ public organization. S, F grading.
498 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.
499 Special Problems V 1-4 May be repeated for credit; cumulative maximum 6 hours. By interview only. Selected topics and issues. S, F grading.
501 The Scope of Political Science 3 Prereq 12 hours Pol S. Historical development and present status of the discipline; contemporary issues and future trends. Cooperative course taught by WSU, open to UI students (PolSc 530).
502 Seminar in Normative Theory 3 Elements of normative theory developments; examination of bases of controversies and approaches in the modern literature using historical sources.
503 Introduction to Political Science Research Methods 3 Prereq 12 hours Pol S; Soc Sci 321. Social science research design topics, measurement, sampling, data sources, experimental and quasi-experimental designs, field and historical designs, content analytic designs.
504 Quantitative Methods in Political Science and Criminal Justice 3 Prereq introductory statistics course. Applied statistical skills, enabling understanding of substantive political and social questions.
505 Comparative Criminal Justice Systems 3 Same as Crm J 505.
510 Seminar on American Institutions and Processes 4
511 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.
512 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.
513 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.
514 Seminar in Public Policy 3 Examination of central questions in public policy including what is the nature of public policy, what is policy analysis, why does government intervene in society?

515 Governmental Policy and Program Analysis 3 Techniques used to analyze policy alternatives and to evaluate programs; developing program objectives, management by objectives, productivity analysis, program evaluation, and policy analysis.

524 Topics in Applied Policy Studies 3 Theories of international politics applied to American foreign policy. Cooperative course taught by WU, open to UI students (PolSc 501).

531 Seminar in International Security 3 International security and arms control politics, negotiations, agreements. Cooperative course taught by WU; open to UI students (PolSc 561).

537 Seminar in International Political Economy 3 Institutions, politics, and decision-making processes in managing international economic relations.

539 Advanced Issues in Comparative Politics 3 Advanced issues seminar in international and comparative politics.

540 Concepts and Methods in Comparative Politics 3 Concepts and methods (cross-national analysis, case study approaches) in comparative politics.

548 International Development and Human Resources 3 Same as Anth S19.

553 The Political Science Profession 1 Methods, problems, and purposes of teaching, research, and vocation in political science. S, F grading.

556 Seminar in Public Administration 3 Cooperative course taught by WU, open to UI students (PolSc 501).

557 Administrative Law and Regulation 3 Rule-making, adjudication, and other modes of regulation of administrative agencies; judicial review and Congressional oversight of administrative acts. Cooperative course taught by UI (PolSc 552), open to WU and UI students.

579 Graduate Internship V 2 (0-6) - 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. Prereq Crm J or Pol S graduate student. Internship in federal, state, or local government unit. 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

Associate Professor and Coordinator, D. F. Moffett.

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 (Chen 105/106 or 115/116)
3. Organic chemistry (Chen 340/341/342)
4. Physics (Phys 101/102 or 201/202)
5. Introductory biology (Biol 103/104)
6. Molecular biology (MBioS 303 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.

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 adviser usually is able to suggest a schedule of studies to meet the needs of the individual students. Medical schools also expect a good selection of non-science courses on the student’s transcript.

Additional information can be obtained from D. F. Moffett, Associate Professor and Coordinator, Premedical Curriculum, Washington State University, 236 Morrill Hall, Pullman, WA 99164-3524.

Preveterynarian 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 the catalog under the College of Veterinary Medicine. Admission to the veterinary program is highly competitive so students are encouraged to choose their major carefully. While there is no baccalaureate degree in pre-veterinary medicine offered, many departments have programs that allow students to prepare for admission to veterinary school and earn a baccalaureate degree simultaneously. See the individual departments for specific plans of study.
Preparation for veterinary school requires a minimum of two years of college work; however, only a few exceptional students are accepted with this abbreviated background. A minimum of three years of college or completion of a baccalaureate degree is strongly recommended.

Department of Psychology


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 which are related to their respective fields. Also, it is possible to combine a major in psychology with the certificate program in alcohol studies or with a minor in alcohol studies.

Alcohol studies offers an interdisciplinary sequence of courses designed to provide a broad knowledge concerning the etiology, development, treatment, and prevention of alcohol addiction and abuse. Students work on a baccalaureate degree of their choice while also completing the requirements for either the minor or the certificate in alcohol studies.

Upon completion of the academic requirements, students pursuing the certificate in alcohol studies must complete an internship in a state-approved alcoholism treatment facility (a potential job setting). A person may certify as a major after completion of 30 semester hours, Math 140, 171, or 210 with a C or better, and a cumulative g.p.a. of 2.5 or better. Students who are considering a psychology degree should, as early as possible in their academic careers, seek consultation with a faculty adviser in the Department of Psychology for assistance in planning their individual programs.

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.

PSYCHOLOGY DEGREE PROGRAM (120 HOURS) ✓FYDA

Freshman Year
First Semester
Biol 101 [B] AND 105 [B], or Biol 102 [B], or 103 [B] (GER) 4
Engl 101 [W] (GER) 3
Intercultural [L,G,K] (GER) 3
Psych 105 [B] (GER) or 198 3
Second Semester
Arts & Humanities [H,G] (GER) 3
Communication [C,W] (GER) 3
GenEd 110 [A] (GER) 3
Math 140 [N], 171 [N], or 210 [N] (GER) 3 or 4
Social Sciences [S,K] (GER) 3
Sophomore Year
First Semester
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
GenEd 111 [A] (GER) 3
Physical Sciences [P] (GER) 4
Psych 311 4
Second Semester
Arts & Humanities [H,G], Intercultural [L,G,K], or Social Sciences [S,K] (GER) 6
Biological [B] or Physical [P] Sciences (GER) 4
Psych 312 [M] 4

Junior Year
First Semester
Group I Psych Elective 3
Group II Psych Elective 3
Electives 7
Complete Writing Portfolio

Second Semester
Group I Psych Elective 3
Group II Psych Elective 3
300-400-level Non-Psych Electives 10

Senior Year
First Semester
Group I Psych Elective 3
Psych Elective 3
Tier III Humanities or Social Sciences Course (GER) 3
300-400-level Non-Psych Electives 7
Second Semester
Non-Psych Electives 15
Psych Electives 1-4

✓ Fulfills GER and department math requirement. Must be completed with C or better.

1 Please note that if you take only 3 credits of science elective, you will need to take another 1-credit science elective (i.e. Biol 201).


3 Writing in the Major Courses: Psych 312, 328, 401, 440, 473. Psych 312, 401 and 473 can be used as Writing in the Major and toward the 30 required Psych credits.

Recommended Courses
One 3-hour course from Psych 445, 497, 498, 499. Psych electives will be chosen in consultation with adviser.

Numerous electives during the first two years mathematics, biology, physics, chemistry, literature, history, philosophy, sociology, anthropology contribute substantially to the study of psychology. Again, consultation with a faculty adviser is recommended prior to selecting either Psych courses or supporting courses in other areas.

Students in the Honors Program and transfer students should ask about modifications in the above schedule for the Psych majors. Students interested in combining a Psych major with the certificate program in Alcohol Studies should inquire at the office of the Department of Psychology.

Minors
Minor in Psychology. The minor in Psych may be certified after the completion of 60 semester hours. It requires 18 credit hours in Psych; of which at least 9 must be in graded 300-400-level courses.

Psych 105 or 198 is required, and a statistics or research methods course is strongly recommended; electives must be chosen in consultation with a psychology adviser.

Teaching Minor in Psychology. For the Psych minor in secondary school teaching, see the Teaching and Learning section of this catalog.
Minor in Alcohol Studies (16 hour minimum). Alcs 365, 366; Alcs/Psych 444 or S W 493; PharP 217; Psych 321 or 333; Psych 440 or S W 393. Recommended electives: Alcs 367, 499, Psych 220, 324, 350; S W 190, 396, 495; Soc 360. Students must obtain a grade of C or better in each of the required and recommended courses taken toward completion of the minor in alcohol studies.

Certificate in Alcohol Studies. Students must complete all requirements for the minor in alcohol studies plus Alcs 447 and 5 W 490 (10-15 credits). Students must obtain a grade of C or better in each of the required and recommended courses in order to enroll in S W 490 and to qualify for the alcohol studies certificate.

Preparation for Graduate Study
Students who contemplate work leading to advanced degrees are urged to confer as early as possible with a psychology faculty adviser. Graduate programs in psychology require a solid background in mathematics, natural sciences, physics, philosophy, and social sciences as well as appropriate preparation in psychology itself.

Description of Courses

Psychology

Psych
105 [S] Introductory Psychology 3 Contemporary psychology; biological, social, and physical influences on normal and abnormal human behavior.

106 Psychology Applied to Daily Living: Dealing with Friends, Alcohol, and Sex 1 Prereq Psych 105 or c/f. Application of psychological procedures to the problems of group living, alcohol use, sexual decision making and related social issues.

108 [S] Psychology Honors 3 May substitute for Psych 105 as a preq to later courses. Open only to students in the Honors College.

109 Psychological and Everyday Questions 3 Prereq Psych 105. Scientific analysis of everyday questions; topics from Psych 105 will be re-examined for their implications for practical solutions.

120 Psychology of Stress 3 Prereq Psych 105. Causes and characteristics of stress; stress prevention and management; psychological aspects of health and illness.

230 Human Sexuality 3 Preq Psych 105. Sexual identity in personal development; personal, cultural, biological influences on sexual identity and behavior; fertility, reproduction, sexual functioning, sexuality and personality.

265 Biopsychological Effects of Alcohol and Other Drugs 3 Preq Biol 102 or 103; Psych 105. Biopsychological effects of the major classes of abused and psychotherapeutic drugs, including alcohol, stimulants, sedatives and hallucinogens.

301 Seminar in Psychology V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours Psych.

306 Industrial/Organizational Psychology 3 Preq Psych 105. Individual and group goals; organizational structure and theory; leadership, design of jobs; personnel selection and training; engineering psychology.

307 Human Factors 3 Preq Psych 105 or enr major. Human limitations and capabilities in architectural and engineering design; system analysis.

309 [S,D] Cultural Diversity in Organizations 3 Preq Psych 105. Psychology applied to cultural diversity in organizations; interpersonal and intergroup relationships; diversity training; EEO legislation and affirmative action.

310 Pseudoscience and Human Behavior 3 Preq Psych 105. Evaluation of scientific claims in the behavioral sciences and everyday life.

311 Elementary Statistics in Psychology 4 Preq Math 103, 107, 140, 171, 201, 202, 210, or 222 with a C or better. Descriptive statistics, probability, and inference; design and interpretation of research.

312 [M] Experimental Methods in Psychology 4 (3-3) Preq Psych 105; Psych 311 or Stat course. Designing, conducting, and reporting research in selected areas of experimental psychology.

321 Introduction to Personality 3 Preq Psych 105. Theories, concepts, methods, discoveries in psychology of personality.

324 [S,D] Psychology of Women 3 Preq Psych 105. Socialization and sex roles of women; a psychological perspective.

328 [M] Self Control 3 Preq Psych 105. Analysis of self-control problems; application of behavioral principles to student-conducted projects.

333 Abnormal Psychology 3 Preq Psych 321 or 414; 6 hours Psych. Problems of abnormality from traditional and evolving points of view; types, therapies, outcomes, preventive techniques.

350 [S] Social Psychology 3 Preq Psych 105 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 Preq Psych 105. Introduction to biological and psychosocial influences on child development.

363 Psychology of Aging 3 Preq Psych 105; Psych 105. Psychological processes of aging; changes in sensory motor, cognitive motivational and personality characteristics; research methodologies for the study of aging.

365 Problems of Alcohol Addiction and Abuse 3 Preq Psych 105 or Soc 101. Current theories of etiology and epidemiology of alcoholism and alcohol abuse; treatment and prevention.

366 Treatment Approaches in Alcohol Abuse/Alcoholism 3 Preq Psych 365. Psychosocial, medical, pharmacological treatment modalities; criteria for assessment/diagnosis; treatment plan; case management; family involvement; different support systems; aftercare plans.

372 [B] Introduction to Physiological Psychology 3 Preq Biol 102 or 103; Psych 105. Functional relationship between nervous system and behavior; integrated organ systems, sensory processes, and investigative procedures. Occasional lab meetings required; see instructor for times.

384 Psychology of Perception 3 Preq Psych 105. Perception of size, depth, form, shape; illusions, contrast; historical and modern theories and research; applications and demonstrations.


403 Cultural Issues in Psychology 3 Same as CAC 403.
Department of Psychology

367 Special Topics in Alcoholism 3 May be repeated for credit; cumulative maximum 6 hours. Prereq AlcSt 365, 366. By interview only. Selected current topics in alcoholism and alcohol-related problems.

444 Basic Helping Skills 2 (0-6) Same as Psych 444.

477 The Practice of Alcoholism Counseling 2 Prereq completion of AlcSt minor. By interview only. Assessment; therapeutic interventions; record keeping/report writing; regulations governing alcoholism facilities; professional, ethical, legal issues; professional, agency, and community relations.

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

Department of Rural Sociology

Professor and Department Chair, A. K. Cook; Professors, D. A. Dillman, R. Dunlap, E. P. Fiske, V. Gecas, K. Gray, R. McDaniel, D. Youmans; Associate Professors, R. A. Jussaume, Jr., L. Lutzenhiser.

The Department of Rural Sociology offers courses and a minor in the area of community studies. These are designed to help students increase their knowledge of how community-based social structures influence human behavior, how and why community development efforts succeed or fail, how the globalization of the world's economic, political, and social systems are affecting the quality of life in communities worldwide, and how community conflicts may be resolved successfully. The courses and the minor are intended to help prepare students for effectively living and working in communities and for working to influence community development and change.

Minor in Community Studies

The department offers a minor in community studies. The minor requires 18 hours, 3 of which must come from RS 334, 335, 336, or Soc 330; 3 hours from Anth 418, H 410, or RS 423, 431, 435, 441. The remaining 12 hours may come from any of the above courses or from: AgEc 320; Arch 202; ES/RP 335, 486; H D 205; NATRS 312, 438; Pol S 316, 416; RS 391, 491; Soc 301, 331, 332, 424. Please contact the department at (509) 335-8623 or akcook@wsu.edu for more information.

Description of Courses

Rural Sociology

334 [S] Principles of Community Development 3 Prereq social science course, sophomore standing. Factors influencing how communities grow and decline and the ways in which social interventions influence these outcomes.


336 [S] Agriculture, Environment and Community 3 Prereq sophomore standing, completion of one social science course. Examines interdependencies between farming/ranching, the natural environment and human communities including perspectives on sustainable agriculture.

391 Special Topics V 1-3 May be repeated for credit; cumulative maximum 3 hours. Prereq 3 credits in social sciences, sophomore standing. Topics in rural sociology or community studies.

423 Fundamentals of Participatory Research 3 Prereq sophomore standing, two social science courses. Principles/methods of involving community/group members in knowledge generation to understand local issues while building local capacity. Credit not granted for both RS 423 and 523.

431 [T,D] The Demographics of American Diversity 3 Prereq junior or senior standing; completion of all GERs. How trends in diversity in American society are changing over time; the demographic forces underlying these trends and debates on these.

435 Resolving Environmental Conflicts 4 (3-3) Prereq junior standing, two social science courses. Introduction to environmental conflict resolution via readings, discussions, simulation role plays and required papers; emphasis on interest-based approaches. Credit not granted for both RS 435 and 535.

441 Local Impacts of Global Commodity Systems 3 Prereq junior standing, two social science courses. Theories of globalization, its social, political and economic dimensions, and its impact on people and communities. Credit not granted for both RS 441 and 541.

491 Advanced Special Topics V 1-3 May be repeated for credit; cumulative maximum 3 hours. Prereq 6 credits in social sciences. 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 RS 423; additional requirements. Credit not granted for both RS 423 and 523.

535 Resolving Environmental Conflicts 4 (3-3) Prereq graduate standing. Graduate-level counterpart of RS 435; additional requirements. Credit not granted for both RS 435 and 535.

541 Local Impacts of Global Commodity Systems 3 Prereq graduate standing. Graduate-level counterpart of RS 441; additional requirements. Credit not granted for both RS 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 Sociology


Courses in sociology are designed to provide the student with a better understanding of what makes people and groups of people behave the way they do. Sociology studies the groups people form, the behavior and interaction of these groups, traces their origin and growth, and analyzes the influence of group activities on individual members. Some knowledge of sociology is widely regarded as a useful supplement to the course work in most fields. The course of study for majors is flexible enough to incorporate a variety of individual interests, such as deviance and criminology, the family, social welfare and social policy, and environmental sociology.

Majors may select one of eight options for specialized study: I. General Sociology; II. Social Research and Data Analysis; III. Law and Social Control; IV. Society, Environment and Technology; V. Personnel and Human Relations; VI. Business and the Economy; VII. The Family as an Institution; VIII. Social Welfare: Social Casework or Community Organization. These options are described below. The undergraduate sociology major provides excellent preparation for careers in a variety of occupations, including public relations, teaching, positions in government, social agencies, and industry; or as a foundation for careers in professions such as architecture and community planning, counseling, law, medicine, the ministry, politics, or public administration.

The department offers courses of study leading to the degrees of Bachelor of Arts in Sociology, Master of Arts in Sociology, and Doctor of Philosophy.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Students must meet the graduation requirements of the College of Liberal Arts. They are encouraged to make a broad and balanced sampling of GER courses to meet the university's goal for a general education, as well as to explore or confirm possible major and career interests.

Major

A bachelor's degree in sociology requires a minimum of 31 hours in which students must maintain a C average. Students may choose one of the following eight options, depending upon personal interests. All majors (except those selecting the social welfare option) must complete five required core courses in sociology, as well as five required and/or elective courses in their chosen option areas. Soc 366 cannot be counted for sociology credit. In addition to the required courses and recommended electives in sociology, students must earn 24 hours in related fields, half of which must be in 300-400-level courses. Selection of related fields from an approved list of courses in consultation with a faculty adviser makes possible the individualization of a student's major program according to personal interests and career goals.

Required Core Courses

The following four courses are required of all majors selecting Options I-VII.

Soc 101 Introduction to Sociology 3
Soc 320 Introduction to Social Research 3
Soc 321 Quantitative Techniques in Sociology 1 4
Soc 410 Development of Social Theory 3
Option I. General Sociology
This track introduces students to the study of society and its effect upon individual behavior. It provides a general background adaptable to a variety of interests and occupational goals. Students may complete their major within this track or begin here and switch to a different track should their interests change. Six additional Soc courses.

Option II. Social Research and Data Analysis
The courses in this track prepare students who wish to take jobs in research and data analysis or who intend to continue their education in graduate school. The track places special emphasis upon the methods used in data collection as well as the foundations for sociological theory and analysis. Students who complete this track will be able to work as research assistants and technicians or pursue graduate work in sociology or any of the related social sciences.
Soc 420 is required and five from Soc 340, 343, 350, 360, 371, 421, 433 are recommended.

Option III. Law and Social Control
This track is designed for students who are interested in research or other employment in public and private social control institutions. Examples might include community social action programs, correctional counseling, juvenile job programs and other youth programs, and programs aimed at alcoholism and drug abuse.
Sociology courses in this track examine theories, research and data concerning a variety of social problems and forms of deviant behavior, such as crime and juvenile delinquent gangs and youth subcultures, suicide, mental health, drug use and abuse, poverty, race and ethnic relations, and societal responses to these problems.
Soc 360 is required and five from Soc 340, 361, 362, 364, 365, 424, 442, 480 are recommended.

Option IV. Society, Environment and Technology
This track is designed for students interested in the interrelationship between society and the natural and technological environments. Increasingly many social problems, political debates and public policy issues are tied to concerns about the physical environment. The use of resources, the protection of species and habitats, the application of technologies for production and consumption, and the disposition of material wastes are environmental concerns important to sociology.
The continued rise of environmental concerns has resulted in the passage of many environmental laws and regulations, the establishment of many private and public environmental agencies, and the growth in community and public interest groups. Students completing this track will be prepared for employment in a wide variety of private and public agencies with an environmental mission, for example, local and state departments of ecology, community recycling programs, environmental action groups, consulting firms, and lobbying organizations.
The courses in this option, while focused on the environment and technology, are aimed at a balance between sociological theory, empirical research methods and substantive investigations.
Two from Soc 331, 415, 430 are required and four from Soc 331, 332, 364, 415, 424, 430, 433, 474 are recommended.

Option V. Personnel and Human Relations
All kinds of organizations hire people who manage the utilization of human resources from initial recruiting, hiring, training and development to separation or planning for retirement. These personnel managers help to determine company policies, the design of work situations, and methods of developing more efficient and desirable work environments. They need to understand the operation of large bureaucracies and the impact organizations have on people who work within them. A personnel manager is only one example of a human relations worker who must understand employees' and employers' points of view and work to meet the needs of both groups.
Sociological knowledge about people and how they interact in groups as well as how individuals and groups are affected by their social environment is necessary for anyone who works in the general area of human relations. Other important skills needed for this work are the abilities to observe, analyze, evaluate, and change behavior as well as the ability to communicate accurately in writing and speaking.
Soc 350 is required and five from Soc 270, 343, 351, 356, 365, 371, 384, 446, 455, 480 are recommended.

Option VI. Business and the Economy
There are many jobs in the business world that sociology graduates can fill very successfully. They are found in banks, insurance companies, health care organizations, hospitals, commercial recreation, merchandising and sales, real estate, as well as local government.
Individuals who want to work in any of these areas will be interested in the business and economy track in sociology. They will gain essential knowledge about complex organizations and society, professions and occupations, public opinion, social inequality, population trends, and minority cultural groups. In addition to sociological knowledge, effective employees in business need good oral communication skills, an ability to write clearly, analytical and problem solving skills, the ability to relate to other people, and a broad understanding of how people interact in their social environments.
One of Soc 343 or 442 is required and five from Soc 331, 340, 343, 364, 373, 384, 418, 424, 432, 433, 442, 446, 474, 480 are recommended.

Option VII. The Family as an Institution
This track focuses on the family as an institution and the social structure in which families are embedded. The information contained in the course work is designed to provide students with appropriate backgrounds to seek jobs in social service agencies. It also provides a foundation for further study in the areas of family counseling or social work. The recommended sociology courses provide knowledge related to marriage, family dynamics, gender issues and societal changes and institutions.
Soc 150 and 351 are required and four from Soc 340, 350, 356, 384, 453 are recommended.

SOCIOLOGY DEGREE PROGRAM (121 HOURS) FYDA
This is a prototype of one of many ways to complete the Sociology Degree Program in four years. The programs has built-in flexibility, and students should consult their advisers regarding other acceptable course plans.

Freshman Year

<table>
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<tr>
<th>First Semester</th>
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<tr>
<td>Cognate Class</td>
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<tr>
<td>Soc 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Soc 202 [W] (GER)</td>
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</tr>
<tr>
<td>Communication [C,W] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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Sophomore Year

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<td>Arts &amp; Humanities [H,G], or Social Sciences [S,K] (GER)</td>
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<td>Soc 343, 350, 365, 384, 446, 455, 480 (GER)</td>
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<td>Elective</td>
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<tr>
<th>Second Semester</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>Physical Sciences [P] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<td>Elective</td>
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Junior Year

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<tr>
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<td>Soc 320</td>
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<td>Soc Electives</td>
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<td>Complete Writing Portfolio</td>
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<th>Hours</th>
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<tr>
<td>Related Field Electives</td>
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Senior Year

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<th>Hours</th>
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<td>Related Field Electives</td>
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<td>Soc Electives</td>
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<td>Soc 410</td>
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<tr>
<td>Tier III Course (GER)</td>
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</table>

Option VIII. Social Welfare
This track is intended to provide students with appropriate training for employment in areas such as social welfare delivery services, public policy analysis, needs assessment, or social impact assessment. Two sequences are provided below.

A. Social Casework
Preparing students to gain knowledge and attitudes appropriate to enable them to assist clients who wish to make behavioral change is of major importance in this sequence. The National Association of Social Workers has identified specific goals for which an individual social work practitioner needs specific knowledge in order to achieve. They are:
A. To enhance problem-solving, coping and developmental capacities of people;
B. To link people with systems that provide resources, services and opportunities;
C. To promote effective and humane operations of systems;
D. To develop and improve social policy.

During the first two years, students will be expected to concentrate on General Education Requirements. In the third year the student will complete required courses and in the fourth year will spend a full semester in an agency field placement.

Required Courses: SW 190, 390, 393; 395 or 396; 490, 492, 493, 495 or 496; Soc 101, 320, 340, 351.

**B. Community Organization**

This sequence is intended for the student who wishes to supplement the social welfare option with a specialization in the area of community organization. Graduates with these skills could be called upon within their local communities to provide leadership in major problem-solving tasks. Students intending to acquire a degree in this sequence could apply their skills in either employment or volunteer services. During the first two years, students are expected to concentrate on meeting GERs. In the third year the student will complete required courses and in the fourth year spend a full semester in an agency field placement.

Required Courses: SW 190; 390 or 393; 395, 490, 492, 493, 495 or 496; Soc 101, 320, 321, 340, 351.

**SOCIAL WELFARE DEGREE PROGRAM (122 HOURS)**

**FYDA**

This is a prototype of one of many ways to complete the Sociology Degree Program in four years. The programs has built-in flexibility, and students should consult their advisers regarding other acceptable course plans.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [K] (GER)</td>
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</tr>
</tbody>
</table>

**Second Semester**

| Arts & Humanities [H,G] (GER) | 3 |
| Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) | 3 |
| Biological Sciences [B] (GER) | 4 |
| Communication [C,W] (GER) | 3 |
| GenEd 111 [A] (GER) | 3 |

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER) and Related Field Elective</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Related Field Elective</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Soc 101</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

| Physical Sciences [P] (GER) | 4 |
| Related Field Electives | 6 |
| Soc 320 | 3 |
| S W 190 | 3 |

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Related Field Electives</td>
<td>6</td>
</tr>
<tr>
<td>Soc 321</td>
<td>4</td>
</tr>
<tr>
<td>Soc 351 (Soc 330)</td>
<td>3</td>
</tr>
<tr>
<td>S W 390 (or S W 393)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

| Related Field Electives | 6 |
| Soc 340 (Soc 424) | 3 |
| S W 395 or 396 (S W 396) | 3 |
| S W 495 or 496 | 3 |

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Related Field Elective</td>
<td>3</td>
</tr>
<tr>
<td>S W 393 (Elective)</td>
<td>3</td>
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<tr>
<td>S W 492</td>
<td>1</td>
</tr>
<tr>
<td>S W 493</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course (GER) and Related Field Elective</td>
<td>3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>S W 490</td>
<td>15</td>
</tr>
</tbody>
</table>

1. Related fields courses are approved by the department and chosen/identified in consultation with the major adviser. At least 12 of the required 24 hours of related fields course work must be upper division. Certain GER courses may also count as related fields, thus allowing the student more electives.


**Minors**

The minor in sociology may be certified after completion of 60 semester hours. It requires a minimum of 18 credit hours in sociology, including Soc 101, 320, and at least 9 additional graded hours of 300-400-level courses. Any Soc or S W course may be counted toward the minor (subject to the above provisions) except S W 490 and Soc 366. Only 3 credits of Soc 495 may apply to the minor. A g.p.a. of 2.0 is required for the minor.

**Description of Courses**

<table>
<thead>
<tr>
<th>Sociology</th>
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<tbody>
<tr>
<td>Soc 101 [S,D] Introduction to Sociology</td>
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</tbody>
</table>

**102 [S,D] Social Problems**

| The structure of social institutions and cultural factors that constitute threats to society (crime, poverty, discrimination, drugs, family violence). |

**150 [S,D] Marital and Sexual Life Styles**

| Traditional and alternative marriage styles; social and personal factors in mate selection; sexual life styles; development of sex roles. |

**198 [S] Introduction to Sociology Honors**

| Open only to students in the Honors College. |

| 270 Personal Identity and Social Interaction | 3 Development of self concept in social interaction; attitudes, values, beliefs and behaviors; conformity and interpersonal influence. |

| 300 [S,M] Intersections of Race, Class and Gender | 3 Same as WS St 300. |

| 301 Rural Sociology | 3 Comparison of rural and urban societies; rural social change and implications for the future. |

| 302 [S,D] Contemporary Masculinity and Men's Issues | 3 Same as WS St 302. |

| 320 Introduction to Social Research | 3 Methods of collecting data; surveys, experiments, field observations; organization and interpretation of data; reading social research findings. |

| 321 Quantitative Techniques in Sociology I | 4 PReq Soc 320. 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 PReq Soc 101. Society-environment relations, including environmental attitudes and behavior; the environmental movement and environmental policies and policy-making. |


| 343 [S,D] Sociology of Professions and Occupations | 3 Social organization of work in America including historical and contemporary trends, bureaucracy, gender/racial inequality, technological affects, work/family relations. |

| 345 [S,D] Sociology of Sport | 3 Sociological study of sport in America. |


| 351 [S,D] The Family | 3 PReq 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 PReq 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 | 3 Aging as a lifelong process; behavior, personality competencies, social relations change over the life course; historical, social structural, demographic, contextual influences. Cooperative course taught jointly by WSU and UI (Soc 431). |

| 360 [S] Theories of Deviance | 3 A survey of classical and contemporary theories of deviance. |

| 361 Criminology | 3 Crime and society; nature, types, and extent of crime; theories of criminality; control of crime. |


| 363 The Social Organization of Hate Crimes | 3 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 PReq Crm J 1101 or Soc 101. Various points of intersection of legal and social systems; special attention given to historical development. |
421 Quantitative Techniques in Sociology II 3 Prereq Soc 101. Introduction to research methods as used in social sciences; epistemological underpinnings and empirical techniques.

422 [T] Political Sociology 3 Prereq completion of one Tier I and three Tier II courses. Sociological analysis of political institutions and power structures; social and cultural basis of political behavior.

446 Medical Sociology 3 Social factors related to health and illness; organization and change in health care; impacts of health care reform, rising costs, and aging. Credit not granted for both Soc 446 and 546.

455 [T,S] Human Values 3 Prereq Psych 105 or Soc 101; Psych 350; completion of one Tier I and three Tier II courses. The nature and measurement of values; relationship to attitudes, identities, and behavior; value development and change in self and society.


474 [T] Collective Behavior and Social Movements 3 Prereq completion of one Tier I and three Tier II courses; three 300-400-level Soc or PolSci courses. Processes of collective behavior and social movements in historical and contemporary societies.

480 Sociology of Race Relations 3 Basic understanding of race relations; major sociological concepts and theories regarding minority and majority group relations. Credit not granted for both Soc 480 and 580.

484 [T,S,D] Lesbian and Gay Studies 3 Same as W St 484.

490 [M] Senior Capstone 3 Prereq senior in Soc. Focused examination of advanced substantive topics in sociology, with opportunities for students to further develop and refine analytic and writing skills.

491 Advanced Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

495 Internship V 1-6 May be repeated for credit; cumulative maximum 6 hours. Prereq social science major; by interview only. Work experience related to undergraduate major and career interests. S, F grading.

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

510 Development of Social Theory 3 Graduate-level counterpart of Soc 410; additional requirements. Credit not granted for both Soc 410 and 510.

511 Theories of Social Organization 3 Major theories of social organization in historical perspective.

512 Theory Construction and Formalization 3 Testing; formalization of theoretical systems; adaptation of general models to specific problems.

517 Seminar in Contemporary Sociological Theory 3 Recent developments in sociological theory, analysis, application and appraisal of specific theoretical systems.

519 International Development and Human Resources 3 Same as Anth 519.

520 Research Methods in Sociology 3 Methodology of social research at the professional level.

521 Regression Models 3 Prereq Soc 421. Simple and multiple regression, structural equation models, nonlinear applications, applications for discrete dependent variables.

522 Advanced Sociological Methodology 3 May be repeated for credit; cumulative maximum 12 hours. Prereq Soc 521. Scaling theory, sampling theory, experimental design, measurement of association, multivariate analysis, current methods and techniques.
554 Social Psychology of the Family 3 The family as an interacting group; social psychological theories and research applied to family relationships; effects of families on individuals.
555 Sociology of Gender 3 Sociological theory and research on gender and gender inequality in American society.
556 Sociology of Aging 3 Theory and research on changes that individuals undergo over the life cycle as a function of socialization and maturation processes.
560 Problems of Deviance Theory 3 Development of theories of deviant behavior; new issues in the study of deviance.
561 Sociology of Law 3 Social factors affecting the development and maintenance of legal structures and the processes of administration of justice.
567 Seminar in Crime and Delinquency 3 Contemporary theory and research in crime and delinquency.
568 Adolescent Deviance 3 Contemporary sociological theory and research in adolescent devian; action programs; and emerging issues.
571 Small Group Theory and Research 3 Theory and methods of small group research; types of group formation, and development of communication networks; socialization in group situations.
572 Socialization 3 Theories of childhood and adult socialization; personality development; symbolic interaction; learning agents of socialization.
573 Group Processes 3 Sociological research and theory dealing with overt behavior in human interaction settings and its cognitive antecedents.
580 Sociology of Race Relations 3 Graduate-level counterpart of Soc 480; additional requirements. Credit not granted for both Soc 480 and 580.
590 Special Topics in Sociology 3 May be repeated for credit; cumulative maximum 9 hours.
591 The Sociology Profession 1 May be repeated for credit; cumulative maximum 2 hours. Requirements, operations, problems, and possibilities of the sociology profession. S, F grading.
592 Special Topics in Sociology 3 May be repeated for credit; cumulative maximum 9 hours.
600 Special Projects or Independent Study 3 Variable credit. S, F grading.
700 Master's Research, Thesis, and/or Examination 3 Variable credit. S, F grading.
702 Master's Special Problems, Directed Study, and/or Examination 3 Variable credit. S, F grading.
800 Doctoral Research, Dissertation, and/or Examination 3 Variable credit. S, F grading.

Social Welfare and Public Policy


395 Child Welfare 3 Prereq SW 190. Social work practice in child welfare; adoption, foster homes, child protection, group homes, day care, children's institutions, dependency, traditional and non-traditional family.
396 Social Work with the Aging 3 Prereq SW 190. The aging process; accessing community resources for the elderly; applying social work methods to the elderly and their family systems. Cooperative course taught by WSU, open to UI students (Soc 396).
490 [M] Social Work Field Experience 10 or 15 Placement in social agency; knowledge in the helping relationship; decision making in applied settings. S, F grading.
492 Social Work Senior Seminar 1 Practicum preparation; practical advice about social work careers, resume writing, interviewing skills. S, F grading.
493 [M] Social Work Methods: Individual and Groups 3 Prereq SW 190. Social work values, ethics; technical aspects of interviewing and working with client systems; communication; group work skills.
495 Social Work in Corrections 3 Prereq SW 190. Applying social work methods to the field of corrections; community-based programs for adult offenders; interventions with juvenile offenders.
496 Social Work in Health and Mental Health 3 Prereq SW 190. Applying social work methods to the fields of health and mental health with an emphasis on practical skills.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.

SOIL SCIENCE

See Department of Crop and Soil Sciences.

Department of Speech and Hearing Sciences

Professor and Department Chair, G. D. Chernek; Professor, C. L. Madison; Professors Emeriti, J. R. Franks, R. E. Potter, M. E. Wingate; Associate Professors, J. M. Johnson; Assistant Professors, J. S. Bassett, D. Dale, E. Inglebret, C. Jones, S. Lowery, J. Nye, L. Power, J. Ray, L. Vogel; Visiting Assistant Professor, A. Lotto; Adjunct Lecturer, M. Mitchell; Instructor, M. Ratch.

The Department of Speech and Hearing Sciences offers courses of study leading to the degrees of Bachelor of Arts in Speech and Hearing Sciences and Master of Arts in Speech and Hearing Sciences. Academic course work and clinical practicum offerings prepare professional personnel to meet the diagnostic and therapy needs of individuals of all ages evidencing a wide variety of speech, language, learning, and hearing problems.

Students are prepared, as speech-language pathologists and audiologists, to provide direct and consultative services in education and medical settings. The course of study emphasizes the physiological, neurological, psychological, and behavioral processes of normal development, the fundamental communication process, and the disorders of communication. The analytic and independent application of course content to the clinical process is encouraged.

The Speech and Hearing Clinic is the Pullman campus training facility for the Speech and Hearing Sciences Department. Speech, language, and audiology services are available through the Speech and Hearing Clinic.

The graduate program, located in Spokane, is a cooperative venture, combining faculty and resources of Washington State University and Eastern Washington University to form University Programs in Communication Disorders (UPCD). WSU students enroll through and receive their degrees from Washington State University. The Hearing and Speech Clinic is the Spokane campus training facility for the University Programs in Communication Disorders. Opportunities to work with special populations and in medical settings are readily available in the Spokane area. A capstone internship program provides intensive practical experience in many clinical and educational settings.

The graduate programs in speech-language pathology and audiology are accredited nationally by the Council on Academic Accreditation of the American Speech-Language-Hearing Association and are recognized at the state level by the Washington State Board of Education. State and national clinical and educational certifications require a master's degree. Bachelor's-level training in speech and hearing sciences is considered pre-professional.

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

At least 45 of the total hours required for the bachelor's degree in this program must be in 300-400- level courses. Successful completion of SHS 475 and 478 fulfills the university requirement of two writing intensive 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.

SPEECH AND HEARING SCIENCES DEGREE PROGRAM (121 HOURS) ✔FYDA

Freshman Year

First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biological Sciences [B] (GER) 4
Communication [C,W] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3

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Department of Speech and Hearing Sciences

Second Semester
Art & Humanities [H,G] (GER) 3
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
GenEd 111 [A] (GER) 3
Physical Sciences [P] (GER) 4
Psych 105 [S] (GER) 3

Sophomore Year
First Semester
Art & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Biological [B] or Physical [P] Sciences (GER) 4
Shs 205 3
Shs 250 3

Second Semester
Intercultural [I,G,K] (GER) 3
Shs Electives 1 9
Stat 212 [N] (GER) 4

Junior Year
First Semester
Shs 201 4
Shs 371 I 3
Shs 372 3
Shs 378 3
Shs Elective 1 3

Second Semester
Shs 202 4
Shs 376 4
Shs 461 2
Shs 472 3
Shs 478 [M] 3

Senior Year
First Semester
Shs 377 4
Shs 473 3
Shs 475 [M] 3
Shs 477 3

Second Semester
Shs 471 3
Shs 475 3
Shs 479 3
Shs 480 1
Shs 482 3
Tier III Course (GER) 3

Minor
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 475.

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.

Description of Courses

Speech and Hearing Sciences
SHS
118 Accent Reduction for International Students 2 May be repeated for credit; cumulative maximum 4 hours. Instruction in production of the sounds and pattern of general American speech. S, F grading.
201 American Sign Language I 4 Instruction and practical training in sign language for communication with persons who are deaf; deaf culture; beginning conversation skills.
202 American Sign Language II 4 Prereq SHS 201. Sign language systems; vocabulary and skill development in signing and interpreting signs; intermediate conversation skills.
205 Introduction to Speech-Language Pathology and Audiology 3 Overview of deficits of speech, language, and hearing and the role of speech-language pathologist and the audiologist.
250 [S,D] Perspectives on Disability 3 Historical, international, socioeconomic, ethical and personal perspectives on disability; individual choices, societal values, and social responsibility.
371 Development of Speech and Language in Childhood 3 Normal development of the cognitive, linguistic, and pragmatic components of language; introduction to language disorders in children.
372 Hearing and Hearing Disorders 3 Acoustic and psychophysiological aspects of normal hearing and speech perception, and the nature and consequences of hearing disorders.
376 Clinical Phonetics and Articulation Disorder 4 Clinical Phonetics and transcription; evaluation and treatment of articulatory disorders; delayed phonological acquisition; dysarthria; and dyspraxia.
377 Anatomy and Physiology of the Speech Mechanism 4 Anatomical and physiological basis of speech production and the pathologies and aberrations that require the services of a communication disorders specialist.
378 Speech and Hearing Sciences 3 Basis of acoustics, acoustic phonetics, psychoacoustics, and speech perception, and instrumentation for measurement of related phenomena.
450 Special Topics in Speech and Hearing Sciences 1-3 May be repeated for credit; cumulative maximum 9 hours. Study of specialized topics in speech and hearing sciences.
460 Special Topics in Speech and Hearing Sciences 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) Preprq SHS 461 or c/. Therapy methods and procedures in speech-language pathology and audiology; state/federal laws affecting public school therapy.
473 Language and Learning Disability 3 Diagnosis and remediation of language and learning disabilities in individuals manifesting disorders in understanding or using spoken/written language.
475 [M] Clinical Practice 3 (0-9) May be repeated for credit; cumulative maximum 9 hours. Prereq SHS 461. Practicum in diagnosis and therapy for speech/language and hearing disorders.
477 Aural Rehabilitation 3 Prereq SHS 372, 472. Theories and methods in aural rehabilitation for persons who are hearing-impaired; amplification; educational audiology; counseling techniques.
479 Neurology for Speech-Language Pathology and Audiology 3 Prereq SHS 377. Neuroanatomical and neurophysiological bases of speech production and audition; neuropsychopathologies of speech, language, and audition.
480 Special Topics in Speech and Hearing Sciences 1 May be repeated for credit; cumulative maximum 9 hours. Study of specialized topics in speech and hearing sciences.
482 Diagnosis and Appraisal of Speech-Language Disorders 3 Prereq SHS 376 or c/ or 475 or c/; 478. Principles, techniques, and materials involved in exploring the nature of speech and language disorders; planning programs of therapy.
489 [T,D] Disability and Society 3 Prereq completion of one Tier I and three Tier II courses. Perceptions and stereotypes of disability related to theories of marginality and stigmatization; images in film, media, and literature.
490 Special Topics in Speech and Hearing Sciences 1-3 May be repeated for credit; cumulative maximum 9 hours. By interview only. Study of specialized topics in speech and hearing sciences.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.
501 Research Methods I 2 Philosophy of research, types of literature.
502 Computers in Clinical Practice I Microcomputer basics and hardware and software available for evaluation and treatment of speech and hearing disorders.
503 Research Methods II 2 Experimental and descriptive designs, application of statistics, analysis of statistical results.
540 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Advanced study of specialized topics in speech and hearing sciences.
550 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.
552 Advanced Audiological Rehabilitation 3 Prereq SHS 477. Practices and research in communication strategies training; speech and listening technology; exploration of current issues.
576 Problems in Stuttering 3 Prereq SHS 474. Historical and current literature; problem-solving strategies applied to theoretical and clinical problems in stuttering.

560 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Advanced study of specialized topics in speech and hearing sciences.

561 Advanced Speech and Hearing Sciences 3 Prereq SHS 372, 377. Theory, measurement, and instrumentation in acoustics, normal speech production, and audition.

562 Neuromuscular Disorders 2 Prereq SHS 377. Underlying processes of neuromuscular control and feedback; results of damage and disease on neuromotor system.

563 Dysphagia 3 Prereq SHS 377. Anatomy and physiology of swallowing; evaluation and treatment of swallowing disorders.

564 Language of Children with Hearing Impairment 3 Prereq SHS 371, 477. Speech production and speech perception abilities and language development and intervention strategies with the hearing impaired.

565 Augmentative Communication 3 Prereq SHS 478, 482. Augmentative communication theory; implementation, training strategies, ongoing adjustments, and evaluating effectiveness.

566 Off-Campus Clinical Practice V 2 (0-6) to 6 (0-18) May be repeated for credit; cumulative maximum 15 hours. Prereq SHS 375. By interview only. Advanced clinical practice in off-campus setting; evaluation and treatment of speech, language, and hearing disorders.

567 Issues in Public School Service Delivery 3 Prereq c// in SHS 575. On-site and off-site clinical operations, policies, procedures; legal, ethical, and professional issues for schools and medical settings.

570 Advanced Internship in Speech-Language Pathology and Audiology V 1-18 May be repeated for credit. Prereq SHS 471, 566, 575, by interview only. Advanced practicum in diagnosis of and therapy for communication disorders. S, F grading.

571 Seminar in Speech Pathology and Audiology 3 May be repeated for credit; cumulative maximum 9 hours. Exploration of ideas derived from current writings and research in speech pathology and audiology.

572 Hearing Aids 3 Prereq SHS 472, 477. Hearing aid technology; evaluation and fitting; programmable hearing aids; probe microphone measurement; prescriptive techniques.

573 Cleft Palate 3 Prereq SHS 377. Speech and voice problems associated with clefts of the lip and palate.

574 Acquired Central Nervous System Disorders 3 Prereq SHS 377, 478. Speech and language disabilities associated with brain injury.

575 Advanced Clinical Practice V 2 (0-6) to 6 (0-18) Prereq by interview only, SHS 567 or c//. May be repeated for credit; cumulative maximum 9 hours. Advanced clinical practice in evaluation and treatment of speech, language, and hearing disorders.

576 Voice Disorders 3 Prereq SHS 377. Functional and organic voice disorders resulting from various etiologies.


578 Professional Issues in Speech-Language Pathology and Audiology 3 May be repeated for credit; cumulative maximum 9 hours. Contemporary philosophical and professional issues in the field of communication science and disorders.

580 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Advanced study of specialized topics in speech and hearing sciences.

582 Clinical Perspectives 3 Theory and clinical experience designed to assist students in integrating course work into a clinical perspective.


585 Hearing Conservation in Industry and Society 3 Prereq SHS 472. Prevention and management of noise-induced hearing loss; interactions between noise and other ototoxic agents and physical characteristics of the individual.

586 Pediatric Audiology 3 Prereq SHS 472. Developmental anatomy and physiology of the human auditory system; auditory behavior and pathologies in children; assessment of infants and children.

587 Speech-Language Pathology in the Medical Setting 2 Prereq by interview only. Report writing and charting, collaborating with the medical team, establishing prognosis and assessing efficacy of treatment, and third-party reimbursement.

588 Phonological Acquisition and Behavior 3 Prereq SHS 576. Current literature in articulatory development and deviancy; diagnosis and therapy.

589 Professional Development in Speech-Language Pathology and Audiology 1 or 2 Prereq SHS 476 or 570. Planning and implementing a program of continuing education in speech language pathology and audiology leading to the Continuing Level ESA Certification from OSPI. S, F grading.

590 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. By interview only. Advanced study of specialized topics in speech and hearing sciences.

594 Advanced Audiometric Procedures with Special Populations 3 Prereq SHS 472. Differential diagnosis and clinical decision analysis for special populations; ototoxic emissions; vestibular testing.


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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Projects, Directed Study, and/or Examination Variable credit. S, F grading.

Program in Statistics

Director, M. A. Jacroux; Professors Emeriti, T. P. Bogoy, T. S. Russell, S. C. Saunders; Professors, J. R. Allrededge, R. B. Bendel, R. C. Mittelhammer, D. A. Sclar, R. K. Steinhorst, M. C. Wang; Associate Professors, S. K. Ahn, M. A. Evans, S. B. Fotopoulous, V. K. Jandhyala, R. A. Short, B. N. Tissot; Assist- tant Professors, N. Dasgupta, L. Pascaul, H. Zhang. Statistics is the science that deals with the collection, analysis, display, and interpretation of data. The Program in 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 courses in statistics 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 program 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 in the further development of statistics itself.

The Program in Statistics currently offers an MS degree with applied and theoretical options and a graduate minor. For specific requirements for this degree, please contact the Program in Statistics Office.

Description of Courses

Statistics

Stat

205 [N] Statistical Thinking 3 Same as Math 205.

212 [N] Introduction to Statistical Methods 4 (3-3) Prereq Math 103 or satisfactory math placement test score. Interpretation and application of statistical methods.

360 Probability and Statistics 3 Same as Math 360.


391 Advanced SAS Programming 1 Prereq Stat 390 or working knowledge of SAS base system. 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 Prereq Stat 390 or working knowledge of SAS base system. May be repeated for credit. Special features of the SAS system including, but not limited to: SAS/GRAPH, SAS/ASSIST, SAS/IML, SAS/ACCESS, SAS/SPSS, 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 SAS Applications 3 Prereq Dec S 215, Stat 212, 360, or 412. Basic data set creation, SAS storage, and use of fundamental SAS statistical procedures for data analysis. Cooperative course taught jointly by WSU and UI (ST 404).

410 Topics in Probability and Statistics 3 Same as Math 410. Credit not granted for both Stat 410 and 510.

412 Biometry 3 Rec statistics course. 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, 211, 201, 220, or 222; statistics course. Binomial, Poisson, multinomial distribution; contingency tables, Fisher’s tests, log-linear models; ordinal data; applications in biology, business, psychology, and sociology. Credit not granted for both Stat 420 and 520. Cooperative course taught by WSU, open to UI students (Stat 420).
422 Sampling Methods 3 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 Same as Math 423.

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 Same as Math 430.

443 Applied Probability 3 Same as Math 443.

456 Introduction to Statistical Theory 3 Same as Math 456. Credit not granted for both Stat 456 and 556.

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

504 Special Topics 3 Prereq Stat 456. Cooperative course taught by UI (Stat 504), open to WSU students.

507 Experimental Design 3 Prereq Stat 512. Methods of constructing and analyzing designs for experimental investigations; analysis of designs with unequal subclass numbers; concepts of blocking randomization and replication; confounding in factorial experiments; incomplete block designs; response surface methodology. Cooperative course taught by UI (Stat 507), open to WSU students.

510 Topics in Probability and Statistics 3 Graduate-level counterpart of Stat 410; additional requirements. Credit not granted for both Stat 410 and 510.

511 Statistics for Economics 4 Same as Ag Ec 510.

513 Advanced Topics in Mathematical and Quantitative Methods 3 Same as Ag Ec 590.

514 Nonparametric Statistics 3 Prereq Stat 512. Conceptual development of basic nonparametric tests including their power and efficiency. Cooperative course taught by UI (Stat 514), open to WSU students.

515 Statistical Packages 3 (2-3) Same as Math 515.

516 Time Series 3 Same as Dec S 516. Cooperative course taught by WSU, open to UI students (Stat 539).

518 Techniques in Sampling 3 Same as Dec S 518.

519 Applied Multivariate Analysis 3 Same as Dec S 519. Cooperative course taught jointly by WSU and UI (Stat 521).

520 Statistical Analysis of Qualitative Data 3 Graduate-level counterpart of Stat 420; additional requirements. Credit not granted for both Stat 420 and 520. Cooperative course taught by WSU, open to UI students (Stat 520).

523 Statistical Methods for Engineers and Scientists 3 Prereq graduate standing. Graduate-level counterpart of Stat 423; additional requirements. Credit not granted for both Stat 423 and 523.

530 Applied Linear Models 3 Prereq Stat 412 or 430. The design and analysis of experiments by linear models.

531 Econometrics I 3 Same as Econ 511. Cooperative course taught by WSU, open to UI students (Stat 531).

533 Theory of Linear Models 3 Prereq Math 420, Stat 430, or 456. Theoretical basis of linear regression and analysis of variance models; a unified approach based upon the generalized inverse. Cooperative course taught jointly by WSU and UI (Stat 533).

535 Regression Analysis 3 Prereq Stat 430 or 456. Conceptual development of regression; estimation, prediction, tests of hypotheses, variable selection, diagnostics, model validation, correlation, and nonlinear regression. Cooperative course taught jointly by WSU and UI (Stat 510).


542 Applied Multivariate Models 3 Same as Dec S 542.

544 Applied Stochastic Processes 3 Prereq Stat 430 or 443. Poisson and Markov processes; queueing theory; auto-covariance; stationarity; power spectra; harmonic analysis; linear mean-square predictions. Cooperative course taught jointly by WSU and UI (Stat 544).

547 Statistical Pattern Recognition 3 Same as Cpt S 547.

548 Statistical Theory I 3 Same as Math 568.

549 Statistical Theory II 3 Same as Math 569.

552 Econometrics II 3 Same as Ag Ec 512.

555 Statistical Ecology 3 Prereq Stat 443. Ecological stochastic models, population dynamics and genetics, sampling, spatial analysis, discrete/continuous distributions, birth-death processes, diffusion processes. Cooperative course taught by UI (Stat and WLF 555), open to WSU students.

556 Introduction to Statistical Theory 3 Prereq graduate standing. Graduate-level counterpart of Stat 456; additional requirements. Credit not granted for both Stat 456 and 556.

557 Reliability Theory 3 Same as Math 573.

558 Applied Multiple Time Series Analysis 3 Same as Dec S 558.

590 Statistical Consulting Practicum 1 or 2 May be repeated for credit; cumulative maximum 6 hours. Prereq three courses in Stat including one methods course or by interview only. Theory and practice of statistical consulting, participation in consulting session. S, F grading.

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

700 Master's Research Thesis, and/or Examination Variable credit. S, F grading.

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, a course in probability and statistical theory, and mathematics through multivariable calculus and linear algebra. Advanced calculus is also strongly recommended. More important than the above specific courses is an indication of the student's interest and ability in statistics. Virtually all U.S. graduate programs provide adequate opportunity to take prerequisite courses after admission to graduate school.

Department of Teaching and Learning

The Department of Teaching and Learning prepares teachers and other specialists for schools and colleges. Its programs are accredited by the National Council for Accreditation of Teacher Education (NCATE), the Northwest Association of Schools and Colleges and the State Board of Education. Courses of study are offered for the Bachelor of Arts in Education, Bachelor of Science in Kinesthetics, Master of Arts in Education, Master of Education, Master in Teaching, Doctor of Education, Doctor of Philosophy, and for teacher certification. The mission of the College of Education, through its constructivist model of learning, is to educate effective practitioners and scholars who possess the leadership and problem-solving skills necessary to meet the needs of citizens of the 21st century. The constructivist approach, in contrast to approaches that view the purpose of the teacher as merely transmitting knowledge, requires students to be active and critical participants in the formation of their own intellectual development in a life-long process and to evaluate their performance in terms of its effects upon children, schools, and society. It is our belief that teachers must be liberally educated, well grounded in human growth and development, informed and appreciative of cultural and linguistic diversity, committed to egalitarian ideals, capable of communicating and inspiring an interest in learning in others, competent in the technical aspects of teaching and managing group learning, and reflective about their own beliefs and actions. WSU's constructivist model provides students with a challenging framework for the study of individual and group experiences, responses, and perceptions. This framework forms the basis for research that informs the application and formulation of educational theory and methodology used to advance professional practice.

Visit our web site at education.wsu.edu/landl/.

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 grade level and subject area in which the certificate holder is qualified to teach. Teacher preparation is offered at the Pullman, Tri-Cities, and Vancouver campuses, 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 and the FBI. The State Superintendent of Public Instruction, Office of Professional Practices, determines fitness to teach.
Department of Teaching and Learning

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.
   - 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 primary and supporting endorsements. The C minimum grade requirement applies also to math, science, and departmental requirements in the elementary and early childhood programs.
   - The cumulative g.p.a. and the g.p.a. 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 within this time limit will be subject to all new program requirements.
   - The candidate has achieved a passing score on the state-wide admission to practice examination, if required.
   - The candidate has made application and paid licensing fees.

Transfer students entering an undergraduate or postbaccalaureate certificate program must complete at least fifty percent of the professional education core, and, if preparing to teach at the elementary level, fifty percent of the K-8 endorsement course work, plus student teaching at WSU. Transfer students and postbaccalaureate applicants should consult with an adviser regarding equivalency of transfer 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 who 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 faculty with school districts contracted to provide experiences for WSU students. Students do not make their own student teaching placements.

Certificate Renewal/Continuing Certificate
Information is available upon request.

WSU Pullman Teacher Certification
Inquiries and requests for program information should be addressed to Teacher Education Student Services, 252 Cleveland Hall, PO Box 64214, Pullman WA 99164-2114.

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 faculty.

To prepare in K-8 elementary education the candidate shall satisfy degree requirements of the Department of Teaching and Learning. To prepare in P-3 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/teacher option offered through the subject matter department, or in general studies. Single-subject preparation is available in agriculture, biology, chemistry, earth science, English, English/language arts, foreign languages (French, German, Russian, Spanish), health/fitness, history, family and consumer sciences, mathematics, music (general, choral, instrumental), physics, science, social studies, and special education. All candidates endorsed for single subjects may be assigned to teach in grades 5-12 except those endorsed in foreign languages, health/fitness, music or special education who are authorized to teach in grades P-12. Specific course requirements for each primary endorsement are listed under 5-12 Certificate Programs and P-12 Certificate Programs at the end of this section.

To enhance employment opportunities, certificate candidates may wish to teach in a subordinate area by completing supporting endorsement requirements. Supporting endorsements are offered in bilingual education, biology, chemistry, drama, early childhood education, earth science, English as a second language, foreign languages (French, German, Japanese, Russian, Spanish), mathematics, physics, and reading.

Admission to 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
1. Completion, within the last three years, of 80 hours of supervised work with children or youth in a diverse setting.
2. ACT or SAT score which meets current state requirements. (Inquire at Teacher Education Student Services.) Those holding a bachelor's degree and those with two years of successful college work in which competency in oral and written communication, math and reading has been demonstrated are exempt.
3. Completion of at least 30 semester hours of course work.
4. Minimum cumulative g.p.a. of 2.50.
5. Engl 201 or equivalent composition course with a minimum grade of C.
6. ComSt 102 or equivalent public speaking course with a minimum grade of C.
7. T & L 300, 301, and H D 101.
8. Elementary and Early Childhood Majors: Math 251 and at least two GER science courses with minimum grades of C.
9. Secondary Majors: Nine hours of course work in the primary endorsement area. Certified in major department; major department may have additional criteria for teaching option candidates.
10. An interview and writing sample may be required.

Admission to, or continued enrollment in, the teacher preparation program may be denied a candidate on the basis of review by the faculty.

Field Experiences and Student Teaching
An application for student teaching must be made one full academic year prior to the actual student teaching semester. Application forms can be obtained from Teacher Education Student Services, Cleveland Hall 252. The following courses are designed as required field experiences.

T & L 300, Introductory Field Experience (1 credit): This first course in the certificate program engages the student in reflection upon the responsibilities and realities of the teaching profession. Subsequently, the student spends a full week participating and observing daily activities in a P-12 public or private school classroom.

T & L 402, Instructional Practicum I (3 credits): The MIT is a full-time, 15-month, field-based program leading to K-8 certification and a master's degree. Applicants must have a bachelor's degree from an accredited institution with a minimum 3.0 g.p.a. in their last 60 semester hours of graded coursework, and submit the MIT application portfolio which is available from the Department of Teaching and Learning. Applications are available in April and must be submitted by December 1 for the program beginning the following June. Course of study (51 hours): Ed Ad 506, EdPsy 503, 504, Kin 586, Sp Ed 520, T & L 521, 525, 540, 552, 554, 556, 564, 572, 593, 594, 595, 702.

WSU Tri-Cities Teacher Certification
Inquiries and requests for application materials should be addressed to WSU Tri-Cities, Department of Teaching and Learning, 2710 University Drive, Richland WA 99352-1671, (509) 372-7366.

Masters In Teaching (MIT)
The MIT is a full-time, 15-month, field-based program leading to K-8 certification and a master's degree. Applicants must have a bachelor's degree from an accredited institution with a minimum 3.0 g.p.a. in their last 60 semester hours of graded coursework, and submit the MIT application portfolio which is available from the Department of Teaching and Learning. Applications are available in April and must be submitted by December 1 for the program beginning the following June. Course of study (51 hours): Ed Ad 506, EdPsy 503, 504, Kin 586, Sp Ed 520, T & L 521, 525, 540, 552, 554, 556, 564, 572, 593, 594, 595, 702.
WSU Tri-Cities 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 or review by faculty.

In addition to the certificate options described below, WSU Tri-Cites offers a Master of Education (Ed.M.) degree program in literacy for educators who already have a teaching certificate. This non-thesis degree focuses on K-12 literacy development across the curriculum.

**Masters in Teaching (MIT)**

This two-year, field-based program leading to K-8 elementary certification and a master's degree emphasizes preparation of teachers to work in multicultural settings. Applicants must have a bachelor's degree from an accredited institution with a minimum 3.0 g.p.a. in their last 60 semester hours of undergraduate graded course work or 12 hours of graduate graded course work. In addition, the following criteria are considerations for admission: 1) documentation of 80 hours work with youth; 2) minimum combined GRE general test score of 1200; 3) letters of recommendation; 4) quality and content of personal statement; and 5) course profile. The application deadline is January 15 for a 25-student cohort which begins the two-year program of study each fall term.


**Bachelor of Arts**

Applicants to the bachelor of arts program with K-8 elementary certification are expected to have completed an Associate of Arts transfer degree from a community college or have at least 60 semester hours of study which includes the following program prerequisites: ComSt 102, Engl 201, Math 251 and 252, and at least two of the four required science courses all graded C or higher. A minimum cumulative g.p.a. of 2.5 is required for consideration for admission.

**WSU Vancouver Teacher Certification**

Inquiries and requests for application materials should be addressed to WSU Vancouver, Office of Admissions, 14024 NE Salmon Creek Avenue, Vancouver WA 98686, (360) 546-9788, 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 MIT and secondary certification programs. Admission to, or continued enrollment in, a teacher preparation program may be denied a candidate on the basis or review by 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.

In addition to the teacher certification options described below, WSU Vancouver offers a Master of Education (Ed.M.) degree program for educators who already have a teaching certificate. Course work is also offered toward endorsements in English as a second language and reading which can be applied to the master's program.

**Degree Program Requirements**

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

**K-8 CERTIFICATE DEGREE PROGRAM: ELEMENTARY EDUCATION (120 HOURS)**

Candidates for the K-8 elementary education primary endorsement undergraduate program will satisfy degree requirements of the Department of Teaching and Learning. The degree will be bachelor of arts. The student should include the following course work within GER selections to satisfy prerequisite, degree, and admission to teacher preparation requirements. This course schedule does not include a supporting endorsement that may be recommended by school districts. Note that Math 100 and 101 do not count toward the total hours required for the degree.

**Freshman Year**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H D 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math prereq, if necessary, or Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3</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 133 [H] (GER), if necessary</td>
<td>3</td>
</tr>
<tr>
<td>Psych 105 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 300</td>
<td>1</td>
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</table>

**Sophomore Year**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist 150 [S,D] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 301</td>
<td>2</td>
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<tr>
<td>Certify Major</td>
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</tr>
<tr>
<td>Complete Writing Portfolio</td>
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</tr>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<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>
</tr>
<tr>
<td>T &amp; L 320</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 330</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 402</td>
<td>1</td>
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**Junior Year**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus 388</td>
<td>2</td>
</tr>
<tr>
<td>Science Elective [B,P,Q]</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 352</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 371</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 385</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 405</td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercultural [L, G, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 390</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 483</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Senior Year**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EdPsy 401</td>
<td>2</td>
</tr>
<tr>
<td>Sp Ed 420/421</td>
<td>2 or 3</td>
</tr>
<tr>
<td>T &amp; L 510 [M]</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 403</td>
<td>2</td>
</tr>
</tbody>
</table>

**Preschool-Third Grade Certificate Degree Program**

Students completing this certification degree program earn a Bachelor of Arts in Human Development and a teaching certificate with a primary endorsement in preschool-third grade and a supporting endorsement in kindergarten through grade eight. For complete requirements and program description, see the Department of Human Development listing in this catalog.

Supporting Endorsement (22 hours): The requirements for a supporting endorsement in early childhood are satisfied by completing the early childhood minor in Human Development. This endorsement is available only to students completing the K-8 Elementary Education Certificate Program.

**Secondary Certification**

Candidates may choose postbaccalaureate teacher certification only or a master's degree in certification in the areas of biology, English, history, or social studies. All applicants must meet subject matter endorsement requirements in one of the four content areas. Content deficiencies will be determined through a transcript evaluation which is required prior to application to the program. Students may begin the program fall, spring, or summer and should complete the university and departmental applications at least two months prior to the semester in which they wish to enroll. A bachelor's degree from an accredited institution is required. Candidates for the master's degree with certification must have a minimum 3.0 g.p.a. in the last 60 semester hours of graded course work; those seeking certification only must have a 2.5 minimum cumulative g.p.a.

| Course of Study for Certification Only (35 hours): EdPsy 502, 510; Ed Ad 507, 510, T & L 521, 525, 528, 580, 593, 595. Diversity course required. |
| Course of Study for Ed.M. with Certification (49 hours): EdPsy 502, 505, 510; Ed Ad 507, 510, T & L 521, 525, 528, 580, 593, 595, 702; 9 hours elective course work in diversity selected with adviser approval. |
**Department of Teaching and Learning**

**Sophomore Year**

**Primary Endorsement/Major**

- **ComSt 102 [C] (GER)** 3

**First Semester Hours**

- **Intercultural [I,G,K] (GER)** 3
- **Engl 201 [W], 301 [W], or 302 [W]** 3
- **Arts & Humanities [H,G] or Biological Sciences [B] (GER)** 3

**Second Semester**

- **Tier I Science [Q]** 3
- **Psych 105 [S] (GER)** 3
- **Math Proficiency [N] (GER)** 3
- **GenEd 110 [A] (GER)** 3

**Freshman Year**

**First Semester**

- **Engl 101 [W] (GER)** 3
- **GenEd 110 [A] (GER)** 3
- **Math Proficiency [N] (GER)** 3
- **Psych 105 [S] (GER)** 3
- **Tier I Science [Q]** 3

**Second Semester**

- **Arts & Humanities [H,G] (GER)** 3
- **Biological Sciences [B] (GER)**
- **ComSt 102 [C] (GER)**
- **GenEd 111 [A] (GER)**
- **Primary Endorsement/Major**

**Sophomore Year**

**First Semester**

- **Arts & Humanities [H,G] or Social Sciences [S,K] (GER)**
- **Engl 201 [W], 301 [W], or 302 [W]**
- **Physical Sciences [P] (GER)**
- **Primary Endorsement/Major**
- **T & L 300**

**Second Semester**

- **Intercultural [I,G,K] (GER)**
- **Primary Endorsement/Major**
- **T & L 301**
- **Certify Major**
- **Certify In Teaching & Learning Three-Week Field Experience (317)**

**Junior Year**

**First Semester**

- **Primary Endorsement/Major**
- **Supporting Endorsement**

**Second Semester**

- **T & L 302**
- **T & L 303**
- **T & L 317**

**Complete Writing Portfolio**

**Second Semester**

- **EdPsy 402**
- **Primary Endorsement/Major**
- **Supporting Endorsement**

**Senior Year**

**First Semester**

- **Primary Endorsement/Major**
- **Supporting Endorsement**
- **T & L 404**
- **T & L 445**

**Second Semester**

- **Supporting Endorsement**
- **T & L 328**
- **T & L 478**
- **Tier III Course (GER)**

**Fifth Year**

**First Semester**

- **Supporting Endorsement or T & L 415**

**English/Language Arts (subject to change fall 2001)**

**Primary Endorsement (46 hours): Foundation Courses:**
- Hum 101 or 103; Engl 108, 199, 209 or 210; 300; 302. **English Literature:** Engl 305 or 306; 383, 384, 385, or 386; 387, 388, or 389; one additional upper-division English literature course selected with adviser approval. **American Literature:** Engl 311, 314, 321, 322, 341, 345, or 346; 380 or 381 (382 may be taken if writers-of-color course is pre-1916). **Professional Courses:** One from Engl 255, 256, 354, 443, 458, Anh 256, 350, 355, or 450; Engl 323; 324. **Concentration:** 6 hours approved upper-division Engl; Engl 495 or approved capstone; creative writing course strongly recommended if not included in concentration.

**History (subject to change fall 2001)**

**Primary Endorsement:** Econ 101 or 102; Pol S 101; Psych 105; Hist 101, 102, 110, 111; 300; 422, 469, 480; one from Hist 230, 231, 270; one from CAC 101, 111, 131, 151, 171, or W St 200; 12 hours 300-400-level Hist electives which must include two global/non-western courses.

**Mathematics**

**Primary Endorsement (33 hours):** Cpt S 153, Math 171, 172, 220, 273, 303, 315, 320, 330; 360 or 443; 398 plus one additional 3-hour Math course numbered above 300.  

**Supporting Endorsement (19 hours): Math 171, 172, 220, 303; 325 or 360.** In addition, the Math Department recommends Math 330.

**Physics**

**Primary Endorsement:** Astr 345 or Phys 380; Biol 103; Chem 105 and 106; Hist 381, 382, or Phil 350; Math 140 or 171; Ph S 430; Phys 201, 202, 303, 304; 320, 330, or 341; 410, 499 (4 hours includes observing Phys 101 and 102.)

**Supporting Endorsement:** Biol 103; Chem 105 and 106; Hist 381, 382, or Phil 350; Math 140 or 171; Ph S 430; Phys 201, 202, 303, 304, 499 (4 hours includes observing Phys 101 and 102.)
Science
Primary Endorsement (45 hour core plus option): Chem 105 or 115; 106 or 116; Geol 102, 210; Phys 101 or 201; 102 or 202; Biol 103 or 102 with a grade of B or better; 104; Math 140 + 171; one from Hist 381, 382, 403, or Soc 430; Ph 5 or Biol 430.
Biological Option: Biol 372; 499; Chem 240; MbioS 301, 302, 303; Zool 405.
Chemistry Option: Chem 220; 222, 230, 340, 341, 398, 481, 499; MbioS 303, 304.
Earth Science Option: Chem 240; Geol 206, 350, 403, 499; one from Geol 300, 310, 340; Astr 345, 390; ES/RP 174.
Physics Options: Chem 240; Phys 303, 304, 345; 380 or Astr 450; 383, 410, 499.

Social Studies (subject to change fall 2001)
Primary Endorsement: Hist 110, 111, 480; one from Hist 230, 231, 270, 272, 273, 275; one from CAC 101, 111, 131, 151, 171, or W St 200; one from Anth 101, 198, 203, 260; Soc 101; Econ 101 or 102; Pol S 101; 15 upper-division credits in history which must include Hist 422, one global non-western and one European course; one from Econ 320, 340, 350, 416, or 470; one from Hist 495, Anth 309, or T & L 487; one from Pol S 300, 316, 427, 450, 455, or Crim J 320; two from Anth 307, 316, 320, 330, 351, 360; Psych 310, 324, 333, 361, 470; Soc 320, 351, 384, 430; Hist 460 or Soc 320.

P-12 CERTIFICATE PROGRAMS
Candidates for P-12 certificates shall declare a major with the subject-matter department or the Department of Teaching and Learning and meet the GER and degree requirements of the chosen department. Typically, students desiring primary endorsement in one of the foreign languages or music will follow the Professional Education Core listed in the 5-12 Certificate Program section, while students desiring endorsement in reading, bilingual education, English as a second language, or special education will follow the K-8 elementary education requirements. Students diverting from this typical pattern should consult with an adviser about appropriate professional core courses.
In addition to meeting requirements of the degree-granting department, the student must meet admission requirements listed in this section and make formal application to the teacher preparation program prior to enrolling in any professional education courses beyond T & L 300, 301, and 317. It is recommended that candidates begin professional education courses in the sophomore or junior year to meet sequencing requirements. Students should include the following courses within GER selections to fulfill prerequisite and admission to teacher preparation program requirements: ComSt 102; Eng 198 and 199 or Eng 201, 301, or 302; math proficiency; Psych 105.

Arts: Drama
Supporting Endorsement (20 hours): Theat 160, 163, 260, 261; 361 or 468; 365 or 466; 496.

Bilingual Education (subject to change fall 2001)
Supporting Endorsement (18 hours): T & L L.333 or 335, 339, 401, 409, and 411 or 414; one or more of T & L 410, 412, 472, 473; one of Anth 350, 355, 450, Engl 354, 443, 458; plus demonstrated proficiency in a language other than English.

English as a Second Language (subject to change fall 2001)
Supporting Endorsement (18 hours): T & L L.333, 339, 401, 409, 414; one or more of T & L 335, 410, 412, 472, 473; one of Anth 350, 355, 450, Engl 354, 443, 458; plus demonstrated proficiency in a language other than English.

Supporting Endorsement (18 hours): T & L L.333, 339, 401, 409, 414; one or more of T & L 335, 410, 412, 472, 473; one of Anth 350, 355, 450, Engl 354, 443, 458; plus demonstrated proficiency in a language other than English.

Supporting Endorsement (18 hours): T & L L.333, 339, 401, 409, 414; one or more of T & L 335, 410, 412, 472, 473; one of Anth 350, 355, 450, Engl 354, 443, 458; plus demonstrated proficiency in a language other than English.

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Supporting Endorsement (18 hours): T & L L.333, 339, 401, 409, 414; one or more of T & L 335, 410, 412, 472, 473; one of Anth 350, 355, 450, Engl 354, 443, 458; plus demonstrated proficiency in a language other than English.
instruction, individuals will acquire knowledge and skills necessary to maintain an active lifestyle involving movement, physical fitness and proper nutrition. Students will participate in activities that are designed to help them understand and value important health concepts and the contributions they make to a healthy lifestyle.

**Freshman Year**

**First Semester**
- Engl 101 [W] (GER) 3
- FSHN 130 [B] (GER) 3
- H Ed 263 2
- MvtSt 199 3
- PEACT 112 1
- Psych 105 [S] (GER) 3

**Second Semester**
- Arts & Humanities [H,G] (GER) 3
- ExSci 264 3
- GenEd 110 [A] (GER) 3
- Intercultural [I,G,K] (GER) 3
- MvtSt 262 4
- T & L 300 1

**Sophomore Year**

**First Semester**
- Biol 102 [B] or 103 [B] (GER) 4
- Engl 201 [W] (GER) 3
- GenEd 111 [A] (GER) 3
- H Ed 361 3
- PEACT Elective 1
- PharF 217 2
- T & L 301 2

**Second Semester**
- ComSt 102 [C] (GER) 3
- Math Proficiency [N] (GER) 3 or 4
- PEACT Elective 1
- Physical Sciences [P] (GER) 3 or 4
- Psych 230 3
- T & L 302 2
- T & L 303 2

**Junior Year**

**First Semester**
- Ath T 311 3
- H Ed 463 2
- MvtSt 484 3
- T & L 478 2
- Tier III Course (GER) 3

**Second Semester**
- T & L 415 (student teaching) 16

**Second Semester Hours**
- Zool 251 4
- T & L 445 2
- T & L 317 2
- MvtSt 483 3
- MvtSt 481 3
- H Ed 463 2
- Ath T 311 3
- H Ed 463 2
- MvtSt 380 3
- MvtSt 393 1
- MvtSt 415 3

**Second Semester Hours**
- MvtSt 484 3
- T & L 478 2
- Tier III Course (GER) 3

**Second Semester Hours**
- T & L 415 (student teaching) 16

**Description of Courses**

**Teaching and Learning**

**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, c// in T & L 300. Reflective inquiry about human learning, development, diversity, and individual differences, examination of implications for teaching and education reform.

**302 Secondary School Curriculum and Content Literacy Development** 2 (0-4) Prereq T & L 301, certified education major. Development and implementation of curriculum and content literacy, including course outlines and lesson and unit plans.

**303 Secondary School Instruction and Content Literacy Methods** 2 Prereq certified education major, T & L 301, 317 or 318. Materials and general methods of instruction and content literacy for secondary teachers.

**304 Introduction to Middle Level Education** 2 Prereq T & L 300. Study of adolescents; middle level organization and instructional strategies including field component at Lincoln Middle School.

**305 Fundamentals of Instruction** 2 Prereq certified education major; c// in T & L 306, 307, 320, and 402 (1 credit). Introduction to lesson and unit plans, state standards, instructional models, and basic strategies for using and integrating technology.

**306 [M] Survey of Elementary Reading and Language Arts** 3 Prereq certified education major; H D 101; T & L 301; c// in T & L 305, 307, 320 and 402 (1 credit). Attitudes, knowledge, and skills needed for successful teaching of reading and language arts.


**308 Teaching Writing K-12** 2 Prereq admission to teacher prep program; T & L 301 or c//; T & L 300. For preservice teachers. Improving writing skills; preparing effective writing lessons.

**310 [M] Classroom Management** 2 Prereq certified education major; T & L 301; c// in T & L 403, 413, 445, 490 (3 credits); EdPsy 401 and Sp Ed 420/421. Strategies for developing positive and supportive classroom learning environments.

**315 Elementary Practicum and Seminar** 3 (0-9) Prereq T & L 301. Classroom experience prior to student teaching providing observation, reflection and gradual classroom involvement and teaching responsibility. S, F grading.

**317 Secondary Practicum and Seminar** 2 Prereq T & L 301. Classroom experience prior to student teaching providing observation, reflection, and graduate classroom involvement and teaching responsibility. S, F grading.

**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.

**320 Elementary Reading Methods** 3 Prereq certified education major; T & L 301; c// in T & L 305, 306, 307 and 402 (1 credit). Teaching methods, materials, and content in elementary school reading.

**324 Methods of Teaching Foreign Languages** 3 Same as FFL 340.


**330 Diversity in Schools and Society** 2 Prereq admission to teacher preparation program. Gender, linguistics, cultural and learning diversity; concepts, issues, approaches to educating students in a diverse society.

**333 Introduction to English as a Second Language (ESL)** 3 Foundations of ESL with attention to basic concepts of second language processing in educational settings.

**335 Bilingual Bicultural Education** 3 Same as CAC 356.

**339 Communicating in Diverse Classrooms** 3 Selected topics dealing with linguistic diversity, cross-cultural communication, language development and language use.

**352 Teaching Elementary Mathematics** 3 Prereq certified education major, Math 251, 252; T & L 301, c// in T & L 371, 385, and 405 (1 credit). Teaching methods, materials, and content in elementary and middle school mathematics.

**355 Chicanas/os and the Educational System** 3 Same as CAC 355.

**371 Teaching Elementary Science** 3 Prereq certified education major; science GERs; T & L 301, c// in T & L 352, 385, and 405 (1 credit). Teaching methods, materials, and content in elementary and middle school science.

**385 Teaching Elementary Social Studies** 3 Prereq certified education major; T & L 301; c// in T & L 352, 371, and 405 (1 credit). Teaching methods and materials in elementary and middle school social studies.

**390 Integrating Fine Arts into K-8 Curriculum** 3 Prereq certified education major; T & L 301 or c//. Integrating the range of fine arts (art, music, dance, drama) into K-8 curriculum; designed for preservice and inservice general K-8 teachers.

**400 Advanced Field Experience** 1 V (0-3) to 6 (0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq certified education major; T & L 515.

**401 Practicum in Bilingual/ESL Education** 2 (0-6) May be repeated for credit; cumulative maximum 6 hours. Prereq T & L 333, 335, or graduate standing. Work with students from diverse cultural and linguistic backgrounds in an educational setting.
402 Instructional Practicum I V 1 (0-3) to 6 
(0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq certified education major; c/) in T & L 305, 306, 307, and 320. Application of educational theories and approaches learned during methods Block I.

403 Social Foundations of Elementary Curriculum 2 Prereq certified education major; c/) in T & L 310, 413, 445, 490 (2 credits); EdPsy 401; and Sp Ed 420/421. The school; historical, and philosophical foundations of education; school law.

404 Social Foundations of Curriculum Secondary 2 Prereq certified education major; T & L 317. The school; historical, and philosophical foundations of education; school law.

405 Instructional Practicum II V 1 (0-3) to 6 
(0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq certified education major; T & L 402; c/) in T & L 352, 371, and 385. Application of educational theories and approaches learned during methods Block II.

409 Curriculum and Assessment for Bilingual/ESL Education 3 Prereq T & L 333 and 339 or 414. Curriculum development for assessment of language minority students.

410 Theoretical Foundations of Bilingual/ESL Education 3 Prereq T & L 333, 335, or graduate standing. Theoretical foundations related to research and instructional strategies for effective schooling of language minority students. Credit not granted for both T & L 410 and 510.

411 Bilingual Methods and Materials Across Content Area 3 Prereq T & L 333, or 335, 339, 401, and T & L 342. Span or demonstrated fluency in a second language or graduate standing and fluency in a second language. Approaches, methods, and materials across content areas for the bilingual classroom.

412 Language and Cultural Factors in Mathematics 3 Prereq T & L 352 or teaching experience. Research and instructional strategies related to linguistic and cultural influences on learning math. Credit not granted for both T & L 412 and 512.

413 Introduction to ESL for K-8 Teachers 2 Prereq certified education major; c/) in T & L 310, 403, 445, 490 (3 credits), EdPsy 401 and Sp Ed 420 or 421. Introduction to teaching ESL students for K-8 teachers.

414 Methods and Materials for Bilingual/ESL Education 3 Prereq T & L 333, or teaching experience. Research and instructional methods related to English language acquisition across content areas. Credit not granted for both T & L 414 and 514.

415 Directed Teaching V 6 (1-5) to 16 (1-45) Prereq certified education major, program completion, WSP/FBI/SP1 clearance, 2.5 g.p.a. overall, in primary endorsement and professional courses. By interview only. Semester of supervised teaching in K-12 schools; seminars reflecting on effective teaching. S, F grading.

425 Conceptual Aspects of Mathematics 3 Prereq college-level math course. Exploration of conceptual models for thinking about mathematical ideas; activities and discussions of mathematical thinking and instruction.

431 Innovations in Reading 2 Prereq admission to teacher prep program. Aspects of teaching reading, how programs and trends; activities and materials for enrichment. Credit not granted for both T & L 431 and 530.

433 Children’s Literature in the Curriculum 2 Prereq T & L 307 or teaching experience. Theory and classroom applications for selecting and using literature and storytelling in content areas; reading, writing, language development, the arts. Credit not granted for both T & L 433 and 532.

445 Methods of Educational Technology 2 (1-5) Prereq certified education major; T & L 301; K-8: Block II courses; Secondary Majors: T & L 302, 303, 400. Consideration of all technologies in schools, applications for their use, some production techniques and instructional methodologies.

450 Content Literacy in Middle and Secondary Schools 2 or 3 Prereq admission to teacher prep program; T & L 300; T & L 301 or c)/ Reading and writing in content areas, grades 4-12; integrating service learning and community of learners approaches in teaching literacy skills.

452 Content Area Reading and Study Skills Practicum V 1-3 May be repeated for credit; cumulative maximum 3 hours. Prereq T & L 320 or 450. Development and delivery of vocabulary, comprehension, and study skills.

455 Educational Uses of Microcomputers 2 or 3 Prereq admission to teacher prep program; T & L 300; T & L 301 or graduate standing. Types and functions of educational software, evaluation criteria, designing instructional programs and classroom considerations.

462/463 Corrective Reading in the Classroom 2 Prereq admission to teacher prep program; T & L 300, 301. Investigation, formulation, application of informal and formal assessment for classroom instruction; specific needs of children with reading difficulties.

472 Technology for Language Learning 3 Prereq T & L 333, 335, or graduate standing. Computer technologies addressing the needs of language minority students and their teachers (including audio, video, graphics, and text).

473 Teaching Foreign Language in the Elementary School 3 Prereq admission to teacher prep program; T & L 301. Theory and methods of teaching foreign languages in the elementary schools.

478 Family, School, and Community Collaboration 2 Prereq certified education major; T & L 302, 303. Examining strategies connecting schools, families, and communities to improve learning and development; includes abuse reporting procedures, HIV/AIDS, substance abuse awareness.

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 certified education major. Integrating the range of health and fitness content into K-8 curriculum; designed for preservice and inservice general K-8 teachers.

487 Global Geography 3 Prereq declared major; open to non-education majors. World geography as a global perspective; education in the contemporary world: the interaction between human societies and the natural environment.

490 Advanced Practicum V 1 (0-3) to 3 (0-9) Prereq T & L 402, 405. Provides students with an intensive practicum in which they integrate educational theory with teaching and in classroom contexts. May be repeated for credit; cumulative maximum 8 hours. S, F grading.

497 Topics in In-Service Education V 1-3 May be repeated for credit; cumulative maximum 9 hours. New developments and applications on selected in-service and staff development topics.

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

501 Bilingual/ESL Education 3 May be repeated for credit; cumulative maximum 6 hours. Prereq one course in bilingual/ESL or by interview only. Work with students from diverse linguistic and cultural backgrounds in educational settings.

504 Early Childhood Programs for Children at Risk Identification of children at risk; their needs, appropriate curriculum, and program evaluation; description of parent-teacher community relationship and outreach.

506 Multicultural Classroom Instruction and Management 4 Instructional and management strategies for maximizing students’ opportunities to learn in a multicultural setting.

507 Developing Literacy in a Multicultural Setting I 3 Theoretical foundations of language arts in a multicultural setting.

508 Teaching Literacy in a Multicultural Setting II 3 Prereq T & L 507. Applying research-based assumptions to teaching language arts in a multicultural setting.

509 Research in Curriculum and Assessment for Bilingual/ESL Education 3 Prereq T & L 510 or 514; graduate standing. Research in curriculum development for assessment of language minority students.

510 Theoretical Foundations of Bilingual/ESL Education 3 Graduate-level counterpart of T & L 410; additional requirements. Credit not granted for both T & L 410 and 510.

511 Teaching Poetry to Children and Young People 3 Prereq T & L 303, 307, or teaching experience. Elements and forms of poetry for children and young people; selection and utilization in the school curriculum.

512 Language and Cultural Factors in Mathematics 3 Graduate-level counterpart of T & L 412; additional requirements. Credit not granted for both T & L 412 and 512.

513 Seminar in Middle School Education 3 Prereq teaching experience. Curriculum patterns and recent research regarding instruction and materials in the contemporary middle school.

514 Methods and Materials for Bilingual/ESL Education 3 Graduate-level counterpart of T & L 414; additional requirements. Credit not granted for both T & L 414 and 514.

515 The Education of Cultural and Linguistic Minority Students 3 Prereq K-12 teaching experience. Issues in the education of language minority students.

516 Advanced Study in Computer-Assisted Language Learning 3 Prereq T & L 510 or 549 or permission of instructor; graduate standing. Research, theory, and practice in computer-assisted language learning.

518 Integrating Technology into the Curriculum 3 Examination and articulation of the potential for new technologies to expand learning opportunities.
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 (EDTE 504).

521 Topics in Education
V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, development, 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.

526 Research in Multicultural Education
3 Prereq T & L 515 or teaching experience. Research and instructional practices focusing on multicultural education.

527 Seminar in Teacher Education Instruction
1 May be repeated for credit; cumulative maximum 4 hours. Teacher preparation program components and rationale, university teaching strategies, and evaluation methods. S, F grading.

528 Content Area Reading Instruction: Theory and Practice 3 For teachers, supervisors, and administrators in elementary, middle, and secondary schools; influence of research on the design of reading strategies.

530 Innovations in Reading 2 Graduate-level counterpart of T & L 431; additional requirements. Credit not granted for both T & L 431 and 330.

532 Children's Literature in the Curriculum
2 Prereq T & L 320 or teaching experience. Graduate-level counterpart of T & L 433; additional requirements. Credit not granted for both T & L 433 and 532.

534 Study Skills and Content Area Instruction
2 or 3 Research and practices related to time management, concentration and memory, note-taking, listening, comprehension and thinking skills; applications in subject-matter instruction.

537 Seminar in Language, Literacy, and Culture
2 or 3 Prereq T & L 411, graduate standing. Interrelationships between schools, literacy, and student cultural background.

538 Writing Across the Curriculum
3 Writing for learning at grade levels K-12.

539 Innovations in Language Arts
3 Prereq T & L 303, 320, or teaching experience. The most recent developments in language arts instruction for preservice and in-service teachers K-12.

540 Elementary School Social Studies
3 Prereq teaching experience. Elementary structures of various social sciences; research findings related to instruction; classroom applications and materials.

544 Advanced Children's Literature
3 Prereq T & L 307; teaching experience. Trends, issues, and research in children's literature.

545 Oral Language Development: Roots of Literacy
3 Prereq teaching experience. Research on children's oral language development; applications to elementary school reading and writing.

546 Written Expression in Elementary School
3 Prereq teaching experience. Research on children's written language development; application to elementary school classroom.

547 Teaching Folk Literature to Children and Adolescents
3 Prereq T & L 307 or teaching experience. Folk literature as a genre in child and adolescent literature; curriculum applications; reading, language development, social studies, creative expression.

548 Teaching Adolescent Literature
3 Prereq T & L 307 or teaching experience. Evaluating, selecting, and using literature for middle school and teenage students.

549 Communicating in a Multilingual Society
3 Prereq T & L 333, 335 or graduate standing. Study of language in social and educational context and its relation to cultural and linguistic diversity.

551 Psychology of Reading
2 or 3 Prereq T & L 320 or 450/451; teaching experience. Psychological, perceptual, motivational, developmental and physiological aspects of reading.

552 Literacy Development 1
Review of current research and approaches to instruction in the development of literacy in elementary and middle grades.

553 Diagnosis and Treatment of Reading Disability
4 (3-3) Prereq T & L 320/321 or 450/451. Remedial techniques for experienced teachers, remedial reading teachers, and reading consultants; causes of disability, testing, diagnosis, and remediation; tutoring.

554 Elementary School Reading 2
Theory and strategies of teaching reading in elementary school.

555 Seminar in Literacy Development
3 May be repeated for credit; cumulative maximum 6 hours. Current and historical research in reading/language arts, infancy through college and adult years; papers presented by faculty, invited speakers, and students.

556 Literacy Development II
3 Review of current research and approaches to instruction in the development of literacy in elementary and middle grades.

557 Research in Reading
2 or 3 Prereq EdPsy 505; T & L 551; teaching experience. Reading research, theoretical and applied, related to the teaching of reading.

558 Improving Comprehensive Through Literature 3 Prereq teaching experience. Key theoretical concepts and their implications for improved comprehension instruction, using children's literature.

560 Research in Teaching 3 May be repeated for credit; cumulative maximum 6 hours. Prereq teaching experience. Recent developments in research on teaching; both quantitative and qualitative research methodologies emphasized.

561 Elementary School Mathematics
3 Prereq T & L 352; Math 252; teaching experience. Research on curriculum and instruction issues in elementary school mathematics.

562 Secondary School Mathematics
3 Prereq T & L 307; teaching experience. Research on curriculum and instruction issues in secondary school mathematics.

563 Seminar in Precalculus Mathematics Education
3 Prereq T & L 542 or 562. May be repeated for credit; cumulative maximum 6 hours. Research on curriculum and instruction in mathematics education in grades K-12.

564 Elementary School Mathematics Methods
3 Introduction to research, theory, and methods of teaching K-8 mathematics; emphasis on integrating theory and practice.

571 Elementary School Science
3 Prereq T & L 371; teaching experience. Theories and research underlying science programs with classroom implications.

572 Elementary School Science Methods
3 Theoretical base to design and implement appropriate standards-based elementary science instruction.

573 Children's Literature and Hands-On Science 3 Prereq graduate standing. Students learn how to bring together language arts and science curricula to instill in children a curiosity about the world around them.

574 Science for All: An Individual and Multicultural Perspective 3 Prereq teaching experience. Implications of cultural and individual diversity for understanding western scientific and mathematical thought; an activity-based, educational perspective.

577 The At-Risk Learner
2 Strategies for working with at-risk students.

580 Multicultural Education in a Global Society
3 Graduate-level counterpart of T & L 480; additional requirements. Credit not granted for more than one of T & L 480, 580, 582.

582 Multicultural and Global Perspectives in Education
2 Concepts, theories and applications of multicultural and global perspectives in teaching and learning. Credit not granted for more than one of T & L 480, 580, 582.

583 Problem Solving in Elementary and Middle Level Education
4 Prereq admission to MTE program. Integration of knowledge and skills to address complex cases in teaching and learning.

586 Issues in At-Risk Education
2 or 3 School and community resources to assist at-risk students and families.

588 Action Research: Teachers as Research 3 Prereq teaching experience. Theoretical concepts, research, issues, models, and strategies for implementation of action research.

590 Internship
V 2-6 May be repeated for credit; cumulative maximum 12 hours. By interview only. Internship 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.

595 Art and Music Education
2 Instruction covering the theory and classroom practice of art and music.

599 Internship and Seminar

597 Topics in In-Service Education
V 1-3 May be repeated for credit; cumulative maximum 9 hours. Graduate-level counterpart of T & L 497; additional requirements. Credit not granted for both T & L 497 and 597. S, F grading.
600 Special Projects or Independent Study Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Special Education
Sp Ed
301 Education of Exceptional Children 3 Classification, developmental characteristics, and etiology of exceptional children; research and methods of instruction in the classroom.

401 Teaching Students with Disabilities 3 Prereq Sp Ed 301; certified major; c/ in Sp Ed 490 for 2 credits or graduate standing. Intervention and monitoring strategies for managing academic, social, and problem behaviors in classroom settings. Credit not granted for both Sp Ed 401 and 501.

402 Assessment and Curriculum for Students with Disabilities 3 Prereq Sp Ed 301; certified major; c/ in Sp Ed 490 for 2 credits, or graduate standing. Methods of assessment, curriculum development, and modification, and instruction for elementary-age students with mild disabilities. Credit not granted for both Sp Ed 402 and 502.

403 Secondary Education for Students with Disabilities 3 Prereq Sp Ed 301; certified major or graduate standing. Overview of practice in the schools for secondary students with disabilities; assessment, methods, and curriculum development. Credit not granted for both Sp Ed 403 and 503.

404 Professional Skills in Special Education 3 Prereq Sp Ed 301 and certified major or graduate standing. Communication, problem solving, liability, record keeping, professional development, legal issues, and program evaluation. Credit not granted for both Sp Ed 404 and 504.

409 Early Childhood Special Education 3 Prereq Sp Ed 301 or c/. Assessment, curriculum, and instructional techniques for teaching young children with handicaps and their families in a variety of settings. Credit not granted for both Sp Ed 409 and 509.

420 Teaching in Inclusive Classrooms 2 Prereq certified education major; c/ in T & L 310, 403, 413, 445, 490 (3 credits); EdPsy 401. Designed for preservice inservice general education (K-12) teachers to learn how to teach students with disabilities. Credit not granted for both Sp Ed 420 and 520.

421 Inclusion Strategies for Special Education Teachers 3 Prereq Sp Ed 501. Graduate-level counterpart of Sp Ed 421; additional requirements. Credit not granted for both Sp Ed 421 and 521.

430 Special Topics in Instruction V 1-3 May be repeated for credit; cumulative maximum 6 hours. New developments in research and practice in program development.

431 Special Topics in Program Development V 1-3 May be repeated for credit; cumulative maximum 6 hours. New developments in research and practice in program development.

440 Methods in Intensive Educational Supports 3 Prereq Sp Ed 301, certified major, or graduate standing. Assessment, curriculum development and modification, and instructional methods for students with severe disabilities. Credit not granted for both Sp Ed 440 and 540.

470 Effective Assessment and Instruction in Reading for Diverse Learners 2 Prereq admission to teacher certification. Preparation of preservice teachers to conduct reading assessment and to design reading interventions for students struggling in reading and literacy.

478 Career Services and Programs for Persons with Disabilities 3 Same as CoPsy 478.

490 Practicum in Special Education V 1-3 May be repeated for credit; cumulative maximum 8 hours. Supervised field experience in special education. S, F grading.

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

501 Teaching Students with Disabilities 3 Prereq c/ in Sp Ed 590 for 2 credits. Graduate-level counterpart of Sp Ed 401; additional requirements. Credit not granted for both Sp Ed 401 and 501.

502 Assessment and Curriculum for Students with Disabilities 3 Graduate-level counterpart of Sp Ed 402; additional requirements. Credit not granted for both Sp Ed 402 and 502.

503 Secondary Special Education for Students with Disabilities 3 Graduate-level counterpart of Sp Ed 403; additional requirements. Credit not granted for both Sp Ed 403 and 503.

504 Professional Skills in Special Education 3 Graduate-level counterpart of Sp Ed 404; additional requirements. Credit not granted for both Sp Ed 404 and 504.

509 Early Childhood Special Education 3 Graduate-level counterpart of Sp Ed 409; additional requirements. Credit not granted for both Sp Ed 409 and 509.

520 Teaching in Inclusive Classrooms 2 Graduate-level counterpart of Sp Ed 420; additional requirements. Credit not granted for both Sp Ed 420 and 520.

521 Inclusion Strategies for Special Education Teachers 3 Prereq Sp Ed 501. Graduate-level counterpart of Sp Ed 421; additional requirements. Credit not granted for both Sp Ed 421 and 521.

522 Topics in Special Education V 1-4 May be repeated for credit; cumulative maximum 8 hours. Recent research developments, issues and/or applications in selected areas of special education.

540 Methods in Intensive Educational Supports 3 Graduate-level counterpart of Sp Ed 440; additional requirements. Credit not granted for both Sp Ed 440 and 540.

578 Career Services and Programs for Persons with Disabilities 3 Same as CoPsy 578.

590 Practicum in Special Education V 1-4 May be repeated for credit; cumulative maximum 8 hours. Supervised experiences in application of theories and practices in special education. S, F grading.

597 Special Education Internship V 2-4 May be repeated for credit; cumulative maximum 6 hours. Supervised internship experience in domestic and international settings. S, F grading.

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

Health Education
H Ed
262 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.

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 H Ed 361. Methods and materials for teaching Health Education.

490 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Same as MvSt 490. S, F grading.

496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 9 hours. Special topics in health.

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

College of Veterinary Medicine

The College of Veterinary Medicine offers courses of study leading to the degrees of Doctor of Veterinary Medicine, Bachelor of Science in Veterinary Science, Master of Science in Veterinary Science, and Doctor of Philosophy. Additional information, including requirements for admission, is contained in the general information section of this catalog.

The College of Veterinary Medicine at Washington State University is accredited by the American Veterinary Medical Association.

The following program is an outline of the minimum requirements necessary for application to professional study in the College of Veterinary Medicine.

PreeVETERINARY REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>1. Arts and Humanities</td>
<td>3-6</td>
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<tr>
<td>2. Communication Proficiency</td>
<td>6</td>
</tr>
<tr>
<td>3. Intercultural Studies</td>
<td>3</td>
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<tr>
<td>4. Social Sciences</td>
<td>3-6</td>
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<tr>
<td>5. World Civilizations</td>
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<td>6. Math Proficiency</td>
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<tr>
<td>7. Writing Portfolio</td>
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</table>

Courses to meet the above requirements must be selected from the list under the General Education Requirements for Graduation section of this catalog.

8. Physical and Biological Sciences | 33-35 |

Except under unusual circumstances applicants will be expected to have completed courses as indicated in each of the following: chemistry including organic and biochemistry; mathematics; physics; zoology or general biology; genetics.

9. Electives

10. Totals Hours Required | 60 |
BACHELOR OF SCIENCE DEGREE IN VETERINARY SCIENCE

The Bachelor of Science degree in Veterinary Science combines credits earned in both the preprofessional and professional programs. The degree is available only to students who have been admitted to the professional program. This degree was designed to benefit veterinary medical students in obtaining employment, applying for scholarships, and qualifying for graduate-level course enrollments. A minimum of 120 semester hours is required for the degree. The minimum basic requirements are:

General Education Requirements (see above) 60 additional hours of acceptable university credit of which 34 hours must be 500-level or above courses in the professional curriculum of the College of Veterinary Medicine

Total semester hours 120

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. 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 147 semester hours are required for graduation. All courses required in the professional program are 500P–600P-level courses.

First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>V M 500P</td>
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<td>V M 510P</td>
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<td>V M 511P</td>
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<td>V M 568P</td>
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<td>V M 512P</td>
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<td>V M 520P</td>
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<td>V M 521P</td>
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<td>V M 534P</td>
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<td>Second Year</td>
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<td>First Semester</td>
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<td>V M 522P</td>
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<td>V M 523P</td>
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<td>V M 537P</td>
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<td>V M 543P</td>
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<td>V M 551P</td>
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<td>V M 587P</td>
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<td>V M 588P</td>
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Third Year

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<th>Semester</th>
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<td>V M 585P</td>
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<td>Second Semester</td>
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<td>V M 570P</td>
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<td>V M 571P</td>
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<td>V M 572P</td>
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<td>V M 590P</td>
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<tr>
<td>Electives</td>
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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 a species-oriented curricular area of emphasis for the fourth year. Each area of emphasis has its own course requirements and elective opportunities. All students must prepare and present a senior paper under faculty supervision.

Honors Program in Veterinary Medicine for Selected Students

A program for admission of highly selected and academically qualified students to the Washington State University College of Veterinary Medicine has been established. This program admits students directly to the college upon completion of one year of undergraduate work at WSU. This is a seven-year program leading to the Doctor of Veterinary Medicine degree after satisfactory completion of the curriculum. It consists of three years of a unique undergraduate preprofessional education and the four-year professional program. The first three years of this program are a combination of Honors College courses and regular university classes which fulfill the preveternary 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.

Preparation for Graduate Study

Students meeting the requirements of the Graduate School and having the Doctor of Veterinary Medicine degree or a bachelor’s degree in allied fields may take work leading to an advanced degree in the College of Veterinary Medicine. Students without the DVM degree will take courses in preclinical fields (anatomy, microbiology, pathology, physiology, parasitology, and pharmacology).

The undergraduate preparation should include two semesters of organic chemistry or one semester of organic chemistry and one semester of physiological chemistry; one year of general physics and one semester of college algebra; one semester of comparative vertebrate anatomy and one semester of physiology.

A combined degree program is available which allows simultaneous pursuit of both DVM and graduate degrees. Admission to the College of Veterinary Medicine and to the Graduate School are prerequisites for entry into the combined degree program.

Department of Veterinary and Comparative Anatomy, Pharmacology, and Physiology


Description of Courses

Veterinary Anatomy

V An

308 Functional Anatomy of Domestic Animals 4 (3-3) Prereq Biol 104. For majors in the College of Agriculture and Home Economics. Macroscopic functional morphology of domestic animals.

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 organs.

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

513 Advanced Neuroanatomy 4 Prereq anatomy or physiology course that included neuroanatomy. Advanced gross and microscopic anatomy of the mammalian central nervous system. Cooperative course taught by WSU, open for UI students (VS 592).

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

700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

Veterinary Medicine

V M

350 Skeletal Preparation 1 May be repeated for credit; cumulative maximum 3 hours. Technique of skeletal preparation is mastered by undertaking and completing project. Skeleton becomes property of student. S, F grading.

508P Research Orientation and Resource 1 Prereq student in veterinary research track. Resources and important issues for identifying and developing a focused area of scholarly activity in biomedical research. S, F grading.
509P Research Issues, Ethics, and Literacy 1 May be repeated for credit; cumulative maximum 3 hours. Prereq student in veterinary research track. Philosophy and history of methodological, ethical and political issues relevant to biomedical research using selected monographs and essays. S, F grading.

510P Veterinary Microscopic Anatomy S (3-6) Prereq first year in Vet Med or graduate student. Microscopic functional morphology of the cell, tissues, and selected organ systems of domestic animals.

511P Veterinary Anatomy 1 S (0-15) Prereq first year in Vet Med or graduate student. Detailed macroscopic functional morphology of the dog with comparison to other domestic animals; developmental anatomy of selected organ systems.

512P Veterinary Anatomy II 3 (0-9) Prereq V M S11P. Detailed macroscopic functional morphology of domestic animals.

513P Veterinary Cell Physiology 4 Prereq first year in Veterinary Anatomy curriculum, admission to Vet Med or graduate student. Cell physiology focusing on endocrine, paracrine, and neurotransmission signaling processes, transcriptional and translational control, and methodologies relevant to medicine.


518P Applied Anatomy of Large Animals 2 (1-3) Prereq V M S12P. Applied anatomy of large animals including surgical anatomy.

519P Anatomy of the Avian and Exotic Species 1 (0-2) Prereq V M S11P. Detailed macroscopic functional morphology of selected avian and exotic species, emphasizing the specialized anatomical adaptations of these animals.

520P Veterinary Physiology 5 (4-3) Prereq V M S10P. Physiology of domestic animals. Cooperative course taught by WSU, open to UI students (V S18).

521P Mammalian Neuroscience 3 (2-3) Prereq V M S10P. Neuroanatomical and neurophysiological bases of veterinary neurology, emphasizing central and peripheral sensory and motor systems.


523P Pharmacology/Toxicology II 4 (3-3) Prereq V M S12P. Pharmacology and toxicology of the systems of domestic animals. Continuation of V M S22P.

525P Animal Behavior for the Practicing Veterinarian 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Prereq by interview only. Study of the treatment of behavioral problems and training of domestic animals.

526P Domestic and Exotic Animal Behavior 2 (1-3) Prereq by interview only. Advanced study of animal behavior, emphasizing difference between exotic and domestic animal behavior. Cooperative course taught by WSU, open to UI students (Zool S26).

527P Clinical Animal Behavior V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq by interview only. Participation in the treatment of animals with behavioral problems and in animal behavior training classes for clients and their animals.

Veterinary Pharmacology and Toxicology, and Physiology

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

501 Fundamentals of Graduate Research in the Life Sciences 1 Prereq by permission only. Seminars/discussions of practical issues confronting life science researchers with emphasis and overview of disciplines related to biomedical research. S, F grading.

505 Design and Analysis of Biomedical Experiments 4 Prereq Math 107, statistics course. Design of experiments with application to clinical and basic biomedical research; choosing, applying, and evaluating appropriate data analysis methods.

521 Cardiovascular Systems 3 (2-3) A system and quantitative treatment of physiological processes in the heart, blood vessels, and lungs.

525 Special Topics in Veterinary and Comparative Pharmacology 1 (0-3) Prereq V M S22P. Practical veterinary pharmacology techniques and clinical applications.

528 Behavioral Mechanisms in Physiology 3 Examination of the physiological transduction mechanisms that enable animals to interact behaviorally with their environment. Cooperative course taught by WSU, open to UI students (Zool S28).

529 Cellular and Molecular Neurobiology 4 Prereq biochemistry course. Basic biochemical processes in the nervous system and their significance for normal and abnormal function. Cooperative course taught by WSU, open to UI students (Zool S29).

530 General and Comparative Neurophysiology 4 Same as Neuro S30.

531 Neuroscience Laboratory Rotation 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Prereq graduate standing. Ten-week rotation through each of three research laboratories; learning procedures and techniques in neuroscience. S, F grading.

534 Advanced Neurophysiology 3 Nervous system from molecular to the behavioral level; electrophysiology. Cooperative course taught by WSU, open to UI students (Zool S34).

535 Pathophysiology of Blood 2 Physiology of erythrocytes, hemostatic system and transfusion medicine.


538 Neuroendocrinology 3 Role of the central nervous system in controlling reproductive functions, stress, growth, biological rhythm and behavior. Cooperative course taught by WSU, open to UI students (AWS S38).

541 Biochemistry 3 Prereq Chem 342. Intermediate biochemistry; introduction to metabolism and the chemical and physical properties of biomolecules. Cooperative course taught by UI (MMBB S41), open to WSU students.

542 Biochemistry 3 Prereq Chem 342. Intermediate biochemistry; introduction to metabolism and the chemical and physical properties of biomolecules. Cooperative course taught by UI (MMBB S42), open to WSU students.

545 Experimental Design 1 (0-2) May be repeated for credit; cumulative maximum 6 hours. Same as Neuro S45. S, F grading.

555 General and Cellular Physiology 4 (3-3) Prereq cell physiology or genetics course. Physiochemical mechanisms of cellular function.

557 Advanced Mammalian Physiology 4 Prereq V Ph 555. Function and control of mammalian organ systems.

564 Brain-Endocrine Interaction 3 Neuroanatomy, physiology, neuropharmacology and role of neuroendocrinology; the integrative regulation of endocrine and visceral functions. Cooperative course taught by WSU, open to UI students (Zool S64).

590 Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Seminars by advanced graduate students and faculty (both in VCAPP and around WSU) on their research areas. S. F grading.

592 Research Topics in Physiology 2 May be repeated for credit; cumulative maximum 6 hours. Concepts and controversies within a specific and highly focused domain of physiological research.

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


Description of Courses

Veterinary Medicine


502P Language and Culture for International Externships 1 Prereq two semesters Spanish. Language and culture for students intending on carrying out international externships in veterinary medicine, animal production, or related areas. S, F grading.

257
504P International Field Studies V 1 (0-3) to 6 (0-18) Prereq V M 501P, 502P, 503P, fourth year Vet Med. Preceptorship in the US or overseas, under direct supervision of veterinarian, agiculturist or public health professional; related to international veterinary medicine. S, F grading.


552P Small Animal Medicine II 5 Prereq V M 551P. Diagnosis and treatment of small animal diseases. Continuation of V M 551P.


554P Surgery Laboratory I 1 (0-3) Prereq c// in V M 553P. Surgical exercises using small animals.

555P Surgery Laboratory II 1 (0-3) Prereq c// in V M 553P. Surgical exercises minimizing use of living animals.


558P Diseases and Management of Pet and Wild Birds 2 (1-3) Prereq third year Vet Med. Management and handling, diagnosis and treatment of various disease conditions of pet and wild birds.

560P Clinical Problem Solving V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 4 hours. Prereq admission to DVM program. Web-based clinical problem solving course designed to enhance problem-solving skills using simulated patients. S, F grading.

561P Clinical Ophthalmology 1 Prereq second year in DVM program. Basic concepts of clinical veterinary ophthalmology developed and presented by veterinary ophthalmologists.

562P Clinical Dermatology 1 Prereq second year in DVM program. Basic concepts of clinical veterinary dermatology developed and presented by veterinary dermatologists.

568P Animal Restraint and Production 1 (0-3) Prereq first year in professional DVM program. The restraint and production aspects of animals commonly seen by veterinarians. S, F grading.


570P Large Animal Medicine II 6 Prereq V M 569P. Diagnosis and treatment of large animal infectious diseases. Continuation of V M 569P.


572P Surgery II 2 Prereq V M 553P. Large animal surgical techniques.

573P Surgery Laboratory III 1 Prereq c// in V M 518P and 572P. Surgical exercises using large animals.


575P Small Animal Theriogenology 1 Prereq third year professional DVM program. Information on management and disorders of the canine and feline reproductive systems as it relates to veterinary practice.


577P Herd Production Medicine 3 (2-3) Health Management of livestock herds, targeting measures of productivity and profitability.

580P Basic Nutrition 1 Prereq acceptance into DVM program. Introduction to the concepts of basic nutrition designed for the first year veterinary student.

585P Epidemiology 2 Prereq acceptance into DVM program. Minimally quantitative survey in which health is framed as a population phenomenon.

586P Analytic Epidemiology 2 (1-3) Prereq statistics course. Problem-solving methods related to health events and other occurrence phenomena.


589P Clinical Pathology 3 (2-3) Prereq second year in Vet Med. Laboratory diagnostic procedures and interpretation.

590P Veterinary Clinical Nutrition V 1-3 May be repeated for credit; cumulative maximum 3 hours. Large and small animal clinical nutrition; nutrient composition; nutritional diseases and practical feeding methods.


592P Small Animal Transfusion Therapy 1 (0-3) Prereq V M 460, 463. Blood collection, storage, pretransfusion testing, component therapy and transfusion reactions.

598P Introduction to Clinics 1 (0-3) Prereq 3rd year Vet Med. Introduction to the practice of clinical veterinary medicine and surgery within the Veterinary Teaching Hospital including records, presentation and protocol. S, F grading.

599P Special Problems V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq enrollment in DVM Professional Program. S, F grading.


602P Small Animal Surgery 4 (0-12) Prereq fourth year Vet Med. Surgical cases in clinic, ward round, case discussions by students, seminars by faculty, designed surgical exercises. S, F grading.

603P Clinical Elective at Oregon State University V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year professional DVM program. Clinical medicine training in diseases of food animals and horses; clinic rounds and diagnostic procedures. S, F grading.

610P Basic Small Animal Rotation V 8 (0-24) to 12 (0-36) Prereq fourth year Vet Med. Required rotation through the medical and surgical services of the Small Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

611P Small Animal Surgery-Orthopedic Service V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Small Animal Orthopedic Surgery Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

612P Small Animal Soft Tissue Surgery V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Small Animal Soft Tissue Surgery Service in the Small Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

613P Small Animal Medicine Elective Referral V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Small Animal Medicine Referral Practice Service in the Small Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

614P Small Animal Medicine - Local Practice Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Small Animal Medicine Local Practice Service in the Small Animal Clinic, Veterinary Taching Hospital. S, F grading.

615P Small Animal Medicine - Specialty Practice Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience in a specialty practice area of small animal medicine, surgery, or radiology. S, F grading.

616P Exotic Animal Medicine V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience in a specialty practice area of small animal medicine, surgery, or radiology. S, F grading.

617P Clinical Neurology V 1 (0-3) to 3 (0-9) Prereq 4th year DVM student. Rotation will emphasize neuroanatomical localization, differential diagnosis, diagnostic testing, and treatments. S, F grading.

618P Veterinary Dentistry V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq fourth year Vet Med. Clinical experience, laboratory exercises, and instructional sessions to increase proficiency in clinical dentistry. S, F grading.

628P Equine Surgery Clinical Rotation V 2 (0-6) to 6 (0-18) Prereq 4th year in the DVM program. Required rotation through the Equine Surgery services of the Veterinary Teaching Hospital.
629P Equine Medicine Clinical Rotation V 2 (0-6) to 6 (0-18) Prereq 4th year in the DVM program. Required rotation through the Equine Medicine services of the Veterinary Teaching Hospital.

630P Agricultural Animal Clinical Rotation V 2 (0-6) to 6 (0-18) Prereq fourth year in the DVM program. Required rotation for Agricultural Animal medical, surgical, and ambulatory service of the Veterinary Teaching Hospital. S, F grading.

632P Large Animal Theriogenology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical theriogenology subjects in large animals. S, F grading.

633P Animal Medicine/Surgery V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical subjects in food animal diseases and herd health/preventive medicine. S, F grading.

634P Epidemiology of Diseases V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med, V M 409/509. Principles of disease outbreak investigations, host-agent-environment interactions, and intervention strategies in animal populations. Field trips required.

635P Preventive Medicine at Canine Center V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Preventive medicine and management practices related to control of animal diseases at Canine Center, UI, Caldwell Idaho.

636P Equine Medicine Elective V 1 (0-3) to 4 (0-12) May be repeated for credit, cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Equine Medicine Service in the Large Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

637P Equine Surgery Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Equine Surgery Service in the Large Animal Clinic, Veterinary Teaching Hospital.

638P Equine Track V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med, enrollment in equine career track. Clinical experience with the Equine Surgery Service of the Large Animal Clinic, Veterinary Teaching Hospital.

639P Small Animal Theriogenology V 1 (0-3) to 4 (0-12) Prereq fourth year professional DVM program. Hands-on experience in diagnosis, treatment, prevention and management of disorders related to canine and feline reproduction. S, F grading.

650P Anesthesia Case Management V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med. Required rotation through the clinical anesthesia service of the Small Animal Clinic and Large Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

Description of Courses

Veterinary Medicine

V M

500P Professional Orientation and Ethics 1 Orientation to and ethics of the veterinary medical profession for first-year veterinary students. S, F grading.

534P Veterinary Immunology 3 (2-3) Prereq major in Vet Med or graduate student in Vet S. Immunology for the professional veterinary student. S, F grading.


536P Veterinary Bacteriology 4 (3-3) Prereq second year Vet Med. Bacteria that produce disease in animals. S, F grading.

537P Veterinary Parasitology 4 (3-3) Prereq second year Vet Med. Arthropods, protozoa, and helminths of veterinary importance; their host-parasite relationship and control. S, F grading.


559P Special Animal Medicine V 1-3 Prereq third year Vet Med. Handling, restraint, care, normative features, procedures and diseases of unusual animals as pets or those used in food production or research.

656P Diagnostics V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med. Advanced study in diagnostic pathology, toxicology, and microbiology.


Veterinary Microbiology

V Mic

435 Disease Concepts for Wildlife Biologists 3 Biologic aspects of infectious diseases and environmental contaminants in wild mammalian and avian populations. Cooperative course taught by WSU, open to UI students (VS 435/ WLF 444).

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

531 Mechanisms of Immune Regulation in Laboratory and Domestic Animals 3 Prereq MBioS 440. Analysis of immune regulation in vertebrates; ontogeny, phylogeny, immune regulation.

532 Virology 3 Prereq MBioS 303; MBioS 442 or V M 535P. Advanced topics in basic virology.

535 Advanced Readings in Veterinary Microbiology 1 (0-3) May be repeated for credit. Prereq fourth year in Vet Med or graduate student in Vet S. Supervised reading program which purports publications of intermediate technical difficulty and advanced textbooks.

536 Diagnostic Microbiologic Conference 1 (0-3) May be repeated for credit. Prereq graduate student in Vet S. Identification of animal pathogens in clinical material.

537 Diagnosis of Viral and Rickettsial Diseases of Domestic Animals 3 (1-6) Prereq V M 534P, 535P, 546P. Clinical, pathological, and laboratory diagnosis of viral and rickettsial diseases of domestic animals.

541 Advanced Diagnostic Microbiology 1 (0-3) May be repeated for credit; cumulative maximum 8 hours. Prereq V M 534P, 535P, 536P. Microbiology laboratory for performing and interpreting virologic, serologic, and related tests for the diagnosis of animal diseases.

562 Molecular Diagnostic Microbiology 1 (0-3) May be repeated for credit; cumulative maximum 3 hours. Prereq V Mic 541 or c/c. Discussion and molecular laboratory for detection and identification of infectious agents for the diagnosis of animal diseases.

572 Advanced Topics in Microbiology, Parasitology, or Immunology V 1-3 May be repeated for credit; cumulative maximum 4 hours. Advanced topics in microbiology, parasitology, or immunology presented in short-course, or workshop format.

591 Seminar in Diagnostic Microbiology 1 May be repeated for credit; cumulative maximum 8 hours. Seminar in diagnostic veterinary microbiology.

592 Advances in Immunobiology 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592).

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

700 Master's Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

V Pa

410 Survey of Pathobiology 3 Overview of pathobiology experimental oncology, epidemiology, and aging that emphasizes detecting, understanding and preventing disease.
Freshman Year

First Semester Hours
Communication Proficiency [C,W] (GER) 3
Math Proficiency [N] (GER) 3
W St 300 [S] [M] (GER) 3
W St Humanities Elective 3

Second Semester Hours
Arts & Humanities [H,LG] or Social Sciences [S,K] (GER) 3
Intercultural [L,G,K] (GER) 3
W St 332 [J] (GER) 3
W St Social Science Electives 6
Prepare for Women's Studies Internship (W St 410)

Year

First Semester Hours
Arts & Humanities [H,LG], Intercultural [L,G,K], or Social Sciences [S,K] (GER) 3
Physical Sciences [P] (GER) 4
W St 484 [S,D] (GER) 3
Electives 3
Complete Writing Portfolio

Second Semester Hours
Arts & Humanities [H,LG], Intercultural [L,G,K], or Social Sciences [S,K] (GER) 3
W St 410 3
W St Elective 3
300-400-level Electives 6

Sophomore Year

First Semester Hours
Communication Proficiency [C,W] (GER) 3
Math Proficiency [N] (GER) 3
W St 300 [S] [M] (GER) 3
W St Humanities Elective 3

Second Semester Hours
Arts & Humanities [H,LG] or Social Sciences [S,K] (GER) 3
Intercultural [L,G,K] (GER) 3
W St 332 [J] (GER) 3
W St Social Science Electives 6
Prepare for Women's Studies Internship (W St 410)

Junior Year

First Semester Hours
300-400-level W St Elective 3
Arts & Humanities [H,LG], Intercultural [L,G,K], or Social Sciences [S,K] (GER) 3
Physical Sciences [P] (GER) 4
W St 484 [S,D] (GER) 3
Electives 3
Complete Writing Portfolio

Second Semester Hours
Arts & Humanities [H,LG], Intercultural [L,G,K], or Social Sciences [S,K] (GER) 3
W St 410 3
W St Elective 3
300-400-level Electives 6

Senior Year

First Semester Hours
300-400-level W St Elective 3
W St 481 [M] or 485 3
W St Elective 3
300-400-level Electives 6

Second Semester Hours
300-400-level Electives 9
Tier III Course (GER) 3
Electives 3

1 Consult adviser.

Description of Courses

Women's Studies

W St
105 [S,D] Realizing Justice in a Multi-Cultural Society 3 Same as Crm J 105.
150 [S,D] Marital and Sexual Life Styles 3 Same as Soc 150.
200 [S] Introduction to Women's Studies 3 Multi-disciplinary perspectives on women and on their past, present, and potential contributions.
214 Gender and Culture in America 3 Same as Anth 214.
216 [H] American Culture 3 Same as Hist/Engl 216.
230 Human Sexuality 3 Same as Psych 230.

250 [S] The American Health Care System 3 Same as Pharb 250.
255 [S,D] Chicana/o History 3 Same as CAC 255.
290 [S,D] History of Women in American Society 3 Same as Hist 290.
300 [S,M] Intersections of Race, Class and Gender 3 Prereq: CAC 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 Analyts 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 306.
308 [H] Women Artists I, Middle Ages-1900 3 Same as FA 308.
309 [H] Women Writers 3 Same as Engl 309.
310 [H] Women Artists II, Twentieth Century 3 Same as FA 310.
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.
312 [H,D] Philosophy and Feminism 3 Same as Phil 312.
315 Women in Management and Leadership 3 Analysis of women's historical and contemporary role in American management.
316 [K] Gender in Cross Cultural Perspective 3 Same as Anth 316.
320 Resource Management and Problem Solving 3 Same as H D 320.
321 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subjects/issues relating to women.
324 [S] Psychology of Women 3 Same as Psych 324.
330 Women and the Law 3 Historical base of women's legal rights and obligations; analysis of legislative and judicial responses to sexual discrimination.
332 [H] Global Feminisms 3 Prereq: W St 200 or Anth 101. 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.
350 [S] European Women's History, 1400-1800 3 Same as Hist 350.
351 [S,D] The Family 3 Same as Soc 351.
372 [S,D] Native American Women in Traditional and Contemporary Societies 3 Same as CAC 372.
375 [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.
380 [S] History of Medicine 3 Same as Hist 380.
382 Modern American Literature 3 Same as Engl 382.
384 [S,D] Sociology of Gender 3 Same as Soc 384.
398 [H,D] History of Women in the American West 3 Same as Hist 398.
402 Cross-Cultural Gender and Kinship 3 Same as Anth 402.
403 [T,S] Violence Toward Women 3 Same as Crm J 403.
405 [M] Contemporary Art: Theory and Practice 3 Same as FA 405.
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.
409 [T,H] Women Writers in the American West 3 Same as Engl 409.
410 Internship V 1-12 Prereq W St 200; 300 or 481 with B or better, by interview only. May be repeated for credit; cumulative maximum 12 hours. Supervised experience in approved campus or community agencies or projects focusing on women's issues.
411 Asian Pacific American Women 3 Same as CAC 411.
421 The Frontier and the American West 3 Same as Hist 421.
454 [T] La Chicana in US Society 3 Same as CAC 454.
460 [T,K] 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.
464 Gender and the Media 3 Same as Com 464.
475 Marginality and Movement 3 Same as MvtSt 475.
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,S,D] Lesbian and Gay Studies 3 Prereq Soc 101, 102, or W St 200. Prereq completion of one Tier I and three Tier II courses. Interdisciplinary exploration of issues related to gender and sexuality, explored transhistorically and cross-culturally, including race, class and age differences.
485 Theoretical Issues in Gay and Lesbian Studies 3 Prereq W St 484 or 300-400-level W St course. Theoretical construction and interpretation of sexualities, gender, and identity.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.

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Appendix—Academic Regulations

UNDERGRADUATE ADMISSION REQUIREMENTS

1. GENERAL REQUIREMENTS
   (a) To be eligible for admission to Washington State University, an applicant must be a high school graduate or its equivalent.
   (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) Exceptions to the admission requirements may be made only by 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.

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). On the basis of these three criteria, the most qualified applicants are offered admission.

Applicants are required to submit a high school transcript showing completion of the following courses:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Minimum Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Four years (including at least one year each of composition and literature).</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Three years (one year of geometry and two years of algebra including an introductory component of trigonometry).</td>
</tr>
<tr>
<td>Science</td>
<td>Two years (including at least one year of laboratory).</td>
</tr>
<tr>
<td>Social Science</td>
<td>Three years (including at least one year of history).</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>Two years of a single foreign language (or approved sign language).</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>One year of fine, visual, or performing arts, or one additional year of academic elective.</td>
</tr>
</tbody>
</table>

Applicants from unaccredited high schools may be required to pass validating examinations.

3. REGULAR ADMISSION OF FRESHMEN 25 YEARS OF AGE OR OLDER. A student 25 years of age or older who is seeking initial entry at the freshman level may be offered regular admission if, as a minimum, the student presents a score of at least 700 on the SAT, 15 on the ACT, or 83 on the Washington Pre-College test taken prior to June 1, 1989.

ADVANCED STANDING (Transfer Applicants)

4. TRANSFER REQUIREMENTS
   (a) Applicants with at least 27 semester hours of transferable credit from a regionally accredited post-secondary institution must present a cumulative grade point average of at least 2.00.
   (b) Applicants with less than 27 semester hours of transferable credit will be considered for admission if they also meet the freshman requirements and the 2.00 grade point average transfer requirement.

5. DOCUMENTS REQUIRED. An applicant for admission to advanced standing, in addition to meeting the requirements for entrance to the freshman class, shall present: (a) an application; (b) a complete official transcript from each higher institution attended; and (c) a record of high school work if fewer than 27 transferable semester credit hours.

All advanced standing shall be tentative pending the satisfactory completion of at least one semester's work.

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 transfer credit allowed from regionally accredited two-year or community colleges shall be 60 semester hours toward a baccalaureate degree irrespective of when those hours were earned provided that the courses are essentially equivalent to those at WSU.

(d) Students may be allowed additional credit from a regionally accredited two-year or community college under the following conditions:
   (1) The student has been admitted to WSU with at least 90 quarter (60 semester) hours of transferable lower-division credit already completed.
   (2) The student's WSU academic adviser has indicated that additional lower-division course work is required to meet specific general education, college or departmental requirements for a WSU degree.

(e) Courses to meet these general education, college or departmental requirements are not offered at the WSU campus to which the student has been admitted or at the student's delivery site.

(f) No more than 20 total quarter (13 total semester) hours of additional lower-division credit will be allowed toward a baccalaureate degree earned by a student enrolled at a WSU campus or delivery site which does not offer the required course(s).

(g) Applicants with less than 27 semester hours of transferable credit will be considered for admission to advanced standing if:
   (1) They have completed the Associate of Arts—Oregon transfer degree from an Oregon community college.
   (2) They have completed the Associate of Science Transfer Degree (A.S.T.) from a Washington Community College.
   (3) They have completed the Associate of Science Degree from a Washington community college.

(h) The Associate of Science Degree from a Washington Community College guarantees completion of the lower-division General Education Requirements, but does not guarantee junior standing or 60 semester credits. Students who have completed the Associate of Science Degree from an accredited institution will be considered for admission to the baccalaureate institution in the same manner as other transfer applicants.

(i) Applicants seeking admittance to the Graduate School must follow procedures in the Graduate School Policies and Procedures Manual available in the Graduate School.

(j) Students who have completed the Associate of Science Degree from an accredited institution will be considered for admission to the baccalaureate institution in the same manner as other transfer applicants.

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. 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:

   (a) Advanced Placement Program. Credit for AP examinations will be granted in an amount equal to the 100-200-level course or courses in the particular discipline tested, as approved by the specific academic department. The acceptable score for receiving credit is published in the catalog for the year in which the AP examination is taken.
Appendix—Academic Regulations

<table>
<thead>
<tr>
<th>AP Examination</th>
<th>Score</th>
<th>WSU Course (credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art: Studio (Drawing)</td>
<td>3</td>
<td>Fine Arts 110 (3)</td>
</tr>
<tr>
<td>Art: Studio (General)</td>
<td>3</td>
<td>Fine Arts Elective (3)</td>
</tr>
<tr>
<td>Art: History</td>
<td>3</td>
<td>Fine Arts Elective [H] (3)</td>
</tr>
<tr>
<td>Biology</td>
<td>3</td>
<td>Bio S 103, 104 (8)</td>
</tr>
<tr>
<td>Calculus AB</td>
<td>3</td>
<td>Math 171 (4)</td>
</tr>
<tr>
<td>Calculus BC</td>
<td>3</td>
<td>Math 171, 172 (8)</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3</td>
<td>Chemistry Elective [P] (3)</td>
</tr>
<tr>
<td>Computer Science A</td>
<td>3</td>
<td>Cpt S 150 (4)</td>
</tr>
<tr>
<td>Computer Science AB</td>
<td>3</td>
<td>Cpt S 150, 250 (8)</td>
</tr>
<tr>
<td>Economics (Micro)</td>
<td>3</td>
<td>Econ 101 (3)</td>
</tr>
<tr>
<td>Economics (Macro)</td>
<td>3</td>
<td>Econ 102 (3)</td>
</tr>
<tr>
<td>English Language/Comp</td>
<td>3</td>
<td>English Elective (3)</td>
</tr>
<tr>
<td>English Language/Comp</td>
<td>4</td>
<td>Engl 101 (3)</td>
</tr>
<tr>
<td>English Literature/Comp</td>
<td>3</td>
<td>English Elective (3)</td>
</tr>
<tr>
<td>English Literature/Comp</td>
<td>4</td>
<td>Engl 101, 108 (6)</td>
</tr>
<tr>
<td>French Language</td>
<td>3</td>
<td>Fren 101 (4)</td>
</tr>
<tr>
<td>French Language</td>
<td>5</td>
<td>Fren 101, 102 (8)</td>
</tr>
<tr>
<td>French Literature</td>
<td>3</td>
<td>French Elective (3)</td>
</tr>
<tr>
<td>German Language</td>
<td>3</td>
<td>Ger 101 (4)</td>
</tr>
<tr>
<td>German Language</td>
<td>5</td>
<td>Ger 101, 102 (8)</td>
</tr>
<tr>
<td>Government (American)</td>
<td>3</td>
<td>Political Science Elective (3)</td>
</tr>
<tr>
<td>Government (American)</td>
<td>4</td>
<td>Pol S 101 (3)</td>
</tr>
<tr>
<td>Government (Comp.)</td>
<td>3</td>
<td>Political Science Elective (3)</td>
</tr>
<tr>
<td>Government (Comp.)</td>
<td>4</td>
<td>Pol S 102 (3)</td>
</tr>
<tr>
<td>History (US)</td>
<td>3</td>
<td>Hist 110 (3)</td>
</tr>
<tr>
<td>History (US)</td>
<td>4</td>
<td>Hist 110, 111 (6)</td>
</tr>
<tr>
<td>History (European)</td>
<td>3</td>
<td>Hist 101 (3)</td>
</tr>
<tr>
<td>History (European)</td>
<td>4</td>
<td>Hist 101, 102 (6)</td>
</tr>
<tr>
<td>Latin: Vergil</td>
<td>3</td>
<td>Classics Elective (4)</td>
</tr>
<tr>
<td>Latin: Latin Literature</td>
<td>3</td>
<td>Classics Elective (3)</td>
</tr>
<tr>
<td>Music Theory</td>
<td>3</td>
<td>Music Elective (2)</td>
</tr>
<tr>
<td>Music Listening/Lit.</td>
<td>3</td>
<td>Music Elective [H] (3)</td>
</tr>
<tr>
<td>Physics B</td>
<td>3</td>
<td>Physics Elective (no lab) [P] (6)</td>
</tr>
<tr>
<td>Physics C. Mech.</td>
<td>3</td>
<td>Physics Elective (no lab) [P] (3)</td>
</tr>
<tr>
<td>Physics C. E + M</td>
<td>3</td>
<td>Physics Elective (no lab) [P] (3)</td>
</tr>
<tr>
<td>Psychology</td>
<td>3</td>
<td>Psych 105 (3)</td>
</tr>
<tr>
<td>Russian Language</td>
<td>3</td>
<td>Rus 101 (4)</td>
</tr>
<tr>
<td>Russian Language</td>
<td>3</td>
<td>Russian Elective (3)</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>3</td>
<td>Span 101 (4)</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>5</td>
<td>Span 101, 102 (8)</td>
</tr>
<tr>
<td>Spanish Literature</td>
<td>3</td>
<td>Spanish Elective (3)</td>
</tr>
<tr>
<td>Statistics</td>
<td>3</td>
<td>Math 205 (3)</td>
</tr>
</tbody>
</table>

(b) College Level Examination Program (CLEP)

(1) 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.

(2) Students with junior standing (60 semester credits or more) are not eligible for credit through CLEP examinations. Contact the Office of Admissions for specific details.

(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 college 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 credit at the advanced placement level, in courses which they have audited. Upper-division students may not receive credit by challenge examination in lower-division courses in their major field. Undergraduate students may not receive credit by challenge examination in any course prerequisite to a course in which they are enrolled or have received credit at the advanced placement level. 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 $179 per course.

(d) Military Credit. Credit will be granted for satisfactory completion of:

(1) Military service schools in the amount recommended by the American Council of Education in the publication, Guide to the Evaluation of Educational Experiences in the Armed Forces.

(2) United States Armed Forces Institute correspondence courses (under the rules applicable to other correspondence work).

(3) Danes Credit: Elective credit for DANETES 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 instructor. Those wishing to audit or change from audit to credit 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 Time Schedule 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 time commitment required of a typical student in a particular course of study. For the WSU semester system one semester credit is assigned for a minimum of 45 hours of total time commitment. This time commitment includes: 1) time spent in scheduled course activities organized by an instructor (lectures, discussions, workbooks, videotapes, laboratories, studios, fieldwork, etc.); 2) time spent in group activities related to course requirements; and 3) time spent in reading, studying, problem solving, writing, and other preparations for the course. The minimum time commitment, based on a fifteen-week semester and a traditional campus setting, 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) independent study—three hours of independent work per week for each credit hour; 4) studio—two hours of studio work per week for each credit hour; 5) ensemble—four hours of ensemble work per week for each credit hour. For courses to be given during a different time frame than the fifteen-week semester or in a different format than the traditional, the course proposal must clearly define how the total time commitment is determined to justify the credit hours requested for the course.

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28. HIGH SCHOOL COOPERATIVE PROGRAM. High school students may enroll as part-time students 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. If for high school credit, a special fee applies.

29. WORK FROM HIGH SCHOOLS, BUSINESS COLLEGES, AND COLLEGES AND UNIVERSITIES WITHOUT REGIONAL ACCREDITATION. No university credit shall be given for work from high schools, business colleges, or colleges and universities without regional accreditation.

31. CREDIT TO HIGH SCHOOL STUDENTS FOR COURSES COMPLETED PRIOR TO HIGH SCHOOL GRADUATION. Washington State University encourages students to complete rigorous college preparatory courses in high school, or to take college courses while in high school if they have adequate preparation. In some cases college credit may be awarded when consistent with the following criteria.

(a) High School Courses: Some high schools may offer instruction at the college level, and when consistent with university and academic department policies, college credit will be awarded if student achievement is validated by an approved national examination such as Advanced Placement or International Baccalaureate, or a review or examination administered by the university.

(b) Running Start Program:
(1) Credit will be awarded for college courses taken prior to high school graduation when such courses are completed through the state of Washington’s Running Start Program.
(2) Courses offered by Washington State University to high school students participating in Running Start will have an enrollment of at least seventy percent of regularly admitted students in each course section.

(c) Other Courses: College credit may be awarded for courses taken in high school when consistent with the following conditions:
(1) The course must also be currently available on the campus of the regionally accredited college or university and must be listed in the college or university catalog. The course, regardless of setting, must use the college or university curriculum.
(2) Students interested in credit must register and pay fees at the beginning of the term and would be subject to the same grading and tuition refund policies as students on the campus of the regionally accredited college or university.
(3) The faculty teaching the course in high school must carry a regular or adjunct faculty appointment at the regionally accredited college or university.
(4) The students taking the course in the high school must be assessed and graded in the same manner as students taking the course on the campus of the regionally accredited college or university. Student work, whether completed for the course offered on-campus or at the high school, must be graded and evaluated by the same standards.

34. REPEAT COURSES. Students who wish to repeat a course in which they have received a grade of C- or below or an incomplete (I) or a withdrawal (W) will be eligible to enroll within the next two semesters ONLY if there is space available in the course. NOTE: If a student repeats a course in which an incomplete grade was received, the incomplete grade will be changed to F. (See Rule 90h.)

(a) Repeating courses graded below C. A grade of C- or below may be disregarded if the student repeats the course and earns another grade. The last grade received shall stand as the course grade, and the last grade only shall count on the cumulative grade point average and contribute to the total number of hours required for graduation. For some purposes, the first grade only shall be used. For purpose of record the series of repeats and grades will be retained on the student’s official record. Grades C and above may not be repeated for credit or grade points. It is the student’s responsibility to indicate all resident repeats at the time of registration. Repeats by correspondence, extension, or in residence at other institutions must be reported in writing to the Office of the Registrar.

(b) Repeating for additional credit.
(1) Some courses have been approved for repeat credit, i.e., the student may re-enroll in the course during a subsequent semester and credit may be accumulated. Such courses are designated in the WSU catalog as “May be repeated for credit” and will list the maximum credit limitation.
(2) Courses which have been approved for repeat credit, such as topics, may offer multiple sections of a course during any one semester. Students may not enroll in more than one section of these courses in any one semester; the repeat credit approval applies only to re-enrollment in a subsequent semester.

UNDERGRADUATE ACADEMIC DEFICIENCY
37. An undergraduate student who has a cumulative grade point average of 2.00 or higher but whose grade point average in each of the last two consecutive semesters is below 2.00 will be deficient and must apply to the Student Advising and Learning Center for reinstatement. Certified majors must have the permission of their major departments to retain certification. Students deficient under this rule will be permitted to enroll in courses normally reserved for certified majors during the next semester of their enrollment. In cases of repeat enrollments, Rule 34 applies.

38. An undergraduate who at the end of any semester has failed to maintain a 2.00 cumulative grade point average will be dropped and must have the permission of the Student Advising and Learning Center to re-enroll. A certified major who at the end of any semester has failed to maintain a 2.00 cumulative grade point average in major courses may be dropped (decertified) from the major. (See Rule 56.)

39. An undergraduate student who at the end of two consecutive semesters has failed to maintain a 2.00 cumulative grade point average will normally not be reinstated.

40. Appeals will be considered only when there are unusual extenuating circumstances and must be submitted in writing to the Student Advising and Learning Center.

41. An undergraduate student who has been reinstated after becoming deficient under Rules 37, 38 or 39 will be on official probation. The specific conditions of reinstatement for students who are on official probation will be determined by Academic Standing. Students on probation who fail to comply with the conditions of their reinstatement may be barred from future enrollment.

42. Students enrolled in professional programs (e.g., clinical courses in nursing) that involve human health care may be subject to more stringent requirements in grading, repeating course work, and retention provided the more stringent requirements are approved through Faculty Senate channels and are published and are made available to students prior to certification. Students are referred to the nursing and pharmacy offices for specific requirements.

43. In evaluating admission credentials of transfer students or when considering reinstatement of former WSU students whose cumulative g.p.a. was below a 2.00 when they were dropped for low scholarship, all work completed prior to a specified date, not less than four years prior to the time of application, may be disregarded and all credit withheld. After 15 semester hours of satisfactory work at WSU following admission or reinstatement, the student may petition to restore some of the credits previously withheld. Only 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. Requests for admission or reinstatement and petitions for credit restoration will be considered by the Academic Advising and Reinstatement Subcommittee for former WSU students and by the Admissions Subcommittee for transfer students.

CONDUCT
45. Students, no matter where they reside, while enrolled in the institution, are responsible for their conduct to the President and the faculty, acting usually through the Vice Provost for Student Affairs or the University Conduct Committee or both. Students are expected to show due respect for order, morality, and the rights of others. Students who fail to conduct themselves properly are subject to discipline, which may extend to temporary or permanent removal from the institution.

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 adviser’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.

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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 adviser 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 assistantship 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), 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 g.p.a.; however, F grades earned by pass, fail enrollees will be included in g.p.a. computations. Departments and programs may deny their major permission to, 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 may declare an academic major upon matriculation to the university. Upon completion of 24 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. A student who has completed 60 semester hours must certify a major as a condition to further enrollment with approval as above. Transfer students with 60 or more semester hours of transfer credit who are undecided about a major may, upon notification of the Student Advising and Learning Center, spend one semester being advised within 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.

54. **MINOR OR SECOND MAJOR.** A student who has completed 60 semester hours 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.

A minor requires a minimum of 16 semester hours, half of which must be in upper-division work. Upon completion of the requirements, the department will notify the Registrar’s Office, and the minor or second major will be posted on the student’s permanent record (transcript).

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. **RECERTIFICATION.** A certified major who becomes deficient and is dropped by the major department or program will be eligible to recertify, on a space-avail-

57. **STUDENT PETITIONS FOR EXCEPTIONS TO ACADEMIC CALENDAR DEADLINES.** Students may, with the payment of a service fee, petition for exceptions to the academic calendar deadlines listed in the WSU Time Schedule (e.g., withdrawal after the deadline). 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 must be made within two years of the date of enrollment in the course.

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. **ADDED COURSE.** Students may add course enrollments only through the 9th day of the semester. (NOTE: If the course is being added pass, fail the approval of the student’s faculty advisor is also required.)

A student wishing to petition for an exception to the five-day deadline listed above must obtain the approval of the instructor.

67. **DROPPING A COURSE.** A student may drop a course without record up to the end of the 30th day of the semester in which the course is offered or according to a prorated schedule for shorter academic terms.

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 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. After the 6th withdrawal, a student may in exceptional circumstances submit a petition through the student’s major department (usually through the adviser) for additional withdrawals to be exempted from this limit of 6 withdrawals. The petition will be reviewed and the final decision will be made by the dean’s office of the student’s college within two weeks of submission. The petition must be filed by the end of the term in which the course was taken.

70. **WITHDRAWAL FROM THE INSTITUTION.** Students who wish to withdraw from the institution initiate the withdrawal through the Office of Student Affairs at WSU Pullman or the Student Services Office at WSU Spokane, WSU Tri-Cities or WSU Vancouver, or through the Extended Degree Program Office.

(a) Students withdrawing during the first four weeks of the semester will have
their permanent records marked “withdraw (date).” (Course enrollments will not be recorded.)

(b) Students withdrawing 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 withdrawal 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 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 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.

73. ABSENCES. Absences impede a student’s academic progress and should be avoided.

(a) UNIVERSITY SPONSORED. Any student who is required to participate in off-campus, university-sponsored activities such as field trips, musical performances, judging teams, intercollegiate athletic events, etc., should obtain an official Class Absence Request form from the faculty or staff member supervising the off-campus activity. The form must contain specific information concerning the activity and date, be signed by the supervising faculty or staff member, and be submitted by the student at least one week in advance to the individual instructors of the student’s classes. It is requested that a student not be penalized for absence from class provided a properly signed Class Absence Request form has been filed with the instructor prior to the absence. These university-sponsored absences are subject to an instructor’s attendance policy and are not intended to imply additional acceptable absences. In all instances, it is the student’s responsibility to make up all work missed. Problem cases should follow the Academic Complaint Procedures, Rule 104.

(b) OTHER EXCUSED ABSENCES. Students must sometimes miss examinations or other academic obligations affecting their grades because of illness, personal crises, mandated court appearances, parental responsibilities, and the like. As long as such absences are not excessive, it is hoped that the instructor will provide and document reasonable accommodation. The instructor may require the student to submit a written explanation of the absence, but written excuses from health care personnel should not be required since these requests frequently put the health care personnel in untenable positions. A student who is dissatisfied with the instructor’s accommodation may follow the Academic Complaint Procedure, Rule 104. It is recommended that the instructor explain the procedures for excused absences early in the semester, preferably in a written syllabus distributed to all students in each class. Once announced, these procedures should be scrupulously followed unless extraordinary circumstances require an exception. Students who attempt to gain advantage through abuse of this policy (e.g., by providing an instructor with false information) may be referred to the Office of Student Affairs for disciplinary action.

EXAMINATIONS

74. FINAL EXAMINATIONS WEEK. The final examination week will begin immediately on Monday following the fifteenth week of the semester and last through the following Friday. Special examinations will be scheduled for the Saturday following the Friday of final examination week.

75. FINAL EXAMINATION SCHEDULE. The final examination schedule will be determined before the start of each semester and published in the semester time schedule 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., 8:45 to 9:45 p.m. and 8:30 to 9:30 p.m., Monday through Friday, with the exception of Monday morning and Friday evening. 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. Proposed examination dates must be submitted to the Registrar's Office not later than the first week of each semester so that a schedule for the entire semester may be circulated and posted. 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.

(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 advisers.

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 study or ensemble.

82. ACCOMMODATIONS OF RELIGIOUS OBSERVANCES IN THE ADMINISTRATION OF EXAMINATIONS. Washington State University is committed to providing people of diverse religious backgrounds access to education. In addition, law requires reasonable accommodation of religious beliefs and practices. Because religious observances do not always conform to state and university holidays, accommodation of these religious observances may be necessary in the administration of examinations. It is the policy of the university to provide reasonable accommodation consistent with the fair, efficient and secure administration of its programs. When tests or examinations fall on days objectionable to a student because of religious beliefs, the student should contact the instructor as soon as possible. The instructor may require the student to submit a concise, written statement of the reasons for the request. If the request appears to be made in good faith, the instructor should make alternate arrangements for administration of the examination or test, considering the integrity of the testing process, and fairness to all the students. If the instructor believes the request not to be in good faith, or if the instructor and the student are unable to agree on arrangements, the student or the instructor should seek the assistance of the department chair, cognizant dean, or the Vice Provost for Academic Affairs, in that order. The student may also contact the University Ombudsman. Students should understand that fairness in the examination process is an important consideration in the educational process and that they have a duty to cooperate in making alternate arrangements.

83. ACCOMMODATION OF DISABILITIES IN THE ADMINISTRATION OF EXAMINATIONS. Washington State University is committed to providing access to education for all of its students. In addition, federal law states that academic requirements must be modified on a case-by-case basis to afford qualified students with handicaps an equal educational opportunity. The nature of certain disabilities may necessitate accommodation of these disabilities in the administration of examinations. 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 4:00 p.m. on the second working day after the close of finals week. (Final grades for Summer Session will be submitted to the Registrar’s Office by 4:00 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.)

GRADABLE 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 Fall and Spring Time Schedules.) A, S, or F grades only are used to report physical education activity grades. Courses approved for S, F grading may also be graded S at midsemester indicating satisfactory progress.

90g. P. (Passing.) A satisfactory grade for a course taken under the pass, fail Grading Option. Instructors will turn in regular letter grades for all students enrolled in courses under the pass, fail option but grades will appear on the student’s permanent record as P (Passing) or F (Failure).

90h. I. (Incomplete.) The term is used to indicate that a grade has been deferred. It is for students who for reasons beyond their control are unable to complete their work on time. It is strongly recommended that students who are granted an Incomplete limit their total number of credits to 18 credits (including credits for the Incomplete course and any new courses) during the semester when they are finishing an Incomplete. Undergraduates or graduates who receive an I grade in an undergraduate course (100-499) have up to the end of the ensuing year to complete the course, unless a shorter interval is specified by the instructor. If the incomplete is not made up during the specified time or the student repeats the course, the I is changed to an F. (See Rule 34.) Faculty are required to submit an Incomplete Grade Report (IGR) to the departmental office with every I given. The IGR must specify conditions and requirements for completing the incomplete, as well as any time limitations less than one year.

90i. W. This is the term to be used if the student has filed, in the Registrar’s Office, official notice of a withdrawal from the course prior to the end of the 9th week, or withdrew passing in accordance with Rule 69, or withdrew from the university in accordance with Rule 70.

90j. X. Denotes continuing progress toward completion of special problems, research, thesis, doctoral dissertation (i.e., 499, 600, 700, 702, 800), or flexible enrollment courses; X grades are converted to S or to a letter grade upon satisfactory completion. An X grade may also be used when no final grade is reported due to instructor’s illness or absence from town.

92. GRADE RECORDS. Class grade records (the records from which final grades for a given class are determined) are university records which must be maintained for five years after the end of the term. Department chairs or directors are responsible for identifying appropriate storage location, which may include the instructor’s campus office. Both the chair or director or their designees and the instructor shall have ready access to these records.

93. RETENTION OF FINAL EXAMINATIONS, FINAL PROJECTS, AND FINAL PAPERS. Final examinations, final projects, and final papers are university records which must be maintained for one year after the end of the term, unless they are returned directly to the student. Department chairs or directors are responsible for identifying appropriate storage location, which may include the instructor’s campus office. Both the chair or the director or their designees and the instructor shall have ready access to these final examinations, final projects, and final papers.

98. CORRECTION OF GRADE ERRORS. An instructor may not change a grade after it has been filed with the Registrar, except in the case of clerical error, which the instructor may correct by so certifying to the Registrar. Such change must be approved (signature required) by the chairperson of the department in which the course was offered. Grade corrections must be processed within one year of the end of the term for which the original grade was given. In extenuating circumstances, exceptions to the one-year limit for correction of grade errors may be considered by petition to the Registrar’s Office.

99. GRADUATE STUDENT GRADES. On a program leading to an advanced degree, graduate students must attain a minimum grade point average of 3.00 on their graduate programs and a minimum grade point average of 3.00 in all 300-400-level and graduate courses. No grade below C is accepted in any course for graduate credit.

100. THE GRADE POINT SYSTEM

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<td>A-</td>
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</table>

P credit given—grade points not calculated.
S credit given—grade points not calculated.
I provides no credit or grade points.
W provides no credit or grade points.
X provides no credit or grade points.

102. STUDENT’S SCHOLASTIC AVERAGE. A student’s scholastic average is determined by adding the grade points earned in all WSU course work and dividing
by the total number of hours in which the student has been enrolled at WSU. I, W, S, P, and X grades are disregarded.

103. GROUP AVERAGES. Group averages, honor rolls, eligibility lists for honorees, and similar lists are calculated on the basis of grades received in the Registrar's Office by 4:00 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.

GRADUATION

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 curriculum requirements described in the bulletin and catalog supplements are binding, and no advisor may waive or alter them. The student has the ultimate responsibility for meeting university, college, and departmental graduation requirements.

109. PETITIONS FOR UNDERGRADUATE GRADUATION REQUIREMENTS. Students may petition for a change in graduation requirements or by obtaining the signatures of their department chairperson or director and dean on the appropriate form available in the undergraduate degree office of the Registrar's Office.

114. REQUIREMENTS FOR UNDERGRADUATE DEGREES
(a) The four-year degree (BA, B5, B FA, B Lib A, B Mus):
1. Meet the General Education Requirements for Graduation.
2. Earn twice as many grade points as the number of hours enrolled in graded course work, in this or any institution for which a grade has been received.
3. Earn twice as many grade points in the major subject as the number of hours enrolled graded course work in that major subject at Washington State University.
4. Complete any of the four-year programs.
5. Complete the senior year under the direction of the college in which the degree is to be granted. If any portion of the final year's work is to be completed at another institution, advance approval must be obtained, in writing, from both the department chairperson and the dean of the college.
6. Earn a minimum of 120 semester hours of credit, no more than 8 of which may be PEACT (Physical Education Activity) courses. (At least 30 must be WSU hours; see Rule 6.)
7. Earn a minimum of 40 semester hours of credit in 300-400-level courses exclusive of credit earned at two-year or community colleges; 500-level courses will count toward the 300-400-level requirement, but an undergraduate may not be required to enroll in or complete a 500-level course as a requirement for the baccalaureate degree.
(b) The five-year degree (B Arch, BS (St M, B Phar):
1. Meet requirements 1, 2, 3, and 7 listed under (a) above.
2. Complete any of the five-year programs.
3. Complete the fifth year under the direction of the college in which the degree is to be granted. If any portion of the final year's work is to be completed at another institution, advance approval must be obtained in writing, from both the department chairperson and the dean of the college.
4. Earn a minimum of 150 semester hours of credit, no more than 10 of which may be from PEACT (Physical Education Activity) courses. (See Rule 6.)

115. REQUIREMENTS FOR THE DOCTOR OF VETERINARY MEDICINE DEGREE (DVM)
(a) Complete the four-year professional program.
(b) Earn a baccalaureate degree from an accredited institution.
(c) Earn twice as many grade points as the number of semester hours required in the professional program.

116. REQUIREMENTS FOR MASTER'S DEGREES
(a) Spend not less than the equivalent of two semesters in residence (except for external programs approved by the Graduate Studies Committee).
(b) Earn not less than 30 semester hours of credit with a minimum of 21 semester hours of course work for a thesis degree program or 26 semester hours of course work for a nonthesis degree program.
(c) Earn a minimum grade point average of 3.00 on a graduate program in all upper-division and graduate course work completed for the master's degree.
(d) Earn a minimum grade point average of 3.00 for all course work taken as a graduate student.
(e) Successfully complete graduate examinations.

117. REQUIREMENTS FOR DOCTOR'S DEGREES
(a) Spend not less than six semesters beyond the baccalaureate degree at least four of which must be at Washington State University.
(b) Spend not less than a minimum of two consecutive semesters in residence at Washington State University.
(c) Earn not less than 72 semester credit hours beyond the baccalaureate degree to include a minimum of 34 semester hours (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 under-graduate degree requires a minimum of 120 semester hours. For each additional bachelor's degree, the student must complete an additional 30 semester hours and satisfy all requirements of the second degree program.

121. SUMMER SESSION CREDITS. Credit earned during summer sessions may be applied toward the fulfillment of requirements for baccalaureate and advanced degrees in the same manner and subject to the same rules as credit earned during semesters of regular academic years.

123. LIMIT ON FLEXIBLE ENROLLMENT CREDIT. A student working for a degree at Washington State University shall be limited on flexible enrollment course credit to not more than 25% of the total hours required for any undergraduate degree.

125. DATE OF GRADUATION. Students will be recommended for their degrees at the end of the semester or term in which they complete their requirements. Diplomas will be dated the Saturday following the last day of final examination week for the fall semester, the day of commencement for the spring semester, and the Saturday following the last day of instruction for summer session.

HONORS

Honor rolls and lists are calculated on the basis of grades received by 4:00 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 of course work for a nonthesis degree program.
(b) By achieving a cumulative grade point average of 3.50 based on at least 15 cumulative hours of graded work at Washington State University.
137. RECOGNITION FOR SELECTED BACCALAUREATE DEGREE CANDIDATES. Candidates for baccalaureate degrees who have completed at least 30 hours of graded work (grades in which grade points are awarded) at Washington State University will graduate *summa cum laude* if the cumulative grade point average for work completed at Washington State University is 3.90 or better, will graduate *magna cum laude* if the minimum cumulative grade point average is 3.70 but less than 3.90, and will graduate *cum laude* if the minimum cumulative grade point average is 3.50 but less than 3.70.

The appropriate Latin phrase will be printed on the diploma and on the final transcript. Qualified students electing to participate in the Honors College who complete its requirements satisfactorily, regardless of whether they qualify to graduate *summa cum laude, magna cum laude,* or *cum laude,* will receive a certificate of completion and a printed notation on the final transcript.

Computation of graduation honors will be done prior to the end of the final semester to allow for publication of the appropriate honors in advance of graduation. However, following the student's final semester, the Registrar will recompute the student's g.p.a. 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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