Washington State University General Catalog 2002-03
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**Washington State University Board of Regents**

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

**General Information** iv-41

**General Education Requirements and Courses** 43-47

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

**Departments, Requirements, and Courses** 51-xxx

The information in this section includes the following:

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

- A complete listing of courses needed for each degree. The requirements are shown in a semester-by-semester schedule of studies to help you in planning your course of studies. **You will find majors organized by department.** For instance, the Marketing degree program is found under the Departments of Business. Do note that departmental requirements are set at the time you certify in your major (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, while 300- and 400-level courses are most appropriate for third- and fourth-year students. Graduate courses are numbered from 500 through 800, and professional courses are designated with the letter P following the course number.

**Understanding the Schedule of Studies**

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

**Freshman Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>(1) First Semester</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<td>(2) Degree Program Course</td>
<td>3</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>4</td>
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<tr>
<td>(3) Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

Many departments allow you to take the required courses in a different order. Your advisor can tell you how much flexibility you have in rearranging the courses that are required for your degree.

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

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

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

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

- **Course Title**

  - **Biol 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.

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

- **The number in parentheses is a previous number for this course.**

  - **V M 590P (414) Veterinary Clinical Nutrition** V 1-3 Same as A S 414.

  - 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 online 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 websites 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 advisor, you can use this report to keep track of your progress toward attaining a degree. The report does not replace the importance of academic advising, rather it promotes a more sophisticated approach to academic and career counseling.

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

You may request Degree Audit reports over the web by following these links from the WSU homepage: www.wsu.edu; 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 email address.

"What If?" Reports: You may also use the DARS system to check how your courses would fit into other degree programs. For instance, if you were majoring in business, you could explore how your coursework would fulfill the requirements for a B.A. in English with a Pre-Law option simply by choosing that degree program under the "What If" button on the degree audit website. When you have applied for graduation, the Degree Audit serves as the final check for degree clearance.

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

FOR PROSPECTIVE TRANSFER STUDENTS

Cougar TRACS

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 to:

• find out how your credits will transfer to meet General Education Requirements and WSU departmental requirements;
• explore different academic major requirements using "what if" scenarios;
• determine how to plan your schedule at your current college or university to fulfill WSU requirements.

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

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 1-800-978-7252
email: transfer@mail.salc.wsu.edu
web: http://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 online tool that allows you to determine how a specific course will transfer to WSU, based on college or university courses that are in our database. You may access transfer course equivalencies in three different ways, either by the transfer course, a set of transfer courses, or by a single WSU course. It is provided for planning purposes only. Please note that the final authority concerning all transfer course equivalencies rests with the WSU Office of Admissions, in consultation with individual academic units.

Exploring Undergraduate Majors

Go to: www.it.wsu.edu/AIS/ADM/cgi-bin/ag_majors.cgi or www.wsu.edu/AcademicPrograms.html

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 website. The website also provides links to the colleges, the branch campuses, and to information about graduate programs.

WSU’s Online Catalog

Go to: http://catalog.wsu.edu

WSU’s online 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 Postsecondary 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 Postsecondary Enrollment Fall Semester 2000. Meets both the [D] requirement and another GER course designation.
- choose one 3 cr

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

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

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

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

**Sciences** [B][P][Q]
10 semester credits including 1 hour of lab (L). At least 3 credits must be Biological Sciences [B] and 3 credits must be Physical Sciences [P].
- choose one lab science (L) 4 cr
- choose one 3 or 4 cr
- choose one 3 or 4 cr

### Upper-Division Requirements

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

**Tier III Course (GER)**
Effective with Initial Postsecondary Enrollment Fall Semester 1995.
- choose one 3 cr

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

### COLLEGE OF SCIENCES

### COLLEGE OF LIBERAL ARTS

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

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

**Additional 6 semester credits of [H,G,I,S,K]**
For a total of 18 semester credits in [H][G][I][S][K] courses.
- choose one 3 cr
- choose one 3 cr

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

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

(“Initial Postsecondary Enrollment” is established by matriculation through a formal admission process, after High School graduation, to an accredited institution of higher education.

An approved transferable AA degree from Washington, Oregon, Idaho, California, Arizona, or Hawaii completes all lower division GER requirements except for the additional requirements in the College of Liberal Arts and the College of Sciences.

A complete description of the General Education program can be found in the WSU Catalog.

(HG) 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 in 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 43-51.

General Education Program Requirements

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

Please note that students in the College of Sciences or the College of Liberal Arts must fulfill the additional listed on page 42.

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>
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<tbody>
<tr>
<td>World Civilizations [A] GenEd 110 and 111</td>
<td>Communication Proficiency [W], [C]</td>
<td>Capstone Course</td>
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<tr>
<td>Written Communication [W]</td>
<td>Arts and Humanities# [H], [G]</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics Proficiency [N]</td>
<td>Social Sciences# [S], [K]</td>
<td></td>
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<tr>
<td>Sciences [Q]</td>
<td>Arts and Humanities/Social Sciences# [H], [G], [S], [K]</td>
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<tr>
<td></td>
<td>Intercultural # [I], [G], [K]</td>
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<td>Sciences* [B], [P]</td>
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# 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 WSUs 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). The Writing Portfolio must be completed before a student enrolls in a course which satisfies the Writing in the Major requirement (see below). Visit http://juniorportfolio.wsu.edu.

3. Writing in the Major [M]

Two courses identified as writing in the major [M] must be included in course work taken to meet departmental requirements. Consult the requirements in the department in which you intend to major. Students 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.
### Academic Calendar

#### First Semester (Fall)

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<tr>
<td>Labor Day holiday</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>Midsemester grades due, 8:00 a.m.</td>
<td>Oct 16</td>
<td>Oct 15</td>
<td>Oct 13</td>
<td>Oct 12</td>
<td>Oct 11</td>
<td>Oct 10</td>
</tr>
<tr>
<td>Veterans Day holiday</td>
<td>Nov 11</td>
<td>Nov 11</td>
<td>Nov 11</td>
<td>Nov 11</td>
<td>Nov 10</td>
<td>Nov 12</td>
</tr>
<tr>
<td>Commencement</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 Exams, Monday - Friday</td>
<td>Dec 16-20</td>
<td>Dec 15-19</td>
<td>Dec 13-17</td>
<td>Dec 12-16</td>
<td>Dec 11-15</td>
<td>Dec 10-14</td>
</tr>
<tr>
<td>Final grades due, 4:00 p.m.</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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#### Second Semester (Spring)

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<tbody>
<tr>
<td>Classes begin</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 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 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 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 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 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 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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#### Summer Session

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<tbody>
<tr>
<td>Early Session begins</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>
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<tr>
<td>Eight-Week Session begins</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>
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<tr>
<td>Late Six-Week Session begins</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>Independence Day holiday</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>
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<tr>
<td>Summer Session ends, Friday</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>Final grades due, 4:00 p.m.</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>
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Please note: Faculty advising and preregistration for continuing students will be held prior to the end of the previous term.

### Specialized Accreditations

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

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

Commission on College of the Northwest Association of Schools and Colleges
Accrediting Commission on Education for Health Services Administration
American Animal Hospital Association
American Assembly of Collegiate Schools of Business: The International Association for Management Education
American Association for Accreditation of Laboratory Animal Care
American Association of Colleges for Teacher Education
American Association of Veterinary Laboratory Diagnosticians
American Chemical Society
American Council for Construction Education
American Council on Pharmaceutical Education
American Dietetic Association
American Psychological Association
American Society of Landscape Architects
American Speech-Language-Hearing Association
American Veterinary Medical Association
Commission on Collegiate Nursing Education (pre-approval)
Computing Accreditation Commission of the Accreditation Board for Engineering and Technology
Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology
Foundation for Interior Design Education Research
National 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
Board of Regents, 2001-2002

Governor Gary Locke
State of Washington
Advisory Member Ex Officio

Robert D. Fukai, President
Olympia

Joe King, Vice President
Ellensburg

Kenneth Alhadeff, Past President
Seattle

Phyllis J. Campbell
Issaquah

Elizabeth Cowles
Spokane

Darren Eastman (Student)
Renton

Peter J. Goldmark
Okanogan

Steven Hill
Tacoma

William Marler
Bainbridge Island

V. Rafael Stone
Seattle

V. Lane Rawlins, Secretary

Gregory P. Royer, Treasurer

Officers of the University

EXECUTIVE OFFICERS
V. Lane Rawlins
President

Robert Bates
Provost and Academic Vice President

Mary Doyle
Vice President for Information Technology

Charlene Jaeger
Vice President for Student Affairs

Gregory P. Royer
Vice President for Business Affairs

Sally P. Savage
Vice President for University Advancement

Richard Frisch
Vice President for University Development, President WSU Foundation

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

ACADEMIC DEANS AND DIRECTORS
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

Michael D. Grisworld
College of Sciences

Larry G. James
WSU Tri-Cities

Glenn L. Johnson
College of Business and Economics

Judy N. Mitchell
College of Education

Virginia Steel
Libraries

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 quality education in a caring community. The university's motto — “World Class. Face to Face.” — reflects that commitment.

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.

Founded in Pullman in 1890, WSU is the state’s land-grant research university. It has campuses in Spokane, the Tri-Cities (Richland, Pasco and Kennewick) and Vancouver; regional Learning Centers and the Extended Degree Programs also offer access to WSU degrees statewide.

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 third and fourth professional year in either Spokane or Yakima.

There are more than 300 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 1,230 provides instruction that opens students' minds to the most recent knowledge and discoveries. The opportunity for students to know and work closely with their teachers is a Washington State University tradition.

WSU President V. Lane Rawlins says the university is known for its world class faculty and researchers. “We are proud of them and, even more so, in their commitment to work with our students. The success of Washington State University graduates is built upon the practical experience and guidance our students receive while they are on campus.”

More than 18,000 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 Extended Degree Programs. Statewide, WSU has more than 41,000 students.

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 eight 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.

Located on College Hill in Pullman, WSU’s 620-acre campus features modern classrooms and libraries, laboratories, museums, student residences, recreational and athletic facilities.

The 94,000-plus-square-foot new Smith Center for Undergraduate Education includes classrooms with Internet access at every seat, a cyber café, computer labs and much more.

Also on campus is a one-of-a-kind alumni center, student union, 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. With 160,000 square feet, the center includes lap and leisure pools, a spa, two gyms with seven courts, four racquetball/squash courts, an elevated track, multi-purpose rooms for activities, and, 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 Acc
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, M 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
Construction 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, MEngMgt
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

Academic Degrees

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 Cropscaping Systems, BS
Interior Design, BA, MA
Kinesiology, BS, MS
Landscape Architecture, BLA, MS
Liberal Arts, B Lib A
Manufacturing Engineering, BS
Materials Science, MS
Materials Science and Engineering, BS, MS
Mathematics, BS, MS, PhD
Mechanical Engineering, BS, MS, PhD
Microbiology, BS, MS, PhD
Music, BA, B Mus, MA
Natural Resource Management, BS
Natural Resource Sciences, BS, MS
Natural Resources, MS
Neuroscience, BS, MS, PhD
Nursing, BS, M Nurs
Nutrition, PhD
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 6 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 the online catalog, Griffin, with Eastern Washington University. The WSU Libraries, with the Libraries at CWU, EWU, WWU, UW, and Evergreen College, offers 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 contain rich collections of primary resource materials including books, manuscripts, and photographs, to support study and research in a number of fields, including Pacific Northwest history, modern British literature, regional publishing, veterinary history, agricultural history, wildlife and outdoor recreation, WSU history, and other subjects. Media Materials & 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 campuses, and at the Intercollegiate College of Nursing (Spokane) and the WSU Energy Library (Olympia).

Library services for students enrolled in the Distance Degree Program are available via toll-free telephone and email through the Extended 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 home-page: 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 them to advantage. Emphasis is also placed on a program of advanced work for teachers and school administrators.

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

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

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

Washington State University Foundation

The mission of the WSU Foundation is to advance the teaching, research, and public service endeavors of Washington State University by generating private contributions to supplement the institution’s state and federal revenues for capital, operating, and student assistance funds. Established in 1979 under State of Washington law, the Foundation has raised more than $610 million for the university’s highest priorities. Overseen by a board of trustees and staffed by a team of professional development officers, the Foundation administers all gifts in a business-like manner in accordance with the donor’s wishes. One hundred percent of each gift goes to the area designated by the donor. For more information, go to the Foundation’s web site at http://wsufoundation.wsu.edu or email foundation@wsu.edu. Mail inquiries may be addressed to the President, WSU Foundation, Pullman, WA 99164-1042.
Student Life

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/Intrafraternity 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 Computer 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 g.p.a. 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, web1.french.wsu.edu/golden_key/index.

Mortar Board. Mortar Board is a national honor society of college seniors recognized for their scholarship, outstanding and continuing leadership, and dedicated service to the college or university community. It is a member’s willingness to continue to serve that differentiates Mortar Board from an honorary organization. Acceptance of membership indicates the person’s agreement to fulfill the responsibility for active participation in the chapter. Members must have at least a 3.0 cumulative grade point average to be considered for membership. Each spring, the chapter recognizes freshmen who earn at least a 3.5 g.p.a. 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 g.p.a. 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 5 percent of the junior class each year. Graduate students are also eligible for membership.

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

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 and the Office of Student Programs coordinate and guide existing student organizations and assists 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. For more information, visit our website at http://cub.wsu.edu/osp.

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 website, www.dailyevergreen.com, expands upon materials carried in both publications as well as carrying a variety of original materials. The student staff updates it daily during the academic year. The Chindex is the university yearbook issued each August to over 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 two one-credit courses (Univ 100 and Univ 300) to help students enhance their career decision-making skills and better understand how to connect their academic experiences with the world of work. An interactive computer-assisted program (called SIG+) is also available to help students with self-assessment and information about career options. The Career Resource Center maintains information on WSU majors, occupations, job search and graduate school preparation materials, employer literature and directories, and Internet resources. In addition, Career Services sponsors two major career fairs and associated events each year.

Through on-campus interviews, students can interview for internship and permanent employment with employers who recruit at WSU. Students registered with Career Services may also take advantage of the resume referral service to access employers who are interested in WSU students but not planning to come to campus. Career Services also maintains extensive current job and internship listings in partnership with Monster TRAK 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, 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. One hundred and seventy-one children (ages six weeks to 12 years) are housed on Olympia Avenue. 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, structured to unstructured. Children are grouped developmentally by age. Snacks and lunches are provided.

The center is also available to students for observation and participation for classes. Work-study jobs are also 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 couple 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 programs. Accommodations may include modified test taking, textbooks on tape, sign language interpreters, note takers in classrooms, and accessible transportation. Services available include all appropriate accommodations that provide equal access, alternative testing environments, the use of adaptive equipment, and referrals.

The center provides disability awareness training for WSU faculty, staff, and students. The center works cooperatively with all university programs to meet the

Educational Telecommunications and Technology
Educational Telecommunications and Technology (ETT), www.ett.wsu.edu, is 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 two or 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 (radio only) British Columbia.

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.nwpr.org. Northwest Public Radio has studios in Pullman (main), Bellingham, Moscow and Richland.

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

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

WHETS provides about 13,000 hours per year of usage, 90% of it for classes, and the remainder for meetings involving about 15,000 participants. There are nearly 8,000 enrollments and about 800 average annual FTE students involved in 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 Internet2 for high quality video. It is also providing a substantial level of video streaming services to the WSU community (10 WHETS courses will be video streamed in Fall 2000 and Extended Degree Program distance learning courses will be streamed as well). 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 Program and Center educates, supports, and advocates for GLBT faculty, staff, and students and their allies, challenging intolerance and discrimination and working to create equal access, opportunity, and inclusion at every level of the institution. The GLBA Program offers educational programming and presentations for classes, organizations, and living groups. The program actively supports research and curricular developments that integrate GLBT-related scholarship in the University. The Center’s library includes books, magazines, videos, and newspapers. The program provides a broad spectrum of referrals and information for the campus community, and a lounge that serves as a gathering space, meeting room, and study area.

For more information about the GLBA Program, contact the program office, Compton Union Building, Room B19A, (509) 335-6388, www.cub.wsu.edu/glbap.
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 arenas of: creating quality learning, living and working environments; conflict management; intercultural relations and change. HRES program staff also provides educational opportunities by designing and implementing seminars, workshops, and training tailored to meet your needs around team building, organizational development, conflict assessment, management, cultural diversity, and communication. The office is located in French Administration Building, Room 134 and is open year round. Further information about the program may be obtained by calling (509) 335-8888 or on the internet at www.wsu.edu/~hres.

The Center for Human Rights

The Center for Human Rights (CHR) seeks to integrate principles of equal employment opportunity, affirmative action, and fair and equitable treatment of all Washington State University (WSU) constituents into all academic and employment activities and practices throughout WSU. To meet that objective, CHR (1) provides leadership by enhancing the human rights education of all WSU students, faculty and staff, and by developing innovative and interdisciplinary programs, training, and activities that will improve the effectiveness of human rights in the entire University community; (2) seeks to ensure that all WSU employment and recruitment practices comply with state and federal equal employment opportunity and affirmative action mandates; (3) assesses, develops and implements WSU’s affirmative action plan in compliance with state and federal regulations; (4) reviews and investigates all complaints of discrimination and sexual harassment, and advises faculty, staff and students on appropriate management of such issues; (5) aims to enhance WSU’s academic and organizational effectiveness through conflict management, cultural diversity, and communication. The center 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 225, Pullman, WA 99164-1022, (509) 335-8288, FAX (509) 335-5483, rights@mail.wsu.edu, or www.chr.wsu.edu.

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, including 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. Shorter-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, http://libarts.wsu.edu/anthro.

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 ranging from fine arts and fine craft to architecture and design. Exhibitions originated by the museum staff have toured the nation. The museum also offers a wide variety of outreach programs including docent tours, 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 September through July. The gallery is closed for university holidays and in order to install new exhibitions. For more information on hours and exhibitions, call (509) 335-6607. 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 website, www.wsu.edu/artmuse.

Conner Museum

The Charles R. Conner Museum, located on the first floor of Science Hall, exhibits its 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 2000 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 diossal 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 arrangements.

**The Historic Textiles and Costume Collection**

The Historic Textiles and Costume Collection contains approximately 2000 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 and is currently in storage pending new facilities.

**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 interpretive presentations for groups can be arranged in advance by calling (509) 335-3394. The location is in the Food Science and Human Nutrition Building, Room 157. Further information may be obtained at [http://entomology.wsu.edu](http://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. Heald, 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 website at: [http://mycology.wsu.edu](http://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 website, 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 emphasize; 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 website at: [http://mycology.wsu.edu](http://mycology.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 website at [http://musicandtheatrecalendar.html](http://musicandtheatrecalendar.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: six major productions in Daggy Hall theatres as well as 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 are open to all members of the university and community. Participating WSU students are required to be enrolled in Applied Theatre Studies. For more details, contact our Web site: libarts.wsu.edu/musicandtheatre.

**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) 335-1698.

**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 regular university appeal and grievance procedures. Students, faculty, and staff may contact the office for confidential information and assistance at (509) 335-1195 from 8:00-5:00, Wilson Hall, Room 2. Web address: [www.wsu.edu/~ombuds](http://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 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) 978-7752. 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 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 Advisor 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. The staff is available daily in Lighty Student Services Building, Room 260, (509) 335-6000. Visit our web site, salc.wsu.edu.

Student Computing Services
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 calling 509-335-HELP.

HelpDesk support is also available in the other SCS Technology Labs located in Gannon Goldsworthy 58, 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, yearlong, 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 provide primary health care to students, including treatment for acute and chronic illness, injuries, accidents, women’s health, contraception, STDs, food preoccupations/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 sees 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 same building with 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 or 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 memberships at the SRC during operating hours. For further information, please call (509) 335-5732, or email via our website www.studentaffairs.wsu.edu/SSS for further information.

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 http://sac.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 Code (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 their 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 8:00 a.m. to 5:00 p.m., Monday through Friday. Visit our web site at www.wsu.edu/~wrc.
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

Extended University Services (EUS) is a multi-faceted organization that provides leadership for academic outreach at Washington State University. EUS collaborates with colleges and administrative units to develop and deliver education programs, academic program support for students and faculty, conferencing services, and professional training to people throughout Washington and beyond. Visit our web site at www.eus.wsu.edu.

Distance Degree Programs (DDP): DDP supports WSU colleges and departments in delivering bachelor's and master's degrees, 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 enrollments 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 noncredit 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 caps.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 Advisor.

International Programs

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

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

International Education and Student Services serves both domestic and international students and encompasses both Education Abroad and International Students and Scholars. Faculty and staff of Education Abroad provide undergraduate and graduate students with opportunities for academically relevant study abroad and exchange programs. 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.

International 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 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 nonnative 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, http://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—335-7695, 305 Center for Undergraduate Education.

**The Freshman Seminar** – Students who enroll in the two-credit Freshman Seminar through GenEd 104 participate in activities and projects that introduce them to researching, writing, thinking, and using technologies at the college level as they make the transition to the university. The seminar students are also enrolled together in a general education requirement course forming additional support within a learning community. Contact: The Student Advising and Learning Center (SALC)—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—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—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—335-7695, 305 Center for Undergraduate Education.

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—335-7695, 305 Center for Undergraduate Education.

**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. Students should also contact academic departments for possible tutoring assistance. Contact: The Student Advising and Learning Center (SALC)—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: Community Service Learning Center – 335-7708 – http://cub.wsu.edu/cscl.

**Student Support Services Program (SSSP)** – SSSP is a federal TRIO grant program that serves first-generation, low-income, and disabled students. Services include: Academic/financial advising, workshops, counseling, tutoring, mentoring, skills training, scholarship opportunities, cultural enrichment activities, and referrals. Interested students should contact SSSP in the Student Advising and Learning Center (SALC), (509) 335-7324, 260 Lighty, or visit our website, www.studentaffairs.wsu.edu/SSS.
Laboratory for Atmospheric Research

The Laboratory for Atmospheric Research provides a recognized center of atmospheric research facilities 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 various 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 projects 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.cc.wsu.edu/LAR/.

Laboratory for Biotechnology and Bioanalysis

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

Electron Microscopy Center

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

The EMC maintains two TEMs, a STEM, a SEM, and numerous 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 inorganic chemistry and applications of many fields in material and environmental sciences. The laboratory comprises an automated Cameca electron microprobe for quantitative elemental micro-analysis and element mapping, a Siemens X-ray powder diffractometer for phase identification; an automated Rigaku X-ray fluorescence spectrometer and HP inductively coupled plasma mass spectrometer (ICP-MS) for major, trace and rare earth elemental analysis; and a Finnigan MAT gas source mass spectrometer for oxygen, carbon and hydrogen isotope ratio determinations. Recent additions include a high resolution Thermo-Finnigan ICP-MS for ultra low trace element analysis, a multicollector Thermo-Finnigan ICP-MS for radiogenic and stable isotope ratios and a clean room for sample preparation. Most of our services and equipment are available to other departments and other institutions for a reasonable fee. For more information visit our web site at www.wsu.edu:8080/~geology/pages/services/geolab.htm, or call (509) 335-1626.

Information Technology

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 servers, desktops and other computing devices.

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 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 http://impact.wsu.edu.
**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.

Further information about SESRC, contact us by calling (509) 335-1511, sending an email to sesrc@wsu.edu or by visiting our web site at survey.sesrc.wsu.edu.

**Nuclear Radiation Center**

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.

**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 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. To date, nearly 450 projects have been funded through the center and completed with technical reports and journal articles distributed to the professional community and appropriate agencies. Over 1000 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/wsrc.

**WSU Center for NMR Spectroscopy**

The WSU Center for NMR Spectroscopy is a central University facility, currently with four NMR spectrometers: a Varian Mercury 300 routine liquids NMR spectrometer; a Bruker Avance DRX-400 solid-state NMR spectrometer, a Varian Inova gradient liquids NMR spectrometer, and a Bruker Avance DRX-600 liquid-state and solid-state NMR spectrometer. The Center is managed by a PhD-level Facility Manager, whose specialist knowledge is in liquids NMR, and an Assistant Manager, whose specialist knowledge is in solids NMR. Electronics support is provided by the College of Sciences Technical Services. Also the NMR Center houses an IBM SP2 16-processor parallel computer, with 2.4 Gb RAM and 40 Gb disk. This machine has parallel and serial versions of CHARMM, XPLOR and the Biosym/MSI suite of programs, and is used solely by the structural biology groups at WSU. The Center also has several Silicon Graphics, Sun, and Linux workstations for off-line data analysis.
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.

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

Retention of Students

The grade point average for freshmen entering from high school in the fall semester 2000 was 3.43. Of the 2,473 freshmen who entered in the fall semester 2000, 2,327 were enrolled in the spring of 2001, and 2,050 continued their enrollment in the fall semester 2001.

Freshman Admission Requirements

To be eligible for admission to Washington State University, an applicant must be a high school graduate or its equivalent, or have completed a more advanced credential from an accredited college or university - e.g., an Associate of Arts or Associate of Science degree.

Freshman applicants will be considered for admission on the basis of 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:** Two years (including at least one year of history).
- **Foreign Language:** Three years (including at least one year of history). 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.

Interested students should apply by March 1 for priority consideration, as space is limited. 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.

Students who have been offered admission to the university may be invited to join WSU’s Honors College if they have shown unusual scholastic ability and intellectual achievement in high school. Transfer and international students are admitted to the Honors Program on an individual basis after eligibility has been determined. Questions should be directed to the University Honors College, P.O. Box 642012, Pullman, WA 99164-2012, or call (509) 335-4505.

Transfer Admission Requirements

To be eligible for admission to Washington State University, an applicant must be a high school graduate or its equivalent, or have completed a more advanced credential from an accredited college or university - e.g., an Associate of Arts or Associate of Science degree.

Transfer applicants with fewer than 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 (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 (40 quarter) hours of transferable 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.

Transfer applicants who apply by December 1 will be offered admission on a space available basis. For spring semester, qualified students who apply by March 1 will be offered admission on a space available basis.

Eligible transfer students who hold the approved Direct Transfer Associate Degree from a Washington or Oregon community college who apply before March 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 g.p.a. 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.

Completion of lower-division General Education Requirements will be granted to students who have completed all of the lower-division General Education Requirements at another regionally accredited Washington baccalaureate institution, provided the sending institution so certifies.
Associate Degree Transfer

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

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

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

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

Transfer students are encouraged to contact the Office of Admissions, (509) 335-5586, with any questions regarding the transfer of credit or access transfer articulation information at www.wsu.edu/advisement/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 considered for admission on the basis of alternative criteria. Students are encouraged to contact the Office of Admissions for details.

Early Admission

Students wishing to gain early admission Washington Students wishing to gain early admission (prior to graduation from high school) to Washington State University need to submit the following: 1. A written statement giving the reason(s) early admission is being requested; 2. An official transcript showing all high school work completed to date. A minimum grade point average of 3.5 is required. If the student has taken the G.E.D. prior to the expected date of high school graduation, a minimum score of 62 is required. Official high school transcripts showing completed work must also be submitted. Applicants must meet the minimum requirements for High School Core as required by Washington State University; 3. Official results from the Scholastic Achievement Test (SAT), or the American College Test (ACT), or the Washington Pre-College Test (WPCT). If using WPCT scores, students must have taken the WPCT prior to June 1989 and score 120 or higher. A minimum score of 1100 on the SAT, or a composite score of 28 or higher on the ACT is required; 4. At least two letters of recommendation, one from the principal or guidance counselor, and one from a teacher who knows the student’s academic capabilities. These letters should give specific reasons why the student would benefit more from attending WSU, rather than completing high school; 5. A letter of recommendation from the student's parent or guardian supporting his or her application for early admission; and 6. Completion of WSU application and payment of application fee.

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

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

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

Academic programs offered and campus addresses are listed under “Spokane, Tri-Cities, and Vancouver Campuses” this catalog. Applications can be obtained from the each campus or the Pullman Office of Admissions. 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. 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 Application prior to enrollment. Preference will be given to applications received by May 1 for fall semester and December 1 for spring semester. Applications submitted after the tenth day of classes will not be considered.

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

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

Apply at www.wsu.edu/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. Applicants 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) 335-5886 or at www.wsu.edu/admissions for further information.

High School Students

High school students may enroll at Washington State University provided they are admitted to the university and pay the appropriate fees. Such enrollments may be for high school or university credit or both. For Fall and Spring semesters, all eligible high school students enroll through Running Start. For Summer Session, special fees may apply.

Limited Enrollment Programs

Since academic departments may establish additional requirements for admission or certification to specific programs, eligibility for admission to Washington State University does not ensure acceptance into any department or program as a certified major and degree candidate. Several academic programs including, but not necessarily limited to, architecture, business administration, communication, computer science, construction management, economics, education, engineering, fine arts, hotel and restaurant administration, interior design, landscape architecture, mathematics, music, nursing, psychology, pharmacy, and veterinary medicine are un-
able to accept all interested students. In these situations, and others which may arise in the future, the most highly qualified students will be selected up to the enrollment limits in the specific programs. Students applying for admission to selective programs should contact the Office of Admissions regarding special requirements and application deadlines. For instance, applicants for veterinary medicine must apply by October 31; pharmacy by March 1; nursing by February 15 for fall and September 1 for spring. Deadlines 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 departmental 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 Advisor in the major interest area by the Student Advising and Learning Center. This Advisor can be changed if the student’s original interest should change. Students choosing not to specify a major interest area will be assigned to a general Advisor.

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 g.p.a. The chair of the major department then becomes the Advisor 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.

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 additional numerical credit but may yield credit toward completion of General Education Requirements 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 $50 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 2002-2003 Undergraduate Yearly Expenses

<table>
<thead>
<tr>
<th>Description</th>
<th>Resident</th>
<th>Nonresident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Costs</td>
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<td></td>
</tr>
<tr>
<td>Tuition</td>
<td>$4,134</td>
<td>$11,942</td>
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<tr>
<td>Room and Board</td>
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<tr>
<td>Indirect Costs</td>
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<td></td>
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<tr>
<td>Books/Required Fees</td>
<td>1244</td>
<td>1244</td>
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<tr>
<td>Transportation and Miscellaneous</td>
<td>3,294</td>
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<tr>
<td>Totals</td>
<td>$14,510</td>
<td>$22,318</td>
</tr>
</tbody>
</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 $15.00 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 through the Federal Family Education Loan Program (FFELP), Pell Grants, Supplemental Educational Opportunity Grants, Federal College Work-Study employment, and Health Professions and Nursing Loans. State-sponsored programs include Tuition and Fee Waivers, State Work-Study employment and State Need Grants. University sources of aid include scholarships and institutional grants.

Students wishing to apply for any of the above aid programs at WSU must submit the Free Application for Federal Student Aid (FAFSA). These applications are available from all colleges and universities, public high schools, public libraries, and on the Web at www.fafsa.ed.gov. Be sure to list WSU as a school to receive your data. Our Federal School Code is 003800. Your application must be received by the Federal Processing Center by March 1 to receive priority processing. If you complete the application online, you must mail the signature page to the federal processor or use the PIN issued by the Department of Education for your application to be processed fully. Please allow 7-10 days for mail time for either the signature page or the paper FAFSA. If you miss the priority deadline, we 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 regardless of income. 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 scholarships@wsu.edu and on the Web at www.finaid.wsu.edu/scholar.
Academic Progress: 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 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 (6 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 6 credit hours of enrollment.

Students with Disabilities

The state of Washington administers several programs of assistance to disabled students.

Blind students who are residents of the state of Washington may receive financial assistance under provisions of either RCW 28B.10.210 through 28B.10.220 or RCW 74.16.011 through 74.16.183. Inquiries concerning eligibility under this program should be addressed to Services for the Blind, 3411 South Alaska Street, Seattle, WA 98118, (800) 552-7103.

Other students or prospective students who are residents and have a vocational handicap may be eligible for assistance through the vocational rehabilitation program administered by the state of Washington. Information concerning eligibility should be directed to the Department of Social and Health Services, Division of Vocational Rehabilitation, 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 or on the web at www.va.wsu.edu. There is currently at least a two-month delay between approval of the application and receipt of the first monthly benefits check for most students.

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

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 6 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 6 credits per semester or 4 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 listed in the Schedule of Classes 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 website at www.registrar.wsu.edu.

Waiver of Fees for Children of Law Enforcement Officers and Firefighters

Students who are the children of law enforcement officers or firefighters who lost their lives or became totally disabled in the line of duty while employed by any public law enforcement agency or full-time or volunteer fire department in the state of Washington may be eligible for a partial tuition waiver. Washington law defines a totally disabled individual for waiver purposes as a person who has become permanently disabled for life by bodily injury or disease and is thereby prevented from performing any occupation or gainful pursuit. Students claiming this special exemption should apply to the Veterans Affairs Office, French Administration Building, Room 346, and provide legal documentation of the death or disablement under the conditions prescribed for eligibility in RCW 28B.15.380.
Housing

Twenty-one 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 Scholars and Honors Hall, Wellness Hall, and 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 64726, Pullman, WA 99164-1726. For information on sororities and fraternities, please write to Panhellenic and/or Interfraternity Council, Compton Union Building, P.O. Box 647204, Pullman, WA 99164-7204, or visit our web site at www.wsu.edu/livingat.

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

Residence Halls and Dining 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 2002-2003 academic year is $5,530. This amount is to be paid prior to registration or on an 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, or for the loss of, or damage to, any resident's property, or personal injury sustained on the premises. It is urged that appropriate insurance be obtained prior to hall occupancy.

Family/Graduate Student Housing

The university maintains 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 641726, Pullman, WA 99164-1726.

Single Student Apartments

The university operates 316 apartments that are available to unmarried students desiring apartment-type living. Sophomores and above are eligible for this type of housing. Apartments are rented only to groups of the same sex. Units are two-, three-, and four-bedroom and are completely furnished except for linen, kitchen utensils, cleaning equipment, and study lamps. Assignments are made from a waiting list based on the date a completed group application is received. Information and applications may be 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. Please note that the tuition and fees shown below will be changed prior to the Fall Semester of 2002. At the time of publication, the amount of the increases was unknown. The figures will be updated on the website, www.wsu.edu/studacct, as soon as new figures are available.

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

ESTIMATED 2002-2003 REGISTRATION FEES
per semester

<table>
<thead>
<tr>
<th>FULL-TIME FEES</th>
<th>Undergraduate</th>
<th>Graduate</th>
<th>DVM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident (10-18)</td>
<td>$2,067.00</td>
<td>$3,029.00</td>
<td>$5,236.00</td>
</tr>
<tr>
<td>Resident (19 hrs and above)</td>
<td>2,067.00 + 287.00</td>
<td>3,029.00 + 287.00</td>
<td>5,236.00 + 287.00</td>
</tr>
<tr>
<td>Resident-WAMI</td>
<td>5,161.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonresident (10-18 hrs)</td>
<td>5,971.00</td>
<td>7,422.00</td>
<td>12,986.00</td>
</tr>
<tr>
<td>Nonresident (19 hrs and above)</td>
<td>5,971.00 + 727.00</td>
<td>7,422.00 + 727.00</td>
<td>12,986.00 + 727.00</td>
</tr>
</tbody>
</table>

PART-TIME FEES per credit hour
(per credit hour; minimum charge: 2 credit hours)

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>DVM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>$207.00</td>
<td>$303.00</td>
</tr>
<tr>
<td>Nonresident</td>
<td>597.00</td>
<td>742.00</td>
</tr>
</tbody>
</table>

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 student need not be claimed as a dependent by the resident parent to be classified as a resident. The term domicile means a person’s true, fixed and permanent home and place of habitation. Active duty U.S. military personnel stationed in Washington and their spouses and dependent children shall be classified resident.

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


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.
Tuition and Fees

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 graduate service appointment involving not less than 20 hours per week; (2) is a faculty member, classified staff member, or administratively exempt employee holding not less than a half-time appointment or the spouse or dependent child of such a person; (3) is active-duty military personnel stationed in the state of Washington; or (4) is an immigrant having refugee classification from the U.S. Immigration and Naturalization Service or the spouse or dependent child of such refugee, if the refugee (a) is on parole status, or (b) has received an immigrant visa, or (c) has applied for United States citizenship.

Exemption from nonresident tuition and fee differential shall apply only during the term(s) such person shall hold such classification, appointment, or be employed. To determine if you qualify for one or more of these exemptions, graduate students may apply at the Graduate School, French Administration Building, Room 324, and undergraduates may apply at the Office of Student Affairs, Lighty Student Services Building, Room 360.

Additional information about residency requirements, and the application for change of residency status, can be found at Web site www.wsu.edu or by contacting Washington State University. The Washington State Legislature determines residency classification and the law applies to all colleges and universities in the state. See RCW 28B.15.012 at Web site www.leg.wa.gov/isl2015/rcw.cfm. The General Catalog is intended to provide a brief summary of the residency requirements and does not replace or supersede any residency law enacted by the Legislature.

REFUND POLICY

Registration Fees

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

- Week 2: 80% reduction
- Week 3: 80% reduction
- Week 4: 70% reduction
- Week 5: 60% reduction
- Week 6: 60% reduction
- Week 7: 50% reduction
- Week 8: 50% reduction
- Week 9: 40% reduction
- Week 10: 0% reduction
- Week 11: 0% reduction
- Week 12: 0% reduction

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

Course Withdrawals After the 30th Day

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

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

Special Course Fees and Activity Fees

A full refund of special tuition and course fees will be granted to students who withdraw within the first 10 days of instruction of the semester (first five days of the start of instruction for second block courses) from a course requiring a Special Course Fee. There is no refund of special tuition and course fees after the 10th day of instruction of the semester (after the 5th day from 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 Ad. Bldg., 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/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 Ad.

All Seasons Sports Pass - A full refund is available upon request during the first ten days of the fall semester. 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.

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 S8, 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 who wish to drop all of their classes before the first day of semester must do so over METRO. After the semester has started, students can cancel their enrollment by filling out the online cancellation of enrollment form at www.cancel.wsu.edu. Students canceling enrollment under certain unusual circumstances, such as documented health problems, death in the immediate family, military service, or job relocation may be eligible to petition for a reduction in tuition for the current semester. Consult with the Student Affairs Office for the appropriate campus regarding these procedures.

Nursing and Distance Degree Students

To withdraw, students must contact their ICN or DDP administrative office. Students canceling enrollment under certain unusual circumstances, such as documented health problems, death in the immediate family, military service, or job relocation may be eligible to petition for a reduction in tuition for the current semester. Consult with the appropriate administrative office regarding these procedures.
COLLEGE OF AGRICULTURE AND
HOME ECONOMICS

James J. Zuiches

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, on-going research programs, and outreach programs of cooperative extension. All of these contribute to the development of Washington’s human and natural resources.

The college’s 11 teaching departments offer approximately 30 majors that prepare professionals for careers in 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. All degree programs provide students with opportunities for interactions with researchers, in the classroom and in their lab/studios, and with hands-on experiences in the field through internships.

Agriculture and natural resources are two of the most important industries in the state of Washington. Although the number of individuals directly involved in production agriculture has declined, the overall agricultural industry 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 admission to veterinary school and earn a baccalaureate degree simultaneously.

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

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science in Agriculture</td>
<td>Biological Systems Engineering</td>
</tr>
<tr>
<td>Agricultural Communications</td>
<td>Biological Systems Engineering</td>
</tr>
<tr>
<td>Agricultural Education</td>
<td>Biological Systems Engineering</td>
</tr>
<tr>
<td>General Agriculture</td>
<td>Biological Systems Engineering</td>
</tr>
</tbody>
</table>

Bachelor of Science

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Business</td>
<td>Agricultural and Resource Economics</td>
</tr>
<tr>
<td>Agricultural Economics (including agricultural production and resource management; and food and resource economics)</td>
<td>Agricultural and Resource Economics</td>
</tr>
<tr>
<td>Agricultural Technology and Management</td>
<td>Biological Systems Engineering</td>
</tr>
<tr>
<td>Animal Sciences</td>
<td>Animal Sciences</td>
</tr>
<tr>
<td>Biological Systems Engineering</td>
<td>Biological Systems Engineering</td>
</tr>
<tr>
<td>Crop Science (including business and industry, cropping systems, science/biotechnology, and turfgrass management)</td>
<td>Crop and Soil Sciences</td>
</tr>
<tr>
<td>Entomology (including integrated pest management)</td>
<td>Entomology</td>
</tr>
<tr>
<td>Environmental Science</td>
<td>Environmental Science and Regional Planning</td>
</tr>
<tr>
<td>Food Science and Human Nutrition</td>
<td>Food Science and Human Nutrition</td>
</tr>
<tr>
<td>Genetics and Cell Biology (Applied option in either plant or animal biotechnology)</td>
<td>see Molecular Biosciences</td>
</tr>
<tr>
<td>Horticulture</td>
<td>Horticulture and Landscape Architecture</td>
</tr>
<tr>
<td>(including environmental horticulture, fruits and vegetables, tree fruit management, and viticulture/enology)</td>
<td>Natural Resource Sciences</td>
</tr>
<tr>
<td>Natural Resource Sciences</td>
<td>Natural Resource Sciences</td>
</tr>
<tr>
<td>Forestry</td>
<td>Natural Resource Sciences</td>
</tr>
<tr>
<td>Natural Resources</td>
<td>Natural Resource Sciences</td>
</tr>
<tr>
<td>Range Management</td>
<td>Natural Resource Sciences</td>
</tr>
<tr>
<td>Wildlife Ecology</td>
<td>Natural Resource Sciences</td>
</tr>
<tr>
<td>Wildland Recreation Management</td>
<td>Natural Resource Sciences</td>
</tr>
<tr>
<td>Soil Science (including environmental soil science, precision farming, soil management, and sustainable agriculture)</td>
<td>Crop and Soil Sciences</td>
</tr>
</tbody>
</table>

Colleges

Graduate School
### Bachelor of Landscape Architecture
- Landscape Architecture
- Horticulture and Landscape Architecture

### Master of Arts
- Agriculutre
- Agricultural and Resource Economics

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

### Master of Science
- Agriculture
- Animal Sciences
- Crop Science
- Entomology
- Food Science
- Genetics and Cell Biology
- Horticulture
- Landscape Architecture
- Natural Resource Sciences
- Natural Resources
- Nutrition
- Plant Pathology
- Plant Physiology
- Soil Science

### Doctor of Philosophy
- Agricultural Economics
- Animal Sciences
- Crop Science
- Entomology
- Food Science
- Genetics and Cell Biology
- Horticulture
- Nutrition
- Plant Pathology
- Plant Physiology
- Soil Science

### Home Economics Degrees

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts</td>
<td>Apparel, Merchandising, and Textiles</td>
</tr>
<tr>
<td></td>
<td>Apparel, Merchandising, and Interior Design</td>
</tr>
<tr>
<td></td>
<td>Human Development</td>
</tr>
<tr>
<td></td>
<td>Agriculture and Resource Economics</td>
</tr>
<tr>
<td></td>
<td>Human Development</td>
</tr>
<tr>
<td></td>
<td>Agricultural and Resource Economics</td>
</tr>
<tr>
<td></td>
<td>Interior Design</td>
</tr>
<tr>
<td></td>
<td>Apparel, Merchandising, and Textiles</td>
</tr>
<tr>
<td></td>
<td>Apparel, Merchandising, and Interior Design</td>
</tr>
<tr>
<td></td>
<td>Human Development</td>
</tr>
<tr>
<td></td>
<td>Apparel, Merchandising, and Interior Design</td>
</tr>
<tr>
<td></td>
<td>Food Science</td>
</tr>
<tr>
<td></td>
<td>Food Science and Human Nutrition</td>
</tr>
<tr>
<td></td>
<td>Interior Design</td>
</tr>
<tr>
<td></td>
<td>Apparel, Merchandising, and Textiles</td>
</tr>
<tr>
<td></td>
<td>Apparel, Merchandising, and Interior Design</td>
</tr>
<tr>
<td></td>
<td>Food Science</td>
</tr>
<tr>
<td></td>
<td>Food Science and Human Nutrition</td>
</tr>
</tbody>
</table>

### 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, MISSION, AND GOALS

**Vision**

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

**Mission**

The mission of the CBE is to produce graduates who have the intellectual capabilities and skills necessary for them to be successful in their chosen fields in today's increasingly competitive technological and global business environment. The CBE is committed to expanding the diversity of the student body and faculty. As part of the tradition of a land grant university, our core activities are undergraduate and graduate education, research, and service. We will continue to foster the synergies that exist among these activities. The CBE is committed to:

1. Educate graduates with the skills essential to problem solving, communication, teamwork, leadership, and ethical decision-making;
2. Critically examine and extend existing knowledge;
3. Effectively disseminate state-of-the-art knowledge to students, colleagues, business, government, and other people whom we serve; and
4. Develop outreach programs.

**Goals**

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

1. Support faculty who are producing high-quality scholarly work that results in the creation, application, and dissemination of knowledge; that enhances the educational experience of our students; that is valuable to business and government; and that adds to the reputation of the CBE.
2. To integrate technology throughout the undergraduate and graduate programs, to support faculty in their use of technology, and to produce graduates who are technologically literate.
3. To explore and secure private funding needed to supplement State funding to support and reward faculty research and teaching innovation, to support student scholarships and services, and to support the CBE Office of Technology.
4. To provide outreach programs to community colleges, foreign universities, industry, small businesses, and place-bound students; however, such programs will be undertaken only if they will generate a profit and will not take resources from other business programs.

The curricula leading to degrees in business administration and accounting at both the undergraduate and graduate levels are accredited nationally by AACSB International - The International Association for 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

General Business
Human Resources/Personnel
International Business
Management
Management Information Systems
Marketing
Real Estate
Risk Management and Insurance

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
- International Economic Development
- Labor Economics

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 Hospitality Business Management 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 g.p.a. Students should certify into hotel and restaurant or a particular business major upon completion of 60 hours of credit and specific course and g.p.a. 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 24 semester hours, 3 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.

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 produce 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 and researchers in a variety of educational fields; administrators for schools, colleges, and universities; and sport-related specialists for private and community agencies. The college also provides professional training in movement studies, athletic training, counseling, and counseling psychology. It offers a variety of educational services to local school systems.

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

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

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

The College of Education also functions as a service institution for schools and communities in the state of Washington. Applied research services are provided to education and health-related agencies throughout the United States and internationally. Services of faculty are available for consultative 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:

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

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

<table>
<thead>
<tr>
<th>Degree</th>
<th>Areas of Specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Education</td>
<td>Administration</td>
</tr>
<tr>
<td></td>
<td>Counseling</td>
</tr>
<tr>
<td></td>
<td>Curriculum and Instruction</td>
</tr>
<tr>
<td></td>
<td>Diverse Learners</td>
</tr>
<tr>
<td></td>
<td>Educational Psychology</td>
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<tr>
<td></td>
<td>Elementary Education</td>
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<tr>
<td></td>
<td>Literacy</td>
</tr>
<tr>
<td></td>
<td>Secondary Education</td>
</tr>
<tr>
<td>Master of Arts in Education</td>
<td>Administration</td>
</tr>
<tr>
<td></td>
<td>Counseling</td>
</tr>
<tr>
<td></td>
<td>Curriculum and Instruction</td>
</tr>
</tbody>
</table>

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.

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.

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

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department or Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Architecture</td>
<td>Architecture</td>
</tr>
<tr>
<td>Bachelor of Arts</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Bachelor of Science</td>
<td>Architectural Studies</td>
</tr>
<tr>
<td>Master of Engineering Management</td>
<td>Engineering Management</td>
</tr>
<tr>
<td>Master of Science</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Mechanical Engineering</td>
</tr>
</tbody>
</table>

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

The established undergraduate engineering programs offered by the college are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700. Accreditation for the manufacturing engineering and computer engineering programs is currently being sought.

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 their departments to design courses to be studied 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 Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700. 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. Accreditation for this new program is currently being sought.

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

Interim 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 and one semester being contiguous, when the student is enrolled full-time and present on the Pullman campus. Full-time enrollment for four summer sessions may be substituted for two academic year semesters. Summer session cannot be substituted for the semester contiguous with a summer session requirement for the doctoral degree.

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

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

Opportunities for advanced study and research with members of the 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 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.

Master of Arts and Master of Science

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

Additional Degrees

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

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

Admission

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

Students who contemplate entering the Graduate School should obtain application forms from the Office of the Graduate School. Applications are also available on the web at www.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, demonstrates 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 accepted only after evaluation of their undergraduate records, as well as their performance in graduate study, and the minimum criteria, as described above, will apply.

Because of limitations within certain departments, it may be necessary to deny admission to some qualified applicants. Students who come to Washington State University before receiving the admission certificate do so at their own risk. For further details the Graduate Study Bulletin should be consulted.
Transfer of Graduate Credits
Appropriate credits (with a grade of B or higher) earned in other accredited graduate schools may be applied to a limited extent toward an advanced degree; however, they may not be substituted for residence requirements. Use of WSU credit earned prior to formal admission to the Graduate School is restricted. For necessary interpretations, inquiries should be sent to the Dean of the Graduate School.

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

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

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

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

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

Seniors who wish to enroll in 500-level courses must obtain approval of the major 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 Study will be dropped from the university.

Student status enrollees who wish to enroll for credit must give the Graduate School one month notice prior to the enrollment date.

Graduate School to be in good standing for up to four consecutive years.

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

Assistantships, Fellowships, and Scholarships
Teaching and research assistantships are available in most departments offering advanced degrees, and research fellowships are granted in some departments. For the student personnel program, staff assistants are appointed each year. The Graduate 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, trainees, and assistantship offer.”

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

Mary Wack, Dean

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 1100 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 apply to the University Honors College after the end of their first semester. 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. Students are assured a nucleus of courses in humanities, social sciences, biological sciences, and physical sciences, a knowledge of at least one foreign language, and a concentration of subject matter in the major and minor fields. As the interests of students develop, students are encouraged to supplement their programs with elective courses of special cultural value, such as those in art, literature, and music.

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

The college 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 prelaw) to students who will then enter professional schools. At the same time these curricula are designed to provide a basic liberal education.

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


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 the 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 the 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
History
Liberal Arts
Music
Philosophy
Political Science
Social Studies
Sociology
Speech and Hearing Sciences
Theatre Arts and Drama
Women's Studies
Bachelor of Fine Arts
Fine Arts
Music
Psychology
American Studies
Anthropology
Communication
Criminal Justice
English
Foreign Languages and Literatures
History
Music
Political Science
Sociology
Speech and Hearing Sciences
Bachelor of Science Psychology
Bachelor of Music Music
Bachelor of Fine Arts Fine Arts
Bachelor of Science Psychology
Bachelor of Arts American Studies
Anthropology
Communication
Criminal Justice
English
History
Foreign Languages and Literatures
Music
Psychology
Sociology
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.

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 1 for spring admission.

Professional Development

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

Degrees

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

Degree | Area
--- | ---
Bachelor of Science in Nursing | Generalized practice of professional nursing
Master of Nursing | Community-based population-focused nursing
Family nurse practitioner | Psychiatric/mental health nurse practitioner

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 third professional year of the Pharm.D. curriculum is delivered in the newly constructed Health Sciences building located on the Washington State University Spokane.
campus. 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. Freshmen students who will complete their pre-pharmacy studies at Washington State University are eligible to apply for the College of Pharmacy’s guaranteed admissions program.

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 Health Policy and Administration, Master of Science (Pharmacology and Toxicology), and Doctor of Philosophy (Pharmacology and Toxicology).

**COLLEGE OF SCIENCES**

Michael D. Griswold, Interim 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, Geospatial Laboratory, Omwney Herbarium, Conner Zoological Museum, Hudson Biological Reserve, and Meyer’s Point Biological Study Site are all facilities within the college. A strong technical services unit provides instrument shops, electronics construction and repair, graphics, and glassblowing. The college shares support and use of several university-wide facilities such as the Laboratories for Bioanalysis and Biotechnology, and the Environmental Research Center.

Major research areas in the college include biotechnology, shock physics, molecular and atomic interactions on surfaces, continuum mechanics, avian environmental physiology, regulation of cellular growth and differentiation, genetic engineering, cytoengineering, 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>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science</td>
<td>Biological Sciences, Pharmacy, Chemistry, Environmental Science, General Studies, biological sciences, mathematics, physical sciences, Genetics and Cell Biology, Geology, Mathematics, Microbiology, Physics, Zoology, Chemistry, Biochemistry, Biology, Botany, Environmental Science, Genetics and Cell Biology, Geological Engineering, Geology, Mathematics, Microbiology, Physics, Plant Physiology, Statistics, Zoology, Regional Planning, Biochemistry, Botany, Chemistry, Genetics and Cell Biology, Environmental and Natural Resource Sciences, Geology, Materials Science, Mathematics, Microbiology, Physics, Plant Physiology, Zoology</td>
</tr>
<tr>
<td>Master of Arts</td>
<td>Chemistry, Biochemistry, Biology, Botany, Environmental Science, Genetics and Cell Biology, Geological Engineering, Geology, Mathematics, Microbiology, Physics, Plant Physiology, Statistics, Zoology, Regional Planning, Biochemistry, Botany, Chemistry, Genetics and Cell Biology, Environmental and Natural Resource Sciences, Geology, Materials Science, Mathematics, Microbiology, Physics, Plant Physiology, Zoology</td>
</tr>
<tr>
<td>Master of Science</td>
<td>Biology, Botany, Environmental Science, Genetics and Cell Biology, Geological Engineering, Geology, Mathematics, Microbiology, Physics, Plant Physiology, Statistics, Zoology, Regional Planning, Biochemistry, Botany, Chemistry, Genetics and Cell Biology, Environmental and Natural Resource Sciences, Geology, Materials Science, Mathematics, Microbiology, Physics, Plant Physiology, Zoology</td>
</tr>
<tr>
<td>Master of Regional Planning</td>
<td>Regional Planning, Biochemistry, Botany, Chemistry, Genetics and Cell Biology, Environmental and Natural Resource Sciences, Geology, Materials Science, Mathematics, Microbiology, Physics, Plant Physiology, Zoology</td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Environmental and Natural Resource Sciences, Geology, Materials Science, Mathematics, Microbiology, Physics, Plant Physiology, Zoology</td>
</tr>
</tbody>
</table>

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.
Admission to the College of Veterinary Medicine is as follows:

Applicants who wish to be considered the next year must present new applica-
tions.

Successful applicants who are not currently enrolled at WSU will be asked to fill
out a uniform undergraduate application for admission to WSU. Unsuccessful

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 seven years is required to obtain the degree of Doctor of Veteri-
nary Medicine. The first three years of preveterinary training can be taken at any
institution having courses equivalent to those taught at Washington State Uni-
versity, 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 uni-
versity 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 inter-
cultural 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, math-
ematics, genetics, statistics, and electives. All courses except biochemistry and

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

Courses designed to fit these requirements are offered by Washington State, and
the number of students admitted to preprofessional work is not limited. Since the
number of applicants for admission to the professional course exceeds the number
that can be admitted, no assurance can be given that all applicants who successfully
complete the preprofessional curriculum will be admitted. WSU does not grant a BS
in preveterinary medicine. Students taking preveterinary course work may declare a
major in any subject, but are encouraged to major in animal science, biology, chem-
istry, 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 should fill out an on-line application form at the
College of Veterinary Medicine website (www.vetmed.wsu.edu) in early August.
Deadline for submission of applications is October 1. A $60 application/process-
ing fee will be assessed as part of completing the application. The Washington
Oregon Idaho (WOI) Admissions 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 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 applica-
tions.

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

3. To all other qualified students.
Spokane, Tri-Cities, and Vancouver Campuses

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 (SIRIT) 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 spring semester 2002. 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 state-of-the-art research laboratories, clinical space, and graduate programs in pharmacy, human nutrition, exercise science, 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 EWSU 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.

Spokane offers 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, exercise immunology, neurosciences and mental health, cardiology, oncology, diabetes, and reproductive physiology. Special features of the HREC are 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 (WISCOP), housed at WSU Spokane, is a partnership between WSU, the Washington Associations of Sheriffs and Police Chiefs, and the Washington Criminal Justice Training Commission.

WISCOP 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, WISCOP 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 SIRIT. The statewide office of the SBDC is headquartered at WSU Spokane’s downtown location.

Priorities at 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, teaching, 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, and hotel.restaurant administration.

For details, contact:
Student Services, WSU Spokane
310 North Riverpoint Blvd.
Spokane, Washington 99202
(509) 358-7500
enroll@wsu.edu
www.spokane.wsu.edu
WASHINGTON STATE UNIVERSITY TRI-CITIES

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, educational administration and supervision, and enology and viticulture, among others. Certification programs in education are also offered, as well as a Master in Teaching program.

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 IR-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. 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 3,500 alumni who currently live and work in the region.

Degree Programs—Thirteen bachelor's and seven 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.), mechanical engineering (MSME), nursing (MN), public affairs (MPA), technology management (MTM), and teaching (M.T.).

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, cafeteria, and a system of hiking and pedestrian trails. Facilities also include computer, engineering, nursing, psychology, and 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, 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 coursework 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
14204 NE Salmon Creek Avenue
Vancouver, WA 98686
(360) 546-9779
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 Schedule of Classes, available at www.registrar.wsu.edu or at the Registrar’s Office. 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 advisor. (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 "Tuition and Fees" in this catalog.

Financial Aid: For financial aid purposes, full-time enrollment for an undergrad-uate 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 faoservr.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 3 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. Ordinarily audit cards will be issued only for lecture courses or the lecture portion of laboratory courses. An audit fee is charged for other than regularly enrolled full-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. See Appendix, Rule 70.

Classification of Students

Undergraduate students who have completed less than 30 semester credits are classified as freshmen, 30-39 1/2 semester credits as sophomores, 60-89 1/2 semester credits as juniors, and 90 and above as seniors.

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

Graduate degree students are those admitted to a graduate program in a degree classification on the basis of a specific application to the Graduate School. See Appendix, Rule 25.
**Numbering System of Courses**

**Lower-division**
Courses numbered 100-199 inclusive are normally taken by freshmen.
Courses numbered 200-299 inclusive are normally taken by sophomores.

**Upper-division**
Courses numbered 300-399 inclusive are normally taken by juniors and seniors.
Courses numbered 400-499 inclusive are normally taken by juniors and seniors.

These courses may be included in graduate programs provided they are published in the Graduate Study Bulletin and provided they are not specific requirements in preparation for graduate study.

**Graduate**
Courses numbered 500-599 inclusive are primarily for graduate students.
Qualified seniors may take these courses for graduate credit during their last year or summer session. Other qualified seniors may take these courses for undergraduate credit with permission of their department chair.
Courses numbered 600-800 have as a prerequisite regular student status in the Graduate School.

**Professional**
Courses numbered 500-800 and designated with a P following the course number are professional courses.

**Computer Literacy**
Washington State University offers a wide variety of courses, small group tutorials, instructional mini-seminars, and help sessions for students who feel they need assistance in acquiring computer skills. Students are encouraged to bring to campus skills in word processing, use of spread sheets 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 must not enroll for Math 171 until successfully completing Math 107. Prerequisites may also be general as: one semester of chemistry or concurrent enrollment. (See Biol 103.) Concurrent enrollment is indicated by the symbol c/. Prerequisites may include a level of expertise or a specified major, e.g., students may not enroll in Spanish 324 without first being fluent in Spanish, or students may not enroll in an advanced seminar before achieving senior standing in the major.

Recommended prerequisites are listed, as well, preceded by the abbreviation: rec.

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

**Field Trip Guidelines**

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

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

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

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

**Certification of a Major**

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

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

Students who satisfy the minimum university requirements plus any departmental core requirements with a 2.0 cumulative g.p.a. are qualified for certification except in those departments which are impacted or must meet specific certification standards. Consult the departmental section of this catalog for specific departmental requirements.

**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
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, failing option. (See below.) Instructors will turn in regular letter grades for all students enrolled in courses under the fail, option, but grades will appear on the student’s permanent record as P (Passing) or F (Failing).

I (Incomplete)–no credit or grade points. The term is used to indicate that a grade has been deferred. It is for students who for reasons beyond their control are unable to complete their work on time. Undergraduates or graduates who receive an I grade in an undergraduate course (100-499) have up to the end of the ensuing year to complete the course, unless a shorter interval is specified by the instructor. If the incomplete is not made up during the specified time or if the student repeats the course, the I is changed to an F. (See Rule 34.)

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

W (Withdrawal Passing)–no credit or grade points. Used if the student has filed, in the Registrar’s Office, official notice of withdrawal from the course prior to the end of the 9th week, withdrew passing in accordance with Rule 69, or withdrew from the university prior to the last day of instruction. For undergraduates who enter WSU in fall 1998 or later, the maximum number of WSU withdrawals is 6, not counting withdrawals that result from the cancellation of enrollment. 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.

X (Grade Withheld)–no credit or grade points. Denotes continuing progress toward completion of special problems, research, thesis, or doctoral dissertation, i.e., 499, 600, 700, 702, 800; X grades are converted to S upon satisfactory completion. An X grade may also be used when no final grade is reported due to instructor’s illness or absence from town. See Appendix, Rule 90, 92, 98-103.

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Grade</th>
<th>Grade points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 301</td>
<td>3</td>
<td>A</td>
<td>12.0</td>
</tr>
<tr>
<td>Bio 422</td>
<td>3</td>
<td>C-</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Credit hours attempted (9) divided into total grade points earned (27) = g.p.a. (3.00)
Total hours earned: 15
Note: P and S grades yield no grade points, thus are excluded from the g.p.a. calculation.

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

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

Transcripts
An official copy of a student’s academic record at Washington State University bears the official seal of the university and the signature of the Registrar is referred to as a transcript. The transcript must include all work taken at Washington State University. Requests for transcripts must be accompanied by the student’s signature and a $4.07 fee per copy. Order forms are available on the web under “Requesting Documents” at www.registrar.wsu.edu. Phone orders for transcripts cannot be accepted. For rush service, call (509) 335-5330. NOTE: Financial indebtedness to the university will prevent the release of a student’s transcript.

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

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

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

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

In determining scholarship for graduation honors, the first grade only shall be used. Repeats by correspondence, extension, or in residence at other institutions must be reported orally or in writing to the Registrar’s Office. If a student transfers a course to WSU from another institution and subsequently repeats the course at WSU, only the credit and grade points earned at WSU will be allowed. See Appendix, Rule 34.

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

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

A student may change a pass, fail enrollment to a regular letter-graded enrollment, or vice versa, during the first three weeks of classes. After the third week and through the last day of instruction in a semester (end of the 15th week), a 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 on a pass, fail basis. 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.

Honor

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 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. Completion 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 reconcile 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 fails below a 2.00 semester g.p.a. for two consecutive semesters is considered academically deficient.

Students in the Advising 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; and
4. File with the Department of Education a complaint concerning alleged failures by Washington State University to comply with the requirements of FERPA.

Washington State University may release directory information contained in a student's education records. "Directory information" means information contained in an education record which would not generally be considered harmful or an invasion of privacy if disclosed. Directory information includes name (including any former name), local and permanent addresses and telephone numbers, electronic mail addresses(es), major and minor fields of study, class, participation in officially recognized activities in sports, weight and height of members of athletic teams, dates of attendance, enrollment status (e.g., undergraduate or graduate, full-time or part-time), degrees, certificates, and awards received including the President's Honor Roll, and the most recent previous educational institution attended by the student. Students may request that the university not release directory information by filing a request with the Office of Payroll Services or online at www.it.wsu.edu/AIS/ATMS/atms.htm.
The Washington State University policy on student records can be found in the Washington Administrative Code 504-21. A complete text of this policy is available upon request from the Registrar's Office, 346 French Administration Building.

Application for Graduation
A student who has (a) completed any of the four-year collegiate curricula, and (b) satisfied the University Requirements for Graduation and any additional departmental or college requirements with a minimum 2.00 g.p.a. may become a candidate for the bachelor's degree, depending upon the field of study. NOTE: Financial indebtedness to the university will prevent the release of a student's diploma.

The award of a degree is conditioned upon the student's good standing in the university and satisfaction of all University graduation requirements. “Good standing” means the student has resolved any unpaid fees or acts of academic or behavioral misconduct, and complied with all sanctions imposed as a result of the misconduct. The University shall deny the award of a degree if the student is dismissed from the University based on his or her misconduct (See Rule 45 and the Student Conduct Code).

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

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

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

A student who has completed any of the five-year curricula, 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 do their senior work under the direction of the college in which the degree is to be granted. The degree granted and the schedule of studies for a given curriculum will be found in the material for the college or department concerned.

Students are required to earn a C average or better in all work taken at this institution. 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 major department. Waivers of specific requirements within courses must be approved by the department teaching the course. A request for waiver of university requirements must be made directly to the General Education Director and be approved by the student's department chair and college dean. Petition forms for waiving university and college requirements are available in the Registrar's Office. See Appendix, Rule 106.

Catalog Options and Limitations
The university requirements for graduation as published in the catalog in effect at the time of the student's initial enrollment are those which must be met for completion of an undergraduate degree program. University requirements for graduation include the General Education Requirements. For transfer students, the initial enrollment date shall be that upon which the student entered 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 graduation requirements. Those who take longer to complete their degrees must meet the University and General Education requirements for graduation as published in the catalog four years prior to the date of graduation. In addition, if more than four years elapses between certification and graduation, the major and specific college requirements in place four years prior to graduation will apply.

Students who initiated their post-secondary education prior to fall 1991 (fall 1993 for transfer students) may, if they wish, fulfill the general university requirements for graduation as published in the 1989-91 catalog.

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

Statement of Institutional Responsibility
As a general rule, undergraduate students who are certified majors or graduate degree candidates can assume that a degree will be granted if they maintain continuous enrollment and meet all requirements as listed in Academic Regulations, Rules 114-118. However, because of serious reductions in financial support, loss of faculty, or for other significant reasons, the university may from time to time find it necessary to discontinue a degree program. When this occurs, further admission into the degree program will be frozen effective with the official action dropping the degree, and every effort will be made to allow currently enrolled majors and graduate degree candidates to complete their degrees within a reasonable period of time.

To facilitate this process, department and program chairs (or the appropriate dean) have the obligation to provide for the individual needs of these students: e.g., (1) students may be encouraged to complete their requirements in similar or related degree tracks; (2) although University Requirements for Graduation and the minimum total hours for the degree may never be waived, the student's major department may waive or substitute departmental degree requirements (approval of the Graduate School required for graduate students); (3) undergraduate students may be allowed to complete remaining requirements at another institution under Rule 114(a) 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 commu-
nity; 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 before completing the Engl 101 requirement (or equivalent) and earning their sixty-first credit. Completing the Junior Portfolio involves submitting three papers from previously assigned class work plus two timed and proctored writing exercises. Students must complete the portfolio no later than the end of the first semester of upper-division standing (upon completion of 60 hours). The Writing Portfolio must be completed before a student enrolls in a course which satisfies the Writing in the Major requirement (see below). For details, consult the Writing Assessment Office, (509) 335-7959, or visit http://juniortfolio.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 requirements. Consult the requirements in the department in which you intend to major.
5. General Education Program requirements - All students regardless of major must fulfill the minimum requirements of WSU’s General Education Program, which are described below, or University Honors College. See Appendix, Rules 106-137.
6. The award of a degree is conditioned upon the student’s good standing in the university and satisfaction of all University graduation requirements. “Good standing” means the student has resolved any unpaid fees or acts of academic or behavioral misconduct, and complied with all sanctions imposed as a result of the misconduct. The University shall deny the award of a degree if the student is dismissed from the University based on his or her misconduct (See Rule 45 and the Student Conduct Code).
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, Biological 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], [Gi] 3
- Social Sciences [S], [Ki] 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 II Course 3
- American Diversity course [D] 1

1 A total of 9 hours of Arts and Humanities and Social Sciences with a minimum of 3 in either.
2 At least 2 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. They 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 meet 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 summer New Student Orientation, at the beginning of fall semester, and prior to spring registration. Examination results will place students in the
core writing course, Engl 101, Introductory Writing (or equivalent), or in Engl 101 plus 1 hour of Engl 102, Writing Tutorial. Students whose native language is not English may be placed in Engl 105, Composition for ESL Students. In some instances, students may be exempted from Engl 101 on the basis of their performance in the Placement Examination. Questions should be directed to the WSU Writing 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 fulfill 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.

### 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.

- Am St/Engl/Hist/W St 216 [S] American Cultures
- Am St 473
- Am St 475
- AMT 417 [T] Social and Psychological Aspects of Dress
- Anth/W St 214
- Anth 327/CAC 378 [S] Gender and Culture in America
- CAC 111 [S] Introduction to Asian/Pacific American Studies
- CAC 131 [S] Introduction to Black Studies
- CAC/W St 235/Hist 205 [H] African American History
- CAC/Engl 220 [H] Introduction to Multicultural Literature
- CAC 254 [S] Comparative Latino/a Cultures
- CAC/Hist/W St 255 [S] Chicana/o History
- CAC/Hist 280 [S] Race and Law in American History
- CAC 302 [S] Social Psychology of Prejudice
- CAC 336 [H] African American Folklore
- CAC 337 [S] Black Social Psychology
- CAC 338 [H] African American Cinema
- CAC/W St 372/Anth 312 [S] Native American Women in Traditional and Contemporary Societies
- CAC 380 [S] Immigration and Citizenship in the Global Economy
- CAC/W St 411 [T] Asian Pacific American Women
- CAC 440 [T] Social Justice in American Culture
- CAC 453 [T] Health Issues for Chicanos/as
- CAC/CoPsy 457 [T] Chicano/Latino Psychology
- CAC 475/Hist 408 [T] Indians of the Northwest

- Com 471/CAC 404 [T] Stereotypes and The Media
- Crm J/CAC/W St 105 [S] Realizing Justice in a Multi-Cultural Society
- Hist 150 [S] Peoples of the United States
- Hist/CAC/W St 298 [S] History of Women in American Society
- Hist/CAC/W St 304 [H] American Roots: Immigration, Migration, and Ethnic Identity
- Hist 321 [H] U.S. Popular Culture, 1800-1930
- Hist 322 [H] U.S. Popular Culture Since 1930
- Hist 325 [S] Food in the United States
- Hist/CAC/W St 398 [H] History of Women in the American West
- H D 350 [S] Diversity in Contemporary Families
- Mus 362 [H] History of Jazz
The General Education Program

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 an integrated study of the social, political, philosophical, and religious systems of the major world civilizations, along with an introduction to their significance in human development. These courses should introduce the student to the study of human culture as manifested in literature, languages, history, philosophy, art, music, or theater. 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.

W St/Soc 200 [S] World Civilizations I  
W St/Soc 302 [S] 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  
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.

[Tier II]  
Arts and Humanities [H]  
Arch/Arch 1A 202 The Built Environment  
Arch 220 Architectural History I  
Arch 221 Architectural History II  
CAC/Engl 220 Introduction to Multicultural Literature  
CAC 235/Hist 205/W St 235 African American History  
CAC 336 African American Folklore  
CAC 338 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 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
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</table>

**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 disci-
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. 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.

### Tier II: Social Sciences [S]

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<td>Ag Ec/Hist 320</td>
<td>American Agriculture and Rural Life</td>
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<td>Anth/W St 214</td>
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<td>Anth 330</td>
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<td>Speech, Thought and Culture</td>
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<td>CAC/Hist/W St 255</td>
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<td>CAC 335/Hist 313</td>
<td>Civil Rights Movement in America</td>
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<td>European Women's History, 1400-1800</td>
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### Tier II: Social Sciences or Intercultural Studies [K]

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INTERCULTURAL STUDIES
[I, G*, K#] (3 hours)

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

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

Anth 101    [K] General Anthropology
Anth 130    Great Discoveries in Archaeology
Anth 201    [G] Art and Society
Anth 203/CAC 212 [K] Peoples of the World
Anth 301    [G] Arts and Media in Global Perspective
Anth 302    [K] Childhood and Culture
Anth/Asia/Hist 306 [K] Cultures and Peoples of the Middle East
Anth 307    [K] Contemporary Cultures and Peoples of Africa
Anth 309    [K] Cultural Ecology
Anth/W St 316 [K] Gender in Cross Cultural Perspective
Anth 320/CAC 377 [K] Native Peoples of North America
Anth 331/CAC 376 [K] America Before Columbus
CAC 101    Introduction to Comparative American Cultures
CAC 151    [G] Introduction to Chicano Studies
CAC 171    [G] Introduction to Native American Studies
CAC 198    Introduction to Comparative American Cultures - Honors
CAC 211/Hist 201 [K] Introduction to Asian American History
CAC 227    Introduction to African Studies
CAC 313/Eng 311 [G] Asian Pacific/American Literature
CAC 331/Eng 321 [G] African American Literature
CAC 335/Eng 345 [G] Chicano/Chicana Literature
CAC 373/Eng 341 [G] Native American Literature
Chin 111    [G] Asian Film
Com 321    Intercultural Communication
Crop/Soil 360 World Agricultural Systems
Engl 222    [G] World Literature in English
FA 301    [G] Arts of Native North America
FA/Asia 302 [G] The Arts of Asia
For L 101    [G] Introduction to the World of Languages
For L 220    [G] Global Theory/Regional Reality through Culture
Fren 121    Francophone Culture
Fren 311    [G] Francophone Film
Fren 351    [G] Introduction to Francophone Literature

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 Foundations of Islamic Civilization
Hist 275/Asia 275/CAC 217 [K] Introduction to East Asian Culture
Hist 308/CAC 375 [K] North American Indian History, Precontact to Present
Hist 331    [K] Cultural History in Latin America
Hist/W St 335 [G] Women in Latin American History
Hist/Asia 370 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
R S 335    [K] Cross-National Perspectives on Community
Rus 121    [G] Contemporary Russian Culture
Span 111    [G] Latin American Film
Span 121    [G] Latin American Culture
Theat 145    [G] Contemporary World Theatre
W St 220    [K] Women, Science, and Culture
W St 332/Anth 317 Global Feminisms
W St 340    Third World Women and Film

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. (L) designates courses which include lab work.

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 Evolution
Chem 150 Molecules and Science
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 120 (L) Introduction to Botany
Biol 135 Animal Natural History
Biol 201 Contemporary Biology
Biol 298 (L) Biological Science Honors
Biol 330 Principles of Conservation
Biol 390 (L) Stream Monitoring
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 265 Biopsychological Effects of Alcohol and Other Drugs
Psych 372 Introduction to Physiological Psychology
SoilS 201 Soil: A Living System

TIER III COURSES

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 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.

[T] 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.

Astr 450 Life in the Universe
B E Multidisciplinary Design Project
Biol 401 Plants and People
Biol/W St 407 Biology of Women
Biol 408 Contemporary Genetics
C E 401 Global Climate Change
Entom 401 Invertebrates in Biological Thought
FSHN 444 Applied Nutrition in Health Science
MBioS 425 Origins of Life
Mfg E 476 Industrial Ecology and Sustainable Manufacturing
MSE 440 Materials: The Foundation of Society and Technology
PharP 483 Human Body Systems
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.

Ag Ec 420 Growth and Change in the American West (Prereq Ag Ec 201 or Econ 101)

AMT 417 [D] Social and Psychological Aspects of Dress

Anth 404 The Self in Culture (Prereq 100-level Anth, Psych, or Soc)

Anth 405 Medical Anthropology (Prereq 3 hours Anth)

Anth 417 Anthropology and World Problems (Prereq 3 hours Anth or Biol)

Anth 468 Sex, Evolution, and Human Nature (Prereq 3 hours Anth or Biol)

Anth 469 Genes, Culture, and Human Diversity

CAC 405/Engl 410 Cultural Criticism and Theory

CAC/W St 411 [D] Asian Pacific American Women (Prereq CAC or W St course)

CAC/W St 435 [D] African American Women in US Society (Prereq CAC 101, W St 200; Rec CAC 131)

CAC 439/Pol S 474 African Politics

CAC 440 [D] Social Justice and American Culture

CAC 453 [D] Health Issues for Chicanos/as

CAC/W St 454 La Chicana in US Society (Prereq junior standing)

CAC/CoPsy 457 [D] Chicano/Latino Psychology (Psych 105, EdPsy 401, Soc 101, H D 101, or interview with instructor)

CAC 470 Federal Native American Resource Settlement Models

CAC 475/His 408 [D] Indians of the Northwest

Com 471/CAC 404 [D] Stereotypes and The Media

Cpt S 401 Computers and Society (Prereq Phil 260 or Soc 101; completion of writing portfolio)

Crm J/W St 403 Violence Toward Women (Prereq Crm J 101 or W St 200)

Econ 418 Global Capitalism Today: Perspectives and Issues (Prereq GenEd 111; Econ 101 or 102)

H D 403 Families in Poverty (Prereq H D 101, 204 or 6 hours in H D or social sciences)

Hist 409 American Environmental History

Hist 425 The City in History

Hist 435 European Expansion Overseas, 1400-1800

Hist 436 Imperialism in the Modern World

Hist 444 The Renaissance

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

Hist/Asia 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

Jour 405 The Costs of Free Speech (Prereq junior standing)

Pol S 428 Issues in Political Psychology (Prereq Pol S 101 or Psych 105)

Pol S 430 The Politics of Natural Resource and Environmental Policy

Psych 492 Psychology of Language (Prereq Psych 105)

R S 431 [D] The Demographics of American Diversity (Prereq junior standing)

SHS 489 [D] Disability and Society

Soc 415 Ecology of Human Societies (Prereq Anth 101 or Soc 101; ES/RP 101)

Soc 430 Society and Technology

Soc 433 Urbanization and Community Organization (Prereq 3 credits 300-400-level social science)

Soc 442 Political Sociology

Soc 455 Human Values (Prereq Psych 105 or Soc 101; Psych 350)

Soc 474 Collective Behavior and Social Movements (Prereq three 300-400-level Soc or Pol S courses)

W St 406 Women and Work (Prereq W St 200)

W St/CAC 408 [D] Introduction to Critical Race Feminism (Prereq W St 200 or CAC 101)

W St 460 Gender, Race, and Nature in America (Prereq W St 200 or 300)

W St/Soc 484 [D] Lesbian and Gay Studies (Prereq Soc 101, 102, or W St 200)

TIER III COURSES EMPLOYING THE METHODS OF THE ARTS AND HUMANITIES

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

Am St 410 Cities in Fiction

Am St/Engl 471 Cultural Politics Since World War II

Am St/Engl 472 Ecological Issues and American Nature Writing

Am St 473 [D] Arts in American Cultures

Am St 475 [D] Digital Diversity

Arch 428 Architecture and Culture in the Islamic World

Engl/W St 409 Women Writers in the American West

Engl 415 Traditions of Comedy and Tragedy

Engl 419 The Twentieth Century Novel

Engl/Am St 470 Literature and Culture of the American West

For L 410 Issues in World Film and Literatures

Fren 430 Topics in French/Francophone Literature (Prereq three literature or humanities courses)

Hum 410 Love in the Arts
### Tier III Courses Using Methods of the Arts and Humanities (continued)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phil 415</td>
<td>The Experience of Illness in Society: Moral Problems in Health Care</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 (Prereq completion of science GERs)</td>
</tr>
<tr>
<td>Rus 410</td>
<td>Russian Film</td>
</tr>
<tr>
<td>Rus 430</td>
<td>St. Petersburg</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.
The Department of Aerospace Studies (Air Force ROTC) offers eligible students education and training which lead to commissions as second lieutenants in the U.S. Air Force. Air Force ROTC students may major in any degree program offered at Washington State University. They supplement their major curriculum with the specialized aerospace studies courses in order to prepare for active commissioned service.

Students may participate in either the four-year, three-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.

Financial Aid and Scholarships. Air Force ROTC offers enrolled GMC students the opportunity to compete for three-and-one-half-, three-, two-and-one-half-, and two-year scholarships which pay tuition, fees, and a semester book allowance, as well as a $300 per month stipend during fall and spring semesters. Two-year program applicants can compete for a two-year scholarship. All Air Force ROTC students contracted in the POC receive a $350 per month stipend. Contracted POC, not already awarded a scholarship, are eligible for a $1,500 per semester scholarship as long as they maintain a minimum academic requirements and standards.

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

Description of Courses

Aerospace Studies

Aero 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).

Aero 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).

Aero 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.

Aero 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.

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

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

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

Aero 311 Air Force Leadership and Management I 4 (3-2) Examines leadership, management, professional knowledge, Air Force personnel and evaluation systems, and leadership ethics. Leadership Laboratory is mandatory for AFROTC.

Aero 312 Air Force Leadership and Management II 4 (3-2) Examines leadership, management, professional knowledge, Air Force personnel and evaluation systems, and leadership ethics. Leadership Laboratory is mandatory for AFROTC.

Aero 391 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.

Aero 392 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.

Aero 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.

Aero 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.

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

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

Program in Aging

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 Gerontology Certificate 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.

Students who maintain an overall GPA of 3.5 or better for courses that fulfill the requirements of the Program in Aging are awarded in certificate of distinction.

Description of Courses

Aging

275 Special Topics in Aging: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

305 Gerontology 3 Same as H D 305.
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.

**Department of Agricultural and Resource 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.

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**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Ag Ec 201 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>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>Science [B, P, or Q] (GER)</td>
<td>3 or 4</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acctg 230</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ec 210 or quantitative elective</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>ComSt 102 [C], 235 [C], 302 [C], 324 [C] or H D 205 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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</table>

**AGRIBUSINESS REQUIREMENTS (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**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 210 or quantitative elective</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [L, G, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences (GER)</td>
<td>3 or 4</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>Math 201</td>
<td>3</td>
</tr>
<tr>
<td>Stat 212 [N] (GER)</td>
<td>4</td>
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<tr>
<td>Elective</td>
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**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tr>
<td>Ag Ec 330</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ec 370, 450 [M], or 453</td>
<td>3</td>
</tr>
<tr>
<td>Communication Skills Elective</td>
<td>3</td>
</tr>
<tr>
<td>Math 202 [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mgt, Mktxg, or I Bus Elective</td>
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<tr>
<td>Complete Writing Portfolio</td>
<td>3</td>
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<th>Second Semester</th>
<th>Hours</th>
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<tr>
<td>Ag Ec 360</td>
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<tr>
<td>Econ 302</td>
<td>3</td>
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<tr>
<td>Technical/Career Elective</td>
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<tr>
<td>Technical/Career Elective</td>
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<tr>
<td>Elective</td>
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Senior Year

<table>
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<tr>
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<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 409 or 411</td>
<td>3</td>
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<tr>
<td>Ag Ec 435 or B Law 210</td>
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<tr>
<td>Ag Ec 460 [M]</td>
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<td>Ag Ec Elective</td>
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<tr>
<td>Econ 320</td>
<td>3</td>
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<tr>
<td>Technical/Career Elective(^2)</td>
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<table>
<thead>
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<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 370, 450 [M], or 453</td>
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<tr>
<td>Engl 402 [W] (GER)</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<td>Elective</td>
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Junior Year

<table>
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<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 340</td>
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<td>Arts &amp; Humanities [H, G] (GER)</td>
<td>3</td>
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<tr>
<td>Physical Sciences [P] (GER)(^1)</td>
<td>3 or 4</td>
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<tr>
<td>Intercultural [I, G, K] (GER)</td>
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<tr>
<td>Elective</td>
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<thead>
<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>Math 201</td>
<td>3</td>
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<tr>
<td>Stat 212 [N] (GER)</td>
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<tr>
<td>Technical/Career Electives(^2)</td>
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<td>Elective</td>
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Junior Year

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<td>Ag Ec 330, 440 [M], 450 [M], or 453</td>
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<tr>
<td>Ag Ec 350 or 370</td>
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<tr>
<td>Communication Skills Elective</td>
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<td>Electives</td>
<td>6</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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<tr>
<td>Ag Ec 330, 440 [M], 450 [M], or 453</td>
<td>3</td>
</tr>
<tr>
<td>Econ 301 or 302</td>
<td>3</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<td>Technical/Career Electives(^2)</td>
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Senior Year

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<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 320, 420, or 490</td>
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<tr>
<td>Ag Ec 435 or B Law 210</td>
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<tr>
<td>Econ 300-level Elective</td>
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<td>Technical/Career Electives(^2)</td>
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<tr>
<td>400-level Ag Ec Electives</td>
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<td>Ag Ec 330, 440 [M], 450 [M], or 453</td>
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<tr>
<td>Engl 402 [W] (GER)</td>
<td>3</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>0-1</td>
</tr>
</tbody>
</table>

\(^1\) All three science GER courses must total 10 credits.
\(^2\) Consult advisor.

**RESOURCE AND ENVIRONMENTAL ECONOMICS REQUIREMENTS (120 HOURS)** ✔FYDA

This option permits in-depth study into management and decision-making tools, while retaining the flexibility to permit an integrated complement of courses to fulfill an individual student’s needs. It provides good preparation for graduate school. Students may take agribusiness courses under this option but are encouraged to pursue a Bachelor of Science in Agribusiness if they seek specialized training in that area.

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 311</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H, G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Fin, Mgt, or public administration elective</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I, G, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)(^1)</td>
<td>3 or 4</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 320, 420, or 490</td>
<td>3</td>
</tr>
<tr>
<td>Communication Skills Elective</td>
<td>3</td>
</tr>
<tr>
<td>Math 201</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Stat 212 [N] (GER)</td>
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**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Ag Ec Elective</td>
<td>3</td>
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<tr>
<td>Math 202 [N] (GER)</td>
<td>3</td>
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<tr>
<td>Technical/Career Electives(^2)</td>
<td>6</td>
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<tr>
<td>Elective</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>Ag Ec 325 or 340</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ec 330 or NATRS 410</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ec 435</td>
<td>3</td>
</tr>
<tr>
<td>Econ 302</td>
<td>3</td>
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<tr>
<td>Technical/Career Electives(^2)</td>
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**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 409 or 411</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ec 480</td>
<td>3</td>
</tr>
<tr>
<td>Econ 340, 375, or 481</td>
<td>3</td>
</tr>
<tr>
<td>Technical/Career Electives(^2)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>2 or 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>300-400-level Technical/Career Electives(^2)</td>
<td>3</td>
</tr>
<tr>
<td>Econ 340, 375, or 481</td>
<td>3</td>
</tr>
<tr>
<td>Engl 402 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Technical/Career Electives(^2)</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

\(^1\) All three science GER courses must total 10 credits.

**Minor in Agricultural Economics or Agribusiness**

A minor is offered in agricultural economics which requires that a student complete 16 hours of course work in the department, of which 12 hours must be in 300-400-level courses. Students must also complete one of four junior-senior program sequences, e.g., farm management, marketing, agribusiness management or resource economics for the agricultural economics minor. A minor in agribusiness requires Ag Ec 350 or 370 and 450; 360; 430; 460; and enough agricultural economics electives to total 16 hours of course work in the department. A student wishing to declare a minor should consult with an advisor as early as possible to develop the required program.

**Transfer Students**

Students planning to transfer to Washington State University from other institutions should take courses which will meet the 100- and 200-level course requirements in accounting, economics, English, speech, and General Education Requirements in the natural and social sciences. All students planning to major in agribusiness or agricultural economics are encouraged to take intermediate algebra prior to entering Washington State University.

**Preparation for Graduate Study**

Students who plan to do work in agricultural economics beyond the bachelor’s degree should consult their advisers as early as possible to develop study programs directed toward their goals.

**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 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.
Agribusiness Finance 3 Prereq Agctg 230, Ag Ec 201, Math 201, Stat 212. Financial management, decision making, and analysis in the agribusiness sectors; capital market institutions and valuation processes.

Introduction to Farm and Ranch Management 3 Rec Ag Ec 201 or Econ 101. Appraisal, organization, and management of related types of farms and ranches.

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

Introduction to Agribusiness Management 3 Rec Ag Ec 201 or Econ 101. Product combinations, resource allocations, 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), open to WSU students.

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

Mathematics for Economists 3 Same as Math 408.

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.

Decision Analysis for Agricultural Economists 3 Prereq Math 201, 202. Linear programming, transportation models, simulation, and inventory models.

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.

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

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

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.

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.

Advanced Agribusiness Management 3 Rec Agctg course. Ag Ec 360, Math 202. Alternatives in the market behavior of firms that handle, process, and trade in agricultural inputs and outputs.

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.


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

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.

Instructional Practiceum 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.

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

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

Special Problems V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq may be waived by instructor. S, F grading.

Economic Theory I 3 Same as Econ 500.

Economic Theory II Same as Econ 501.

Economic Theory III Same as Econ 502.

Economic Theory IV 3 Same as Econ 503.

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

Applied Statistical Methods in Agricultural Economics 3 Graduate-level counterpart of Ag Ec 409; additional requirements. Credit not granted for both Ag Ec 409 and 509.

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.

Econometrics I 3 Same as Econ 511.

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

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.

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

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.

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

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

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).

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.

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

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

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

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.

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.

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

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

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

Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Agriculture

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 program, 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.

The program offers a broad array of possibilities for doing American culture studies, but among our strengths are: the American West in multicultural perspective; the arts, culture, and social change; culture and environmental studies; mass media, film, and popular culture. Beyond the core requirements listed below, students design their own coordinated track through the major in consultation with American Studies faculty and the Director of the Program.

The undergraduate major is ideal for students who feel their interests cannot be contained within a single discipline, and the minor is useful for students who wish to bring their diverse other classes into a more focused study of the United States. International students may also find the program useful as a way to organize their experience of American culture. The major offers knowledge of the United States culture and critical thinking skills useful for careers in teaching, law, government service, and the non-profit sector, among other areas. For further information, visit www.wsu.edu/~amerstu.

Schedule of Studies

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 REQUIREMENTS (120 HOURS) ✔ FYDA

Freshman Year

First Semester
- Arts & Humanities [H,G] (GER) 3
- Engl 101 [W] (GER) 3
- Gentld 110 [A] (GER) 3
- Math Proficiency [N] (GER) 3
- Elective 3

Second Semester
- Communication Proficiency [C,W] (GER) 3
- Gentld 111 [A] (GER) 3
- Social Sciences [S,K] (GER) 3
- Science Elective (GER) 4
- Elective 3

Sophomore Year

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

Second Semester
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Foreign Language or Elective 4
- Hist 111 3
- Physical Sciences [P] (GER) 4

Junior Year

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

Complete Writing Portfolio

Second Semester
- Hours
- Engl 380, 381, or 382 3
- Major Concentration Area Elective 3
- Electives 6

Senior Year

First Semester
- Hours
- 300-400-level CAC or W St Elective 3
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Intercultural [I,G,K] (GER) 3
- One from: Am St 470, 471, or 472 3
- Elective 4

Second Semester
- Hours
- 300-400-level American Hist Elective 3
- Major Concentration Area Electives 6
- One from: Am St 470, 471, or 472 3
- Tier III Course [T] (GER) 3

Minor in American Studies

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

- Hours
- Am St/Engl/Hist/W St 216 American Culture 3
- Two courses from: Am St/Engl 470, 471, or 472 6
- Two courses in an area of concentration 6
- 300-400-level American literature 3
- 300-400-level American history 3

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 [S,D] American Cultures 3 Introduction to the interdisciplinary study of American cultures and the field of American studies.

275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.
410 [T] Cities in Fiction 3 Prereq completion of one Tier I and three Tier II courses. Exploration of the city as an active agent in the fictional works of North American authors.

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] Cultural Politics Since World War II 3 American popular culture, politics and culture of the 1960s, or topics in recent cultural politics.

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.

473 [T,D] Arts in American Cultures 3 Prereq completion of one Tier I and three Tier II courses. Exploration of visual culture—from fine art to advertising—as a political, sociological, psychological, and philosophical influence in 20th C. American cultures.

475 [T,D] Digital Diversity 3 Prereq junior standing; completion of one Tier I and three Tier II courses. Cultural impact of electronic media, especially the World-Wide Web; issues of race, class, gender, sexuality online.

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

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 I 3 May be repeated for credit; cumulative maximum 6 hours. Readings in key texts in American culture, beginnings 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.

525 Social Movements in American Studies 3 Theoretical and historical study of the role of social movement in United States culture.

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 laboratory 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.

Schedule of Studies

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 OPTION REQUIREMENTS

(FYDA)

Freshman Year

First Semester Hours
A S 101 3
A S 180 1
Chem 101 [P] (GER) 4
Engl 101 [W] (GER) 3
Math 107, 140 [N], 171 [N], 201, or 202 [N] (GER) 3 or 4

58
<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Year</strong></td>
<td></td>
<td><strong>PRE-VETERINARY MEDICINE/SCIENCE</strong></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td><strong>(121 HOURS)</strong></td>
</tr>
<tr>
<td>A S 166, 172, 174, 175, 176, or 178¹</td>
<td>2</td>
<td><strong>FYDA</strong></td>
</tr>
<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
<td><strong>Freshman Year</strong></td>
</tr>
<tr>
<td>Chem 102 [P] (GER)</td>
<td>4</td>
<td>First Semester</td>
</tr>
<tr>
<td>ComSt 102 [C] or H D 205 [C] (GER)</td>
<td>3</td>
<td>A S 101</td>
</tr>
<tr>
<td>GenEd 110 or 111 [A] (GER)</td>
<td>3</td>
<td>A S 180</td>
</tr>
<tr>
<td><strong>Sophomore Year</strong></td>
<td></td>
<td>Chem 105 [P] (GER)</td>
</tr>
<tr>
<td>First Semester</td>
<td>Hours</td>
<td>Engl 101 [W] (GER)</td>
</tr>
<tr>
<td>A S 260, 272, or 360</td>
<td>3</td>
<td>Math 107, 140 [N], 171 [N], 201, or 202 [N] (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
<td>3 or 4</td>
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<tr>
<td>GenEd 110 or 111 [A] (GER)</td>
<td>3</td>
<td><strong>Second Semester</strong></td>
</tr>
<tr>
<td>V MS 361</td>
<td>3</td>
<td>A S 172, 174, 175, or 176¹</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td>Biol 103 [B] (GER)</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
<td>Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>SoilS 201</td>
<td>3</td>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Stat 212 [N] (GER) or 412²</td>
<td>3 or 4</td>
<td><strong>Third Semester</strong></td>
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<td><strong>Junior Year</strong></td>
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<td>A S 313</td>
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<td>First Semester</td>
<td>4</td>
<td><strong>First Semester</strong></td>
</tr>
<tr>
<td>A S 313</td>
<td>4</td>
<td>A S 313</td>
</tr>
<tr>
<td>Acctg 230</td>
<td>3</td>
<td>A S 330</td>
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<tr>
<td>Ag Ec 335 or B Law 210</td>
<td>3</td>
<td>A S 350</td>
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<tr>
<td>CropS 101, 302, 303, or NATRS 351</td>
<td>3</td>
<td>A S 378</td>
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<tr>
<td>Engl 201 [W] (GER)</td>
<td>3</td>
<td>A S 380</td>
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<tr>
<td>Complete Writing Portfolio</td>
<td>1</td>
<td>Elective³</td>
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<tr>
<td><strong>Second Semester</strong></td>
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<td>Complete Writing Portfolio</td>
</tr>
<tr>
<td>A S 314</td>
<td>3</td>
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<tr>
<td>A S 330</td>
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<td>A S 330</td>
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<tr>
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<td><strong>Senior Year</strong></td>
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<td>A S 406 [M]¹</td>
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<td>3-6</td>
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<td>A S 406 [M]¹</td>
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<td><strong>Elective³</strong></td>
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<tr>
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<td></td>
<td><strong>Second Semester</strong></td>
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<tr>
<td>A S 408³</td>
<td>3</td>
<td>A S 408³</td>
</tr>
<tr>
<td>A S 466, 468, 472, 474 [M], 478 [M] or 476³</td>
<td>3</td>
<td>A S 440</td>
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<td>A S 441</td>
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<td>A S 480³</td>
<td>3</td>
<td><strong>Second Semester</strong></td>
</tr>
<tr>
<td>A S 466, 468, 472, 474, 476, or 478²</td>
<td>3</td>
<td>Tier III Course [T] (GER)</td>
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<td>3</td>
<td><strong>Elective³</strong></td>
</tr>
</tbody>
</table>

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

PRODUCTION MANAGEMENT REQUIREMENTS

(121 HOURS)

**Freshman Year**

First Semester

A S 101
A S 166 or 178¹
A S 180

**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)

**Second Semester**

Chem 102 [P] (GER)
GenEd 110 or 111 [A] (GER)

**Senior Year**

First Semester

A S 313
Acctg 230
Engl 402 [W] (GER)
A S 313
A S 330
A S 350
A S 381
A S 351
A S 380
A S 340

**First Semester**

A S 285, 488, CropS 302, 303, or NATRS 351
A S 406 [M]¹
A S 440
A S 454³
Elective³

**Second Semester**

A S 285, 488, CropS 302, 303, or NATRS 351
A S 406 [M]¹
A S 454³
Elective³

**Third Semester**

A S 408³
A S 466, 468, 472, 474 [M], 476, or 478 [M] or 476³
Tier III Course [T] (GER)

**Second Semester**

A S 408³
A S 466, 468, 472, 474 [M], 476 [M] or 476³
Tier III Course [T] (GER)

**Elective³**

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

Department of Animal Sciences
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.

Schedule of Studies

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>
<th>Hours</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>
<td>3 or 4</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER) or GER</td>
<td>3</td>
</tr>
<tr>
<td>Math 107, 171 [N], or GER</td>
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Second Semester

| A S 166, 176, or 178 | 1 |
| Arts and Humanities [H,G] or Intercultural Studies [I,G,K] GER | 3 |
| Biol 103 or 104 [B] (GER) | 4 |
| Chem 106 [P] (GER) | 4 |
| GER | 3 |
| H D 205 [C] (GER) | 3 |

Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 201 [S] (GER)</td>
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<tr>
<td>Biol 104 [B], MBioS 301, or GER</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Chem 240</td>
<td>4</td>
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<td>GenEd 110 [A] (GER)</td>
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<table>
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<tbody>
<tr>
<td>A S 330</td>
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<tr>
<td>A S 350, 351</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Phys 101 [P] (GER)</td>
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<tr>
<td>Stat 212 [N] (GER)</td>
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Third Year

<table>
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<tr>
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<tbody>
<tr>
<td>A S 313</td>
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<tr>
<td>GER</td>
<td>3</td>
</tr>
<tr>
<td>MBioS 303</td>
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<table>
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<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>A S 380</td>
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<tr>
<td>A S 408</td>
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<tr>
<td>A S 466, 474, or 476</td>
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<tr>
<td>A S 485</td>
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<tr>
<td>Ag Ec 340</td>
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<tr>
<td>GER</td>
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</table>

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

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

A S 101 Introductory Animal Science 3 (2-3) Types and breeds of livestock, terminology, methods, management systems, techniques of animal and poultry production and consumer impact. Credit not granted for both A S 101 and 103.

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

205 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 Zoonotic Diseases 2 Biology of infectious diseases of animals transmissible to humans.


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).
285 Rights and Welfare of Animals 3 Prereq Biol 102 or 103. Ethical considerations and welfare of animals used as companions, for food, and in scientific research. Cooperative course taught by WSU, open to UI students (AVS 204).

301 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; Chem 240. Digestion, absorption, metabolism, and function of nutrients. Cooperative course taught jointly by WSU and UI (AVS 307).

330 Animal Genetics 3 (2-3) Prereq Stat 212. Basic genetic concepts and methods for the genetic improvement of Mendelian and polygenic traits in animals. Cooperative course taught by WSU, open to UI students (AVS 330).

345 Introduction to Animal Growth and Development 3 Prereq A S 101, Biol 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/atrophy; muscle-specific proteins. Cooperative course taught by WSU, open to UI students (AVS 316).

350 Physiology of Reproduction 3 Prereq Biol 103 or 104; Chem 102 or 106. Anatomy and physiology of reproductive organs; hormones of reproduction; production of gametes; artificial insemination; fertilization; prenatal development; fertility and infertility. Cooperative course taught jointly by WSU and UI (AVS 452).

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

360 Meat Science 3 (2-3) Prereq Biol 104. Anatomy, slaughter, classification, and processing of meat animals and species. Special clothing and equipment required.

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.

401 Topics - Study Abroad V 1-12 Animal sciences study abroad.


428 Topics in Animal Breeding 2 May be repeated for credit; cumulative maximum 4 hours. Prereq A S 330. Systems of selection and mating for genetic improvement in farm animals. Credit not granted for both A S 428 and 528.

430 Topics in Meat Science and Muscle Physiology 1 Prereq A S 306, 360. Readings, discussions, seminars, lectures, and laboratory instruction and laboratory instruction. 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 c/. Measurement and in the laboratory of functional processes in domestic animals.

443 Case Studies in Animal Science 1 May be repeated for credit; cumulative maximum 3 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 315).

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 secretion 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).


474 [M] Beef Cattle Production 3 (2-3) Prereq A S 313, 330, 350. Breeding, feeding, and management; commercial and purebred enterprises; management of beef cattle on ranges, pastures and in the feedlot. Field trip required. Cooperative course taught jointly by WSU and UI (AVS 474).

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

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

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 488; MBioS 303. Advanced topics in metabolic regulation of carbohydrate, fat and amino acid use by animals. Cooperative course taught by WSU, open to UI students (AVS 507).

508 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 polysaccaride, and digestion and utilization of nutrients. Cooperative course taught by WSU, open to UI students (AVS 510).
Department of Animal Sciences

513 Mineral and Vitamin Metabolism 4 Prereq A S 406 or 408; MBioS 303. Absorption, excretion, metabolism, dietary requirements and interactions of minerals and vitamins in animals and humans. Cooperative course taught by WSU, open to UI students (AVS 513).

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

528 Topics in Animal Breeding 2 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 520).

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

550 Advanced Reproduction 4 (3-3) Prereq A S 350. Physiology of sexual maturation; gametogenesis; sexual cycle; fertilization; embryonic development; physiological, chemical and immunological characterization of hormones of reproduction. Cooperative course taught by WSU, open to UI students (AVS 551).

551 Endocrine Physiology 3 Graduate-level counterpart of A S 451; additional requirements. Credit not granted for both AS 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 529.

560 Domestic Animal Growth 2 Prereq A S 406, 408, or 440; 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 3 (1-6) 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


The curriculum includes courses in the four major subfields of anthropology: archaeology, cultural/social anthropology, linguistic anthropology, 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 specialties 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.

Schedule of Studies

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, 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 two supporting fields.

ANTHROPOLOGY REQUIREMENTS (120 HOURS)

First Year

Freshman Year

First Semester

Anth 203 3
Engl 101 [W] (GER) 3
Foreign Language, if necessary, or Elective1 3 or 4
GenEd 110 [A] (GER) 3
Science Elective (GER) 4

Second Semester

Anth 260 3
Biological Sciences [B] (GER) 4
Communication [C,W] (GER) 3
Foreign Language, if necessary, or Elective1 3 or 4
GenEd 111 [A] (GER) 3

Sophomore Year

First Semester

Anth 230 3
Math Proficiency [N] (GER) 3 or 4
Physical Sciences [P] (GER) 4
Social Sciences [S,K] (GER) 3

Second Semester


Junior Year

First Semester

Arts & Humanities [H,Lk], Intercultural [I,Lk,G], or Social Sciences [S,K] (GER) 6
Biological Anth Elective1 3
Cultural Anth Elective1 3
Intercultural [I,Lk,G] (GER) 3

Second Semester

Arts & Humanities [H,Lk], Intercultural [I,Lk,G], or Social Sciences [S,K] (GER) 6
Complete Writing Portfolio

Senior Year

First Semester

Anth Electives1 3
Consider study abroad or summer field school

Second Semester

Anth 300-400-level Electives4 9

Electives 4 6
Some anthropology courses may be taken in either fall or spring in a given year. Refer to the time schedule and your advisor.  

1 Two years of one foreign language from high school or one year at college required.  
2 Math 212 preferred.  
4 Concentrating electives beginning in the junior year in one subdivision of anthropology or in a minor discipline in consultation with the advisor is recommended.  
5 Take three classes from the four subdisciplines.  

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, 200, 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  

Anth 401 [M], 403 [M], 405 [M], 430 [M], or 468 [M]  
3

Linguistic Anth Elective  
3

Second Semester  

Hours  
300-400-level Electives  
9

Anth 490 [M]  
3

Tier III Course [T] (GER)  
3

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, 200, 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  

Anth 101 [K] General Anthropology  
3 Major subfields of anthropology; physical (human evolution and race), cultural-social, archaeology, and linguistics.  

130 [I] Great Discoveries in Archaeology  
3 Impact of great archaeological discoveries and the work of archaeologists on our sense of the past.  

198 [K] Anthropology Honors  
3 Open only to students in the Honors College.  

201 [G] Art and Society  
3 Art as an expression of social and cultural systems in non-Western societies.  

203 [K] Peoples of the World  
3 Principles of cultural anthropology through study of various ethnic groups from different parts of the world.  

214 [S,D] Gender and Culture in America  
3 Exploration or variation in gender roles, relationships, values, and institutions among men and women in U.S. ethnic and other subcultures.  

230 Introduction to Archaeology  
3 Development of a dynamic picture of past human behavior from prehistoric 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.  

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

300 Field Methods  
V 2-8 Prereq permission by application. Practice in methods of archaeological, ethnological, or linguistic field research.  

301 [G] Arts and Media in Global Perspective  
3 Contemporary arts and media around the world, and their impact on identity, society, and culture.  

302 [K,M] Childhood and Culture  
3 Anthropological theory and methods applied to the study of infant, child, and adolescent development.  

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.  

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

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 Archaeologically reconstructed environments and cultures of Washington including contemporary scientific and social issues; for majors and nonmajors.  

336 Old World Civilizations  

350 [S] Speech, Thought and Culture  
3 The role of language in social situations and as a reflection of cultural differences.  

355 Language in History  
3 Writing systems, language in reconstruction of culture history, language families, evolution, and parallels.  

370 Past Environments and Culture  
3 People and their environments from the Ice Age to modern time; archaeological, ecological, and biological data.  

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

401 [M] History of Anthropological Theory  
3 Prereq 6 hours Anth. Development of theories in cultural anthropology; contributions of specific individuals; representative classics. Credit not granted for both Anth 401 and 501.  

402 Cross-cultural Gender and Kinship  

404 [T] The Self in Culture  
3 Prereq Anth 101, 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,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.  

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; varieties 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).

467 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,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.

469 [T] Genes, Culture and Human Diversity 3 Prereq completion of one Tier I and three Tier II courses. Relationships between genes, language and culture are explored as a means to understanding world history, genetic and cultural diversity and unity.

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


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 nongovernmental organizations or independent field projects supervised by Ecuadorian anthropologists. Taught in Ecuador.

498 Anthropology Internship V 1-15 Prereq junior or senior standing. May be repeated for credit; cumulative maximum 30. Participation as archaeological or cultural anthropological intern in public or private sectors; requires special arrangement with faculty advisor. S, F grading.

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

500 Field 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.

511 Lithic Technological Organization 3 (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 Archaeological Method and Theory 3 History of archaeological method and theory; theoretical and methodological contexts of archaeological work.

535 Cultural Resource Management 3 Prereq standing. Role of archaeology in historic preservation and resource conservation; legal and institutional frameworks; research and interpretation in a CRM context. Cooperative course taught by WSU, open to UI students (Anth 535).

536 Ethnoarchaeology 3 Graduate-level counterpart of Anth 436; additional requirements. Credit not granted for both Anth 436 and 536.

537 Quantitative Methods in Anthropology 4 (3-3) Prereq 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 Northwest Coast 3 Prehistory of cultures, chronologies, and interrelationships and interaction of cultures 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 Anthropological 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 (J451/J551).

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-formation 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 F Ents Publishing and Professional Communication 3 Preparation of original research reports; survey of types of professional communication, and of standards and techniques.
APPAREL, MERCHANDISING, AND TEXTILES

The Apparel, Merchandising, and Textiles program has no peers in the state when considering the range and depth of programs at the undergraduate and graduate levels. The Washington textile and apparel industry is global, massive, multi-faceted and in close competition with California for level of productivity and profit. The apparel and textile industry is the fifth largest industry in the state of Washington. Apparel, Merchandising, and Textiles graduates are thoroughly prepared for exciting and challenging careers in the textile and apparel industry through our active study abroad program. Internships provide a competitive edge and yield higher-level positions upon graduation as well as significantly better entry salaries.

Schedule of Studies

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 apparel design, merchandising, and textile design degree programs must be in 300-400-level courses. Courses required in these programs cannot be taken on a pass, fail basis. In order to be certified into the programs, students must have a 2.5 g.p.a.

Second Semester

Apparel Design Electives1 6
F A 102 3
FSHN 130 [B] (GER) recommended 3
GenEd 111 [A] (GER) 3
Stat 212 [N] (GER) 4

Sophomore Year

First Semester

Hours
AMT 215 4
AMT 220 3
Ag Ec 201 [S] or Econ 101 [S] (GER) 3
F A 110 3
Physical Sciences [P] (GER)2 3 or 4

Second Semester

Hours
AMT 208 3
AMT 216 3
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER)3 3 or 4
Intercultural [I,G,R] (GER) 3

Junior Year

First Semester

Hours
AMT 311 3
AMT 314 [M] 3
AMT 315 3
AMT 417 [M] 3
Mktg 360 3

Second Semester

Hours
AMT 316 3
AMT 318 3
AMT 420 [M] 3
AMT 492 3
Apparel Design Electives1 3

Senior Year

First Semester

Hours
AMT 410 3
AMT 490 or AMT/I D Electives1 7
Mgt 301 3
Tier III Course [T] (GER) 3

Second Semester

Hours
AMT 412 3
AMT 413 [M] 3
Apparel Design Electives1 6

1 Apparel Design Electives: F A 111; 303 or 304; 313, 331, 332, 380; Theat 163, 264, 368; or up to 11 credits of general electives.
2 For a total of 7 credits of Biological and Physical Science electives.
3 AMT/I D Electives: AMT 320, 321, 322, 419, 428, 491, 495, 496, 498, 499; I D 250, 350; apparel or interior design transfer courses as approved by department.

APPAREL DESIGN REQUIREMENTS (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
Soc 101 [S] or Psych 105 [S] (GER) recommended 3

Second Semester

Hours
Apparel Design Electives1 6
F A 102 3
FSHN 130 [B] (GER) recommended 3
GenEd 111 [A] (GER) 3
Stat 212 [N] (GER) 4

Sophomore Year

First Semester

Hours
AMT 215 4
AMT 220 3
Ag Ec 201 [S] or Econ 101 [S] (GER) 3
F A 110 3
Physical Sciences [P] (GER)2 3 or 4

Second Semester

Hours
AMT 208 3
AMT 216 3
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER)3 3 or 4
Intercultural [I,G,R] (GER) 3

Junior Year

First Semester

Hours
AMT 311 3
AMT 314 [M] 3
AMT 315 3
AMT 417 [M] 3
Mktg 360 3

Second Semester

Hours
AMT 316 3
AMT 318 3
AMT 420 [M] 3
AMT 492 3
Apparel Design Electives1 3

Senior Year

First Semester

Hours
AMT 410 3
AMT 490 or AMT/I D Electives1 7
Mgt 301 3
Tier III Course [T] (GER) 3

Second Semester

Hours
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AMT 413 [M] 3
Apparel Design Electives1 6

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### Freshman Year

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<td>361</td>
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<tr>
<td>101, 102, 103</td>
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<td>104, 105</td>
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For a minor in Apparel, Merchandising, and Textiles, students must complete 18 hours in AMID that include AMT 215 and 314. Contact the department advisor to assist in selection of AMT courses. Students must earn a C or better to transfer the credit for a required course as well as to claim the minor.

### Sophomore Year

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<tr>
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<td>203</td>
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### Junior Year

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<th>First Semester</th>
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### Senior Year

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<th>First Semester</th>
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### Preparation for Graduate Study

Normally the applicant for graduate study should have a good record in related fields and be well prepared for certain areas of advanced study. Students from related disciplines are required to take some courses required of undergraduate majors in these fields. Please refer to WSU Graduate catalog and web site at [www.wsu.edu/8080/gradsch/](http://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. Beginning Fall 2000, qualified students may choose to enter an articulated B.A./M.A. degree program within the senior year that leads to a master's degree completed in the first year of graduate study.

Students wishing to certify into the Interior Design program must complete a minimum of 45 semester hours including the following six courses: Arch 101, 103, 104, 105; ID 101, 203; or transfer equivalents as approved by the department. The successful completion of a portfolio review is required upon completion of ID 203 to become a certified major in Interior Design. The review is set up as an interview process between each student and a faculty panel. During the interview, students are expected to present completed projects and explain, defend, and justify their design solutions to the faculty.

Students complete their final year at WSU Spokane at the Interdisciplinary Design Institute. The institute represents a unique collaboration among the design disciplines with students and faculty from interior design, architecture, construction management, and landscape architecture working and learning together in a team-oriented, urban environment. As graduates, students have the ability to take the initiative, make critical judgments of their own designs, as well as others, and operate within a team context, all of which contributes to their future success as professionals.

### TEXTILE DESIGN REQUIREMENTS

**DEGREE REQUIREMENTS**

- **Second Semester**
  - 360  | 3 |
  - 361  | 3 |
  - 101, 102, 103 | 3 |
  - 104, 105 | 3 |

### Major in Apparel, Merchandising, and Textiles

For a minor in apparel, merchandising, and textiles, the student must complete 18 credits in AMID that include AMT 215 and 314. Contact the department office in Kruegel Hall, Room 51, for assignment of advisor to assist in selection of AMT courses.

### Minor in Apparel, Merchandising, and Textiles

For a minor in apparel, merchandising, and textiles, the student must complete 18 credits in AMID that include AMT 215 and 314. Contact the department office in Kruegel 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 as well as to claim the minor.

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### TEXTILE DESIGN REQUIREMENTS

**DEGREE REQUIREMENTS**

- **Second Semester**
  - 360  | 3 |
  - 361  | 3 |
  - 101, 102, 103 | 3 |
  - 104, 105 | 3 |

### Major in Apparel, Merchandising, and Textiles

For a minor in apparel, merchandising, and textiles, the student must complete 18 credits in AMID that include AMT 215 and 314. Contact the department office in Kruegel 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 as well as to claim the minor.

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Senior Year--Spokane

First Semester
- Arch 472
- I D 415
- I D 425
- Supportive Electives\(^1\)
- Tier III Course [T] (GER) 3

Second Semester
- I D 392
- I D 426
- I D 460
- I D 490\(^1\) or support elective

\(^1\) Math 205 or 210 is suggested.
\(^2\) F A 201, 202, Arch 220, 221 are suggested.
\(^3\) Students must take 3 credits of [B] science and 3 credits of [P] science and a 1 credit lab. The other 3 credits to satisfy the GER requirements can be [B, P, or Q].

\(^4\) Portfolio review takes place after completion of this course.

\(^5\) Supportive Electives: Approved by Faculty Advisor; transfer interior design hours as approved by the department.

\(^6\) Highly recommended as a Summer option between Junior and Senior year.

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.

208 Visual Merchandising and Promotion 3 (2-2) Examination of fashion promotion components of visual display store layout, fashion show, and fashion forecasting. Cooperative course jointly taught by W SU and UI (FCS WS208).


216 Fashion Product Development 3 (0-6) Problem solving approach to apparel and textile product development with emphasis on product development process.

220 Historic Costumes and Textiles 3 Historical survey of western dress and textiles from prehistoric to mid-1800s.

311 Draping and Flat Pattern 3 (0-6) Prereq AMT 216. Introductory draping, drafting, and flat pattern techniques for apparel design; emphasis on understanding when each technique is the best choice.

314 [M] Fashion Forecast 3 (2-2) Influences on acceptance or rejection of apparel/textile products; impact of socio-economic conditions, technology, public policy, and change on consumer behavior.


316 Advanced Patternmaking 3 (0-6) Prereq AMT 216, 311. Advanced level exploration of draping and flat pattern techniques; emphasis on computer aided patternmaking, industry level practices, and a full range of fashion designs.

318 Merchandising and Mathematics 3 (2-2) Prereq AMT 314, Ag Ec 210, Econ GER, and Math GER or by permission. 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 jointly by WSU and UI (Art 214).

321 Textile Design II 3 (0-6) Prereq Art core, AMT 320, or by permission. Development of conceptual and technical abilities in the textile arts with an emphasis on individual expression and designing for industry. Cooperative course taught by UI (Art 215), open to W SU students.

322 Textile Design III 3 (0-6) Prereq art core, AMT 320, or permission. May be repeated for credit; cumulative maximum 6 hours. Development of conceptual and technical abilities in the textile arts with emphasis on computer-aided design and designing for industry. Cooperative course taught by UI (Art 315), open to W SU students.

410 Advanced Assembly Techniques 3 (0-6) Prereq AMT 315, 311, 316. Advanced assembly techniques for a range of textiles and multi-layer garments; emphasis of high-quality execution of final products.

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] Multicultural Perspectives on the Body and 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 (HEc 417).
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 S90 or c/c; 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

I D 101 Design Issues 3 Sensory awareness as a design determinant; introduction to basic design elements in problem identification and solving processes.

102 Basic Environmental Design Studio 3 (0-6) Prereq I D 101. Application of basic design elements to the exploration of space and form. Credit not granted for both I D 102 and I D 200.

103 Transfer Studio 6 (3-6) An intensive studio introducing basic elements and principles of design; basic technical skills (drafting, sketching, rendering, model building).

201 Perception and Communication I Laboratory 4 (1-9) Prereq Arch 101, 103; I D 101, 102, or 103 c/c. Application of design concepts into micro environments; design vocabulary and skill development.

202 [H] The Built Environment 3 Same as Arch 202.


205 Visual Communication 3 (2-2) Course focuses on the various methods in which the interior designer may choose to visually communicate design concepts.

211 History of Design I 3 Prereq I D 211 or by permission only. History of design forms, interiors and furnishings from prehistoric to the Industrial Revolution.

215 Materials and Components of Interior Design 3 Characteristics and properties of structural and non-structural interior materials.

250 [H] History of Interiors 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 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. Intensive and concentrated experience in design of interior spaces from abstraction and concept to complex interiors of larger scale.

311 [M] History of Design II 3 History of design forms, interiors and furnishings from the Industrial Revolution through the 20th century.

312 Interior Design Theory 2 Prereq I D 321. Theory, principles, and determinants of interior design applied to current practice.

321 Fundamentals of Planning and Design I 4 (1-9) Prereq I D 203. Design investigations of space of specified size and complexity for people of varying social, economic, and cultural backgrounds.

322 Interior Programming 1 Prereq I D 203, c/c in I D 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 sector.

350 [H] History of Interiors II 3 A survey of interior environments, spatial distributions, furnishings, and related design elements in the 19th and 20th centuries.

392 [M] Professional Procedures 3 Business practices and procedures as related to interior design; contract documentation and specification writing.

396 Beginning Computer Applications for Interior Design 3 (0-6) Prereq I D 201. Design problem solving using the computer as a tool.

397 Computer Applications for Interior Design 2 (0-4) Prereq I D 396. Continuation of I D 396 with a focus on enhancing 2D skills and introducing 3D modeling techniques.

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.

498 Special Topics in Interior Design V 1-3 May be repeated for credit; cumulative maximum 6 hours.

499 Special Problems V 1-4 May be repeated for credit; cumulative maximum 4 hours. F, graduation.

525 Interior Design Graduate Studio II 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.

594 Readings in Interior Design 3 Prereq graduating. Exploration of current topics through readings in interior design.

597 Advanced Design Theory 3 Prereq I D 425. Environmental and product design theory and development.

598 Topics In Interior Design V 1-3 May be repeated for credit; cumulative maximum 6 hours.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

School of Architecture and Construction Management


Architecture

The School of Architecture and Construction Management offers courses of study leading to two baccalaureate degrees. These are Bachelor of Science in Construction Management and Bachelor of Science in Architectural Studies.

The School offers as its professional degree the Master of Architecture. This degree is the professional degree accredited by the National Architectural Accrediting Board (NAAB) which allows students to take state exams and become licensed.

Students must successfully complete a four-year undergraduate degree in architecture or a previous five-year Bachelor of Architecture degree in order to be eligible for the Master of Architecture. Please consult the WSU Graduate Catalog for specific information regarding this degree as well as admission requirements and course descriptions.

The School of Architecture and Construction Management also offers a post-professional course of study leading to a Master of Science in Architecture. This degree is available at the Pullman and Spokane campuses. It should be noted that this degree is not a professional accredited degree.

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. As stated above WSU offers the Master of Architecture as the professional accredited degree. These professional degrees are structured to educate those who aspire to registration and licensure to practice as architects.

The four-year, pre-professional degree at WSU is not accredited by NAAB. This degree is useful to those wishing 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 the built environment. They may work as independent practitioners, for large corporate firms or for governmental organizations. 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 architecture curriculum is planned so that foreign study and other off-campus programs can be incorporated in the fourth year of study. Options include a semester overseas during the spring semester as well as a year of study at the WSU Spokane campus. Foreign studies options include WSU sponsored programs, as well as programs offered by other institutions. Students in Spokane study interdisciplinary issues with students majoring in construction management, interior design and landscape architecture. Foreign studies options are available to both Pullman and Spokane students.

Construction Management

The construction manager is expected to understand a wide variety of structures that make up the built environment. This awareness includes properties of materials and construction systems and how they are utilized to produce buildings. Students in this program are 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 this breadth of understanding. Construction management students spend their fifth year of study at the WSU branch campus. The Bachelor of Science in Construction Management degree program is accredited by the American Council for Construction Education.

The School of Architecture and Construction Management is a member of the Association of Collegiate Schools of Architecture and the Associated Schools of Construction. Student chapters of the American Institute of Architects and the Associated General Contractors provide linkages with their professional counterparts.

General Requirements - B.S. in Architectural Studies

1. Due to limitations of space and faculty, enrollment in second-year courses and certification as a major in architecture can be granted to only the most qualified students. Prospective applicants for these programs are responsible for familiarizing themselves with the school's requirements and procedures.

2. Students who wish to transfer from another institution may find it possible to take some or all of the first two years of coursework at other institutions. Please consult the WSU Transfer Guide and contact the School of Architecture and Construction Management for information regarding transferring to WSU from other institutions.

3. Transfer students and former WSU students must submit an application for admission to the university, a supplemental application, and current academic records to the School by the dates listed in this bulletin.

4. Students transferring from another institution into the second year of architecture must submit a portfolio in order for the School to evaluate their potential for success in the program. Contact the School for portfolio requirements.

5. A student may not enroll in 300- or 400-level Arch courses without being certified as a major in architecture.

6. A student may not take courses required by the School on a pass, fail basis.

Schedule of Studies

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 GErs.

BACHELOR OF SCIENCE IN ARCHITECTURAL STUDIES (120 HOURS) \(\text{FYDA}\)

The Bachelor of Science in Architectural Studies is a program primarily for those who want a foundation in the study of architecture. This degree was designed for students who want to work in an architecturally related discipline such as planning, technology, project and community development or within government agencies. This degree may also be used as a preparation for professional, accredited graduate education. Students who pursue this option at WSU must complete all university requirements in addition to School requirements listed below.

Pre-Architecture

Students who enter WSU and have an interest in architecture will be assigned an advisor in the School of Architecture and Construction Management.

Freshman Year

**First Semester**
- Arch 101 3
- Communication Proficiency [C,W] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 107, if necessary, or Electives 3

**Second Semester**
- Arch 103 3
- Arch 202 3
- F-A GER Elective\(^1\) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 171 [N] or 206 [N] (GER)\(^2\) 3 or 4

\(^1\) 3 hours of Fine Arts Electives are required. Fine Arts GErs will fulfill this requirement.

\(^2\) Students who are not adequately prepared for Math 171 or 206 should take Math 107 as needed during the fall semester of their first year. All freshmen must take the math placement exam.

Certified Program

The School of Architecture and Construction Management accepts 60 students into the second year. WSU students who wish to enroll in second year must submit an application to the School of Architecture and Construction Management during the 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 evidence of their architectural graphic and design work for review by the Admissions Committee. Most of the students will be selected at the end of the WSU spring semester but some positions will be held open until summer for transfer students.

Transfer Students

Students who wish to transfer into the second year must demonstrate equivalency course work from another institution. Transfer students must make application to Washington State University, the School of Architecture and Construction Management, and submit a portfolio of design work (see schedule below). Transfer students will be evaluated based upon grades from coursework that is equivalent to first year requirements at WSU. Portfolios will be judged relative to content that is equated to Architecture 101 and 103.

Application/Portfolio/Notification Deadlines:
- May 1 All second-year applications due.
- May 1 Portfolios due from applicants who did not complete Arch 101, 103, 201, 202, 203 at WSU.
- June 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.

WSU Spokane

As part of the WSU branch campus system, the School sends 15 fourth- and 1/3 of the graduate students to Spokane. Upon application to the second year, students are given the option of selecting either Pullman or Spokane for their fourth year of 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 second year, acceptance letter students will be notified as to whether they will spend their fourth year in Pullman or Spokane. By accepting admission to the second year, students also accept the conditions of their place of study during the fourth year. Selection of graduate students to either Pullman or Spokane will be made at the time of acceptance to the Graduate School.

NOTE:
- Students offered positions in the second-year courses must promptly notify the School of their acceptance of the position or the next alternate will be offered the position.
- Students that are admitted must be registered for the fall semester and attend the first day of classes or lose their position.

Sophomore Year

**First Semester**
- Arch 201 3
- Arch 220 3
- Arch 330 3
- Intercultural [J,G,K] (GER) 3
- Phys 101 [P] or 201 [P] (GER) 4

**Second Semester**
- Arch 203 3
- Arch 209 1
- Biological Sciences [B] (GER) 3 or 4
- Physical Sciences [P] (GER)\(^3\) 3 or 4
- Social [S,K] Sciences (GER) 3

### Junior Year

**First Semester**
- Arch 301 5
- Arch 324 [M] 2
- Arch 351 3
- Arch 353 1
- Arch 432 3
- Complete Writing Portfolio

**Second Semester**
- Arch 303 5
- Arch 309 2
- Arch 352 3
- Arch 354 1
- Arch 433 3

**Senior Year**

**First Semester**
- Arch 403 5
- Arch 409 2
- Arch Emphasis Electives [M]\(^4\) 8

1 At least 3 hours of Physical Science Electives from the school's approved list are required for graduation.

2 At least 8 hours of Architectural Emphasis Electives from the school's approved list are required for graduation, and must include two (M) courses.

BACHELOR OF SCIENCE IN CONSTRUCTION MANAGEMENT (150 HOURS) \(\text{FYDA (5-YEAR AGREEMENT)}\)

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.

FYDA (5-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.
PRECONSTRUCTION MANAGEMENT

Freshman Year

First Semester
- Arch 101: 3
- Engl 101 [W] (GER): 3
- GenEd 110 [A] (GER): 3
- Geol 101 [P] (GER): 4
- Intercultural [I,G,K] (GER): 3

Second Semester
- Arts & Humanities [H,G] (GER): 3
- Biological Sciences [B] (GER): 3 or 4
- Econ 101 [S] (GER): 3
- GenEd 111 [A] (GER): 3
- Math 171 [N] or 206 [N] (GER): 3 or 4

Sophomore Year

First Semester
- Acctg 230: 3
- B Law 210: 3
- Econ 102 [S] (GER): 3
- Phys 101 [P] or 201 [P] (GER): 4

Second Semester
- Acctg 231: 3
- Cpt S 105: 4
- Dec S 215: 4
- Math 201: 3

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. Qualified students will be certified at this time and allowed to take 300-400-level coursework as well as construction management courses. This limitation is imposed because of limited space, equipment, and faculty resources. Students may transfer to the school during the two-year preconstruction program or apply directly for third-year certification.

Applications Requirements and Deadlines:
Grade records for transfer students for the semester or quarter must be available to the Construction Management Coordinator before July 1.

Third-Year Admission:
Every year a maximum of 30 students will be certified. Students will be 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 recommendation to the School of Architecture’s Admissions and Academic Affairs Committee regarding applicants. Selection will be made on or about June 15; all applicants will be notified of their status by letter mailed from the School.

Course and 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.
- 5. Maintain an overall minimum g.p.a. of 2.5.

CONSTRUCTION MANAGEMENT REQUIREMENTS

Junior Year

First Semester
- Arch 330: 2
- Arch 351: 3
- Arch 432: 3
- C E 301: 3
- Cst M 201: 2
- E 805: 3
- Complete Writing Portfolio

Second Semester
- Arch 331: 2
- Arch 352: 3
- Arch 433: 3
- Cst M 435: 3
- Fin 325: 3
- Business Ad. Elective
- Cst M 201: 2
- E 805: 3

Senior Year

First Semester
- Arch 332: 3
- Arch 461: 3
- Cst M 470: 3
- Business Ad. Electives
- Cst M 442 [M]: 3
- Cst M 455: 3
- Cst M 456: 4

Second Semester
- Arch 462: 3
- Cst M 442 [M]: 3
- Cst M 455: 3
- Cst M 456: 4

Fifth Year (WSU Spokane)

First Semester
- Cst M 451 [M]: 3
- Cst M 452: 3
- Cst M 457: 4
- Cst M 471: 3
- Business Ad. Elective

Second Semester
- Arch 451: 2
- Arch 490 or 491: 2
- Cst M 495: 3
- Cst M 499: 2
- Tier III Course [T] (GER): 3

1 Consult your advisor.

Description of Courses

Architecture

Arch

101 Graphics Communication (1-6) Drawing to perceive three-dimensional space; freehand (architectural) drawing, drafting, isometric and orthographic drawing; perspective, shades and shadows, lettering, and rendering techniques.

103 Visual Design (3-6) Prereq Arch 101. Two- and three-dimensional design and spatial studies; abstract studies in form, color and texture; introduction to architectural design processes.

120 Innovation in Design 2 Same as M E 120.

201 Architectural Design I (3-6) Prereq Arch 103, c/ in Arch 207. Introduction to architectural design focusing on cultural/symbolic issues.

202 [H] The Built Environment 3 Design and planning of the built environment: products, interiors, structures, landscapes, cities, regions, earth; human-environmental interactions, sustainability, and quality.

203 Architectural Design II 3 (0-6) Prereq Arch 201, c/ in Arch 209. Introduction to architectural design as influenced by building technology, buildings and systems.

209 Design Theory I 3 Prereq c/ in Arch 203. Design theory relating to building technology, systems and crafts which influence design decisions.

220 [H] Architectural History I 3 Historic development of world architecture from prehistoric to late medieval; social, technical and scientific influences.

221 [H] Architectural History II 3 Development of American architecture; cave dwellings, native American architecture, colonial styles to contemporary architecture; effects of European styles upon America.

301 Architectural Design III 5 (0-10) Prereq certi- fied Arch major; c/ in Arch 307. Introduction of architectural design focusing on environmental and social issues.

303 Architectural Design IV 5 (0-10) Prereq Arch 301; c/ in Arch 309. Continuation of study of architectural design/form as influenced by cultural, spiritual and symbolic issues.

309 Design Theory II 2 Prereq c/ in Arch 303. Continuation of design theory relating to cultural/symbolic issues which influence design decisions.

324 [M] Renaissance to Baroque Architecture 2 Western architecture from the Renaissance to Baroque to pioneers of modern architecture.

330 Materials and Construction I 3 Prereq second-year architecture student. Wood, steel, concrete, and masonry systems materials; introduction of materials related to building systems; frame bearing wall and roof systems.

332 Materials and Construction II 3 (2-2) Prereq major in Arch or Cst M. Theory and application of various construction systems and material applications explored through drawing.

341 Computers in Architecture 2 (1-3) Prereq certified major in Arch or Cst M. Introduction to computers, terminology, and software applications, applicable to the field of architecture.
### School of Architecture and Construction Management

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>351</td>
<td>Architectural Structures I</td>
<td>3 Prereq major in Arch or Cst M. Introduction to statics and mechanics; analysis and design of statically determinate architectural structures using timber, steel, and reinforced concrete systems.</td>
</tr>
<tr>
<td>352</td>
<td>Architectural Structures II</td>
<td>3 Prereq Arch 351. Continuation of Arch 351.</td>
</tr>
<tr>
<td>353</td>
<td>Structures Studio I</td>
<td>1 (0-2) Prereq Arch 351 or c/. Design principles of architectural structures systems; available systems for spanning and enclosing architectural space.</td>
</tr>
<tr>
<td>354</td>
<td>Structures Studio II</td>
<td>1 (0-2) Prereq Arch 352 or c/. Continuation of Arch 353.</td>
</tr>
<tr>
<td>386</td>
<td>Reading Examination</td>
<td>V 1-3 Prereq major in Arch or Cst M. Examination of summer reading from lists prepared by the school.</td>
</tr>
<tr>
<td>401</td>
<td>Architectural Design V</td>
<td>5 (0-10) Prereq Arch 303; c// in Arch 407. Advanced architectural design focusing on technology, systems and crafts of building systems.</td>
</tr>
<tr>
<td>402</td>
<td>Architectural Design VI</td>
<td>5 (0-10) Prereq Arch 401; c// in Arch 409. Advanced study of architectural design/form as influenced by social and environmental issues applied to large-scale developments.</td>
</tr>
<tr>
<td>409</td>
<td>Design Theory III</td>
<td>3 Prereq Arch 401, c// in Arch 403. Advanced design theory relating to social and environmental issues which influence housing design for the urban environment.</td>
</tr>
<tr>
<td>411</td>
<td>Architectural Design VII</td>
<td>6 (0-12) Prereq Arch 403. Comprehensive building design incorporating programming, space planning, interiors, site planning and landscaping.</td>
</tr>
<tr>
<td>413</td>
<td>Architectural Design Thesis</td>
<td>6 (0-12) Prereq Arch 411, 415. In-depth study of architectural design problems; thesis relating to architectural project selected by student and approved by faculty.</td>
</tr>
<tr>
<td>425</td>
<td>Architectural Theory I</td>
<td>2 Architectural criticism and theory as viewed from contemporary and historical precedents.</td>
</tr>
<tr>
<td>426</td>
<td>Architectural Theory II</td>
<td>2 Continuation and expansion of Arch 425 including applications to design concepts and methodologies.</td>
</tr>
<tr>
<td>427</td>
<td>Site and Landscape Design</td>
<td>3 (1-4) Prereq Arch 203. Exploration of issues and development of skills relative to site and landscape design.</td>
</tr>
<tr>
<td>428</td>
<td>[T] Architecture and Culture in the Islamic World</td>
<td>3 Prereq completion of one Tier I and three Tier II courses. A thematic course exploring the relationship between architecture and culture in the context of Islamic civilization.</td>
</tr>
<tr>
<td>432</td>
<td>Environmental Control of Buildings I</td>
<td>3 Mechanical systems for buildings; building heating, ventilating, and air conditioning systems, heat flow concepts.</td>
</tr>
<tr>
<td>433</td>
<td>Environmental Control of Buildings II</td>
<td>3 Prereq Arch 432. Water supply, drainage, electrical and lighting systems for buildings.</td>
</tr>
<tr>
<td>436</td>
<td>Contemporary Furniture Design I</td>
<td>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.</td>
</tr>
<tr>
<td>438</td>
<td>Energy, Design and Computers</td>
<td>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.</td>
</tr>
<tr>
<td>439</td>
<td>Lighting Design</td>
<td>3 Prereq Arch 432. Engineering and aesthetics of lighting design for buildings; case studies, field trip, studio design exercises.</td>
</tr>
<tr>
<td>442</td>
<td>M Theory of Urban Design and Development I</td>
<td>3 Prereq major in Arch. Cst M. Business or public administration. History, principles and theories of the physical design and development of cities.</td>
</tr>
<tr>
<td>446</td>
<td>Architectural Animation</td>
<td>3 (1-4) Prereq certified Arch major, Cpt 5121 or 205. Introduction to computer animation production, building simulation and related CAD modeling techniques.</td>
</tr>
<tr>
<td>451</td>
<td>Computer-aided Design I</td>
<td>3 (2-2) Prereq basic CAD course. Computer-aided design related to project planning and construction documents.</td>
</tr>
<tr>
<td>452</td>
<td>Computer-aided Design II</td>
<td>2 (1-2) Prereq basic computer course. Continuation of Arch 451.</td>
</tr>
<tr>
<td>456</td>
<td>Field Sketching/Journal Keeping</td>
<td>3 (2-2) Prereq junior standing. Field-sketching/journal keeping strategies to facilitate investigation and comprehension of the built environment.</td>
</tr>
<tr>
<td>462</td>
<td>Architectural Structures IV</td>
<td>3 Prereq Arch 352. Deflection theory; classical and computer analysis for statically indeterminate architectural structure systems.</td>
</tr>
<tr>
<td>472</td>
<td>Codes and Acoustics</td>
<td>3 Prereq third year architecture student. Building codes and specifications; sound theory, control, and acoustical systems applied to buildings.</td>
</tr>
<tr>
<td>473</td>
<td>Professional Practice</td>
<td>2 Prereq Arch 472. Architect licensing process; techniques for and rationale of marketing architectural services; office organization and business methods applied to architecture.</td>
</tr>
<tr>
<td>480</td>
<td>Architecture Internship</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq major in Arch or Cst M. Placement in an approved industrial, professional, or governmental situation for specialized or general experience.</td>
</tr>
<tr>
<td>490</td>
<td>Seminar in Architectural Design</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq major in Arch. Advanced study in architectural design. Cooperative course taught by WSU, open to UI students (Arch 490).</td>
</tr>
<tr>
<td>491</td>
<td>Seminar in Architectural Communications</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq major in Arch. Advanced study in graphic communication.</td>
</tr>
<tr>
<td>492</td>
<td>Seminar in Architectural History</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq major in Arch. Advanced study in architectural history.</td>
</tr>
<tr>
<td>493</td>
<td>Seminar in Environmental Control V</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq major in Arch. Advanced study in environmental control of buildings.</td>
</tr>
<tr>
<td>494</td>
<td>Seminar in Urban and Regional Planning V</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 4 hours. Advanced study in urban and regional planning.</td>
</tr>
<tr>
<td>495</td>
<td>Seminar in Construction Management V</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 4 hours. Advanced study in construction practice management.</td>
</tr>
<tr>
<td>496</td>
<td>Seminar in Computer Applications</td>
<td>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.</td>
</tr>
<tr>
<td>497</td>
<td>Seminar in Professional Practice</td>
<td>V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq senior in Arch. Advanced study in architectural practice management.</td>
</tr>
<tr>
<td>498</td>
<td>Seminar in Architectural Structures V</td>
<td>1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq Arch 301, 351 or c/. Advanced study in architectural structures systems.</td>
</tr>
<tr>
<td>499</td>
<td>Special Problems V</td>
<td>V 1-4 May be repeated for credit. S, F grading.</td>
</tr>
<tr>
<td>511</td>
<td>Design VI/Graduate Design Project</td>
<td>6 (0-12) Prereq Arch 403. Studio course divided between urban design and preliminary design on graduate project.</td>
</tr>
<tr>
<td>513</td>
<td>Graduate Design Project</td>
<td>6 (0-12) Prereq Arch 403. Graduate design studio focusing on individualized topics.</td>
</tr>
<tr>
<td>515</td>
<td>Research Methods and Programming</td>
<td>3 Prereq Arch 403. Exploration of traditional research methods and investigations for architects.</td>
</tr>
<tr>
<td>520</td>
<td>Directed Topics in Architecture</td>
<td>V 1-3 May be repeated for credit; cumulative maximum 6 hours. Topics related to areas of emphasis in the program and student specialization.</td>
</tr>
<tr>
<td>525</td>
<td>History and Theory</td>
<td>3 Prereq Arch 409. History and theory of 20th century architecture focusing on cultural and philosophical principles related to design.</td>
</tr>
<tr>
<td>527</td>
<td>(427) Site and Landscape Design</td>
<td>3 Prereq Arch 403. Exploration of issues of site context analysis, topography, planning, and landscape design.</td>
</tr>
<tr>
<td>531</td>
<td>Advanced Tectonics</td>
<td>3 Prereq Arch 330, 403. Tectonic theory of concrete and metal construction with focus on skin design and technology as formative elements in architecture.</td>
</tr>
<tr>
<td>542</td>
<td>Issues in Architecture</td>
<td>3 Prereq graduate standing; Arch 409, 525. Examination of issues in architecture related to society, culture, environment, politics, and philosophy.</td>
</tr>
<tr>
<td>563</td>
<td>Structures III</td>
<td>3 Prereq Arch 351, 352. Wind and seismic loads on architectural structures; high-rise systems; reinforced concrete and masonry structures.</td>
</tr>
<tr>
<td>530</td>
<td>Philosophies and Theories of the Built Environment</td>
<td>3 Prereq graduate standing in Arch/I D/L A. Focus on systematic thought which may describe behavior of the built environment.</td>
</tr>
<tr>
<td>534</td>
<td>Theory Case Studies</td>
<td>3 Prereq Arch/ID/LA 530 and/or graduate standing. In depth exposure to the literature of selected theory typologies covered in Arch 530; Necessity Empirical Observation, History, Comparison, etc.).</td>
</tr>
<tr>
<td>535</td>
<td>Design/Theory Case Studies</td>
<td>3 Prereq graduate standing, Arch/ID/LA 530. In depth analysis of social-cultural-technological factors affecting designs of the built environment.</td>
</tr>
<tr>
<td>540</td>
<td>Research Methods</td>
<td>3 Prereq graduate standing. Research methods, from quantitative to technical to philosophical, director toward qualitative research.</td>
</tr>
</tbody>
</table>
546 Computer Animation 3 May be repeated for credit; cumulative maximum 9 hours. Prereq Arch 446 or Cpt 5 446; by interview only. Advanced computer animation techniques; advanced specialization in building/design simulation, dynamic modeling and visualization, engineering animation.

550 Design Applications 2 Prereq Arch/I D/L A 530. Emphasizes the cognitive and behavioral practices of design; exploration in terms of content and value.

551 Design/Build Firm Management 3 Prereq graduate standing. Introduction to design/build firm management procedures.

552 Design/Build Project Management 3 Prereq graduate standing, Arch 551. Introduction to policies, contracts and joint venture organizational structures related to management of design build projects.

553 Design and Construction Law 3 Prereq graduate standing. Introduction to contract law affecting the design and construction industry.

560 Interdisciplinary Seminar 3 Prereq graduate standing. Explores the chronological development of selected place-types in the U.S., Western Europe, and Asia.

561 Interdisciplinary Seminar II 3 Prereq Arch/I D/L A 560. Builds upon knowledge gained from Arch/I D/L A 560; expected to conduct an in-depth investigation of a specific aspect of dwelling.

563 (461) Architectural Structures III 3 Prereq Arch 351, 352. Wind and seismic loads on architectural structures; high-rise structure systems; reinforced concrete and masonry structures.

570 Advanced Architectural Studio/Laboratory 6 (0-12) In-depth study of design problems relating to cultural, environmental, technological and other issues as related to the student’s area of emphasis.

580 Architecture Internship VI 4 May be repeated for credit. Prereq graduate student in M Arch degree program. Placement in an approved industrial, professional, or governmental situation for specialized or general experience.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

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/mangement 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 1 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 3 Methods and procedures for masonry construction, steel construction, wood and timber construction, high-rise construction; equipment, labor, and safety requirements.

470 Estimating I 3 (2-3) Prereq Arch 331, Cst M 201. Cost estimating related to building general construction work; methods and techniques applicable to quantity survey, pricing detailed estimates, and bid preparation.

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

Program and Professor and Director, M. Tolmacheva (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), L. Gerber (History, China), 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. Staub (History, Middle East), R. Sun (History, East Asia); Assistant Professors, C. Lupke (Chinese), D. Sonnenfeld, (Sociology, Southeast Asia), P. Thiers (Political Science, East Asia); Librarian, A. M. Spitzer (South Asia).

The Asia Program is designed to provide a broad, systematic knowledge of Asia through interdisciplinary study and is intended to serve four major objectives:
1. to prepare students intending to teach courses on Asia in public schools,
2. to provide academic background for those planning to pursue graduate work on Asia,
3. to prepare students for business careers dealing with Asia, and
4. to train those interested in governmental and various private career opportunities related to Asia.

The flexibility of the program affords both an area concentration and a departmental specialization. The program offers the degree of Bachelor of Arts in Asian Studies.

Schedule of Studies

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 hours for comprehensive option) of courses on Asia and in related fields including 16 hours of an appropriate language.

ASIA REQUIREMENTS
(120 HOURS)

Freshman Year

First Semester

Hours
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Science Elective (GER) 4

Second Semester

Hours
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

Hours
Asia 270 3
Asia 272 3
Foreign Language Elective 4
Physical Sciences [P] (GER) 4

Second Semester

Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Foreign Language Elective 4
Major Coursework 9

Junior Year

First Semester

Hours
Arts & Humanities [H,G] (GER) 3
Communication Proficiency [C,W] (GER) 3
Foreign Language Elective 4
Major Coursework 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 4
Major Coursework 9
### Senior Year

**First Semester**
- Intercultural [I,G,K] (GER)
- Major Coursework or Electives
- Electives
- Hours: 18

**Second Semester**
- Tier III Course [T] (GER)
- Electives
- Hours: 14

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:

#### Program in Astronomy

**Professor and Program Director, M. D. Miller**

Astronomy is the study of the universe beyond the earth; stars and solar systems, galaxies, and the universe as a whole. Courses are offered at introductory to advanced levels for those pursuing careers in the sciences. The WSU planetarium with its Spitz star projector and the J.R. Jewett Observatory with its historic 12" Clark refracting telescope are used as instructional aids. Opportunities are available for students to collaborate with astronomy faculty on research projects. Astronomy faculty are members of the Department of Physics.

The program in astronomy offers a 19-hour minor in astronomy consisting of Astr 345, 435, 436, at least two hours from Astr 390, 490, or 499, and at least 3 hours from Geol 103, Astr 135, or Hist 381. The minor also requires Math 273 and Phys 303. These courses have as prerequisites Math 220, 271, 272 and Phys 201, 202. These prerequisites are often required as part of physical science major programs. Students should consult with the program director for exceptions.

**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, 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.

### 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.

#### 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.

#### Japan

- **3 Same as Hist 381.**

### Description of Courses

#### Astronomy

- **Astr 135 [P] Astronomy** 4 (3-2) Overview of the solar system, stars, galaxies, cosmology, and the history of astronomy. Includes a lab component with occasional evening meetings. Credit not granted for both Astr 135 and 150.
- **150 [Q] Science and the Universe** 3 Basic structure and history of science and science reasoning with emphasis on astronomy, observational practice, and data analysis. Credit not granted for both Astr 135 and 150.

### Bioengineering

**Professor D. Davis, Interim Director.**

Bioengineering, one of the fastest growing disciplines in the United States, is an engineering discipline that integrates engineering and life sciences to address issues important to human and animal health and well-being. At Washington State University, Bioengineering is a multidisciplinary effort of the Colleges of Engineering and Architecture, Veterinary Medicine, and Agriculture and Home Economics, contributing to the university's growing efforts in the biotechnology field. With collaboration of these and other colleges, a Bachelor of Science degree in Bioengineering is being reviewed for approval at Washington State University, with anticipated starting date in the 2002-2003 academic year.

#### Bioengineering

**B E**

- **120 Innovation in Design** 2 Same as ME 120.
- **140 Introduction to Bioengineering** 1 Seminar on current topics and issues in bioengineering; career options in bioengineering. S, F graded.
205 Bioengineering Professional Preparation and Ethics 1 Professional preparation for careers in bioengineering; ethical, social, and professional issues in bioengineering. S, F graded.

210 Bioengineering Analysis 2 (1-3) Prereq Ch E 201; Math 172, 220 or instructor’s permission. Analytical problem solving, modeling and computer methods for bioengineering applications.

320 Mechanics of Biomaterials 4 (3-3) Prereq B E 210; CE 211. Same as BSysE 320.

330 Bioinstrumentation 3 (2-3) Prereq B E 210; EE 261. Principles of instrumentation applicable to bioengineering systems; experimental design for measurement systems.

340 Unified Systems Bioengineering I 4 (3-3) Prereq B E 210; Ch E 301, 310; EE 261. Foundation for dynamic modeling and design of physiological systems; part I of two-semester course.

410 Bioengineering Capstone Project I 3 (2-3) Prereq Engr 402 or c/c; B E 340 or permission of instructor. Same as BSysE 410.

411 Bioengineering Capstone Project II 3 (2-3) Prereq Senior status; B E 410 or permission of instructor. Same as BSysE 411.

420 [T] Multidisciplinary Design Project 3 (2-2) Prereq Junior status; nonengineer; permission of instructor; completion of one Tier I and three Tier II courses. Team development of technical design product with business and social considerations; coupled with B E 410/411; written and oral reporting.

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 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 undergraduate minors in Zoology, Biology, and Ecology.

Facilities

There are modern facilities for graduate study in cellular and developmental biology, genetics, plant and animal physiology, anatomy and ultrastructure, functional morphology, ecology, molecular systematics, and behavioral, environmental, and evolutionary biology. The university’s rural location is conducive to field studies. Special facilities include the collections of the Charles R. Conner Museum, the Owenby Herbarium, the George E. Hudson Biological Preserve of 760 acres, the Electron Microscopy Center, the plant growth facilities, and the Eastlick Vivarium for maintaining lab animals.

Cooperation with many other campus units extends research opportunities. Cooperative arrangements with faculty in units such as Molecular BioSciences, Animal Sciences, Natural Resource Sciences, and the Veterinary College are readily achieved.

Undergraduate Programs

A total of 120 credit hours are required for the Bachelor of Science degree in Biology. Of these credit hours, a minimum of 40 must be 300-400-level, and a minimum of 40 must be in biological sciences. Two of the biology courses must satisfy the “Writing in the Major” [M] requirement. Additionally, 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. Students must also meet the General Education Requirements. The introductory biological sciences courses provide background in the concepts common to life sciences and an overview of the diversity of animals, plants, and microorganisms. 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 Ecology/Evolutionary Biology. The Biology Education option is particularly suitable for students who would like to teach Biology at the high school level. The Botany option is available for students with a special interest in plants and is particularly suitable for those who would like to pursue graduate studies. The General Biology option provides very appropriate, broad training in the life sciences, particularly for students seeking to continue in professional or graduate school. Another option is the course program in Ecology. This program provides the graduate with a broad-based ecological understanding applicable to such fields as environmental and wildlife biology.

The flexible curriculum leading to a Zoology degree meets the needs of students with various interests and goals. The General Zoology option provides a broad, solid foundation in zoology. It is aimed especially at students desiring a well-rounded background for further professional studies, such as in graduate or veterinary school. Students aspiring to enter medical, dental school or physical therapy school will find the Pre-health Sciences option to be particularly appropriate. The PreVeterinary/Animal Care option prepares students for careers involving animal care and maintenance in research institutions, zoos, aquaria, and clinics and application to schools of Veterinary Medicine.

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 organismal biology to ecology and evolutionary biology. A list of specific faculty interests can be obtained at www.science.wsu.edu/sbs/ or by writing to the school.

Schedule of Studies

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.

BIOLOGY

FIRST YEAR REQUIREMENTS

The first year requirements are common to the Biology Education, Prehealth, Botany, Ecology and Evolutionary Biology, and General Biology degree programs:

Freshman Year

First Semester

Biol 103 [B] (GER) 4
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3

Second Semester

Biol 104 [B] (GER) 4
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
Math 140 [N] or 171 [N] (GER) 4

BIOLOGY EDUCATION REQUIREMENTS (137 HOURS)

Sophomore Year

First Semester

Chem 240 4
ComSt 102 [C] (GER) 3
Phys 101 [P] (GER) 4
Psych 105 [S] (GER) 3
T & L 300 1

Second Semester

Arts & Humanities [H,G] (GER) 3
Engl 201 [W], 301 [W], or 302 [W] (GER) 3
Biol 301 4
MBioS 303 4
T & L 301 3

Junior Year

First Semester

Biol 372 [M] 4
T & L 302 2
T & L 303 2
T & L 317 2

Biology Electives

Complete Writing Portfolio

FYDA
### Sophomore Year

**First Semester**
- Arts & Humanities [H,G] (GER) 3
- Biol 405 3
- Biol 499 3
- T & L 404 2
- T & L 445 2
- Tier III Course [T] (GER) 3

**Second Semester**
- Biol 430 3
- Biol 452 [M] 2
- MBioS 401 3
- Intercultural [I,G,K] (GER) 3
- T & L 328 2
- T & L 478 2

**Directed Teaching–Fifth Year**
- T & L 415 16

### Junior Year

**First Semester**
- Arts & Humanities [H,G] (GER) 3
- Biol 301, and Biol 372; a maximum of 2 hours of 499 level courses; a course in introductory biology.
- Social Sciences [S,K] (GER) 3

**Second Semester**
- MBioS 303 4
- Phys 102 [P] (GER) 4
- Social Sciences [S,K] (GER) 3

**Junior Year**

**First Semester**
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Biol 372 [M] 4
- Degree Program Electives² 2 or 3
- Complete Writing Portfolio

**Second Semester**
- MBioS 303 4
- Phys 102 [P] (GER) 4

**Senior Year**

**First Semester**
- Degree Program Electives² 7-9
- Electives 6

**Second Semester**
- Degree Program Electives² 6
- Tier III Course [T] (GER) 3
- Electives 7 or 8

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<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>BOTANY REQUIREMENTS</strong> (120 HOURS)</td>
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<tr>
<td><strong>Sophomore Year</strong></td>
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<tr>
<td><strong>First 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>Chem 240</td>
<td>4</td>
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<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
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<tr>
<td>Phys 101 [P] (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>MBioS 301</td>
<td>4</td>
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<tr>
<td>MBioS 303</td>
<td>4</td>
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<tr>
<td>Phys 102 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td><strong>Junior Year</strong></td>
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<tr>
<td><strong>First Semester</strong></td>
<td>Hours</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>Biol 372 [M]</td>
<td>4</td>
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<tr>
<td>Degree Program Electives²</td>
<td>2 or 3</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>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
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<td>7 or 8</td>
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<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Electives</td>
<td>2 or 3</td>
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<tr>
<td><strong>Senior Year</strong></td>
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<tr>
<td><strong>First Semester</strong></td>
<td>Hours</td>
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<tr>
<td>Degree Program Electives²</td>
<td>7-9</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
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</tbody>
</table>

### 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, Biol 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 REQUIREMENTS**

All three 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 301, 372 [M], 405; chemistry through organic (Chem 240, or 340 and 341); General Physics (Phys 101 and 102, or 201 and 202); math through calculus (Math 140, 171, or 202); a minimum of 21 hours of additional program-option courses. In the degree program sequence below, these additional courses are designated as Program Option Courses.

**GENERAL ZOOLOGY REQUIREMENTS**

(120 HOURS) ✔FYDA

**Freshman Year**

**First Semester**

- Biol 103 [B] (GER) 4
- Chem 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- Math 140 [N], 171 [N], or 202 [N] (GER) 3 or 4

**Second Semester**

- Biol 104 [B] (GER) 4
- Chem 106 [P] (GER) 4
- Communication Proficiency [C,W] (GER) 3
- GenEd 110 [A] (GER) 3

**Sophomore Year**

**First Semester**

- Chem 240 (or 340 & 341) 4
- GenEd 111 [A] (GER) 3
- Phys 101 [P] or 201 [P] (GER) 4
- Program Option Course 4

**Second Semester**

- Biol 301 4
- Intercultural [I,G,K] (GER) 3
- Phys 102 [P] or 202 [P] (GER) 4
- Program Option Course 3 or 4

**Junior Year**

**First Semester**

- Arts & Humanities [H,G] (GER) 3
- Biol 321, 322, or 324 4
- Biol 393 [M] 2
- Program Option Course 3 or 4
- Social Sciences [S,K] (GER) 3
- Complete Writing Portfolio

**Second Semester**

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3-6
- Biol 321, 322, or 324 4
- Biol 372 [M] or 330 3 or 4
- Program Option Course 3 or 4

**Senior Year**

**First Semester**

- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 6
- Biol 350 or 353 4
- Biol 405 3
- Program Option Course or Electives 3 or 4

**Second Semester**

- Biol 350 or 353 4
- Program Option Courses or Electives 8-10
- Tier III Course [T] (GER) 3

1 Pre-medical and pre-dental 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.

2 Two courses must be selected from the following list: Biol 412, 418, 423, 428, 432, or Entom 443 and 444.

**PRE-HEALTH REQUIREMENTS**

(120 HOURS) ✔FYDA

**Freshman Year**

**First Semester**

- Biol 103 [B] (GER) 4
- Chem 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3

**Second Semester**

- Biol 104 [B] (GER) 4
- Chem 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 140 [N] or 171 [N] (GER) 4

**Sophomore Year**

**First Semester**

- Chem 240 (or 340 & 341) 4
- Phys 101 [P] (GER) 4
- Psych 105 [S] (GER) 3
- Soc 101 [S] (GER) 3

**Second Semester**

- Arts & Humanities [H,G] (GER) 3
- Biol 322, 418, or MBioS 302 4
- Biol 352 3
- Biol 452 [M] 2
- Phys 102 [P] (GER) 4

**Junior Year**

**First Semester**

- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Biol 322, 418, or MBioS 302 4
- MBioS 303 4
- Communication Proficiency [C,W] (GER) 3
- Electives 1-3 3
- Complete Writing Portfolio

**Second Semester**

- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Biol 301 4
- Biol 353 4
- Intercultural [I,G,K] (GER) 3
- Electives 3

**Senior Year**

**First Semester**

- Biol 490 [M] or other internship course 2
- Biol 315, 324, or 325 4
- Biol 393 [M] 2
- Electives 1-3 7

**Second Semester**

- Biol 315, 324, or 325 4
- Biol 452 [M] 2
- Tier III Course [T] (GER) 3
- Electives 1-3 7

1 Pre-med students and those interested in advanced degrees should take Chem 340, 341, 342, 343 (a one-year course in organic chemistry).

2 Replacement for Chem 240, Biol 490 is for students interested in Physical Therapy as a career.

3 Pre-Physical Therapy students should take Psych 333, 361, and Stat 412.

**PRE-VETERINARY/ANIMAL CARE PROGRAM**

A minimum of six years is required to obtain the DVM degree. Two or more years of pre-professional (pre-veterinary) training must be taken followed by four years of professional study in veterinary medicine. The following curriculum will allow students to finish pre-professional 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 pre-professional requirements in three years.

**Freshman Year**

**First Semester**

- Biol 103 [B] (GER) 4
- Chem 105 [P] (GER) 4
- GenEd 110 [A] (GER) 3
- Math 140 [N] or 171 [N] (GER) 3

**Second Semester**

- Biol 104 [B] (GER) 4
- Chem 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 140 [N] or 171 [N] (GER) 4

**Sophomore Year**

**First Semester**

- Chem 240
- Phys 101 [P] (GER) 4
- Psych 105 [S] (GER) 3
- Soc 101 [S] (GER) 3

**Second Semester**

- Arts & Humanities [H,G] (GER) 3
- Biol 322, 418, or MBioS 302 4
- Biol 352 3
- Biol 452 [M] 2
- Phys 102 [P] (GER) 4

**Junior Year**

**First Semester**

- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Biol 322, 418, or MBioS 302 4
- Communication Proficiency [C,W] (GER) 3
- MBioS 303 4
- Electives 1-3 3
- Complete Writing Portfolio

**Second Semester**

- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- Biol 301 4
- Biol 353 4
- Intercultural [I,G,K] (GER) 3
- Electives 3

All pre-professional academic requirements must be completed by the end of the academic year during which the application is under consideration. Students wishing to apply to Veterinary School during the sophomore year must complete the Graduate Record Exam (GRE) General Test and have sufficient Veterinary medical exposure and/or animal experi-
Senior Year

First Semester
Biol 350 or 353; 352 and 452; or Biol 452 and MBioS 401
4 or 5
Biol 405
3
Biol 418 or 438
3 or 4
Program Option Courses or Electives
7 or 8

Second Semester
Biol 350 or 353; 352 and 452; or Biol 452 and MBioS 401
4 or 5
Biol 412, 423, 428, or 432
3 or 4
Biol 495 or 499
1-4
Program Option Courses or Electives
3-5
Tier III Course [T] (GER)
3

Minor in Ecology


Minor in Zoology

Requires a minimum of 20 hours, including Biol 103, 104, 321, 322, or 324; 8 additional hours of zoology courses, 12 of which must be upper division. No more than 2 hours of Biol 496, 497, 498, or 499 may be included in the 20 hours.

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 prepare for graduate study in biology. Graduate Record Examination scores from the general aptitude and advanced biology sections are required.

Description of Courses

Basic and General Biology

Biol
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 101, 103 or 105.
103 [B] Introductory Biology 4 (3-3) Prerequisite 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 more than one of Biol 102, 103, 105.
120 (Bot) [B] Introduction to Botany 4 (3-3) A survey of the plant kingdom; structure and function of vascular plants.
135 (Zool) [B] Animal Natural History 3 Identification, life history, habitat relations, ecology, behavior, and conservation of animals commonly found in the Pacific Northwest.
150 (Zool) [Q] Evolution 3 Basic principles and implications of Darwinian evolution.
201 [B] Contemporary Biology 1 Prerequisite Biol 101, 102, 103, 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.
395 (Zool) [M] Seminar 2 Literature investigation, oral presentation and written reports of selected topics in zoology.
394 (Zool) Medicine as a Career 1 Prerequisite junior standing, by interview only. Current issues in medicine; ethical, financial, and personal aspects of medical practice.
395 (Zool) Seminar II 1 May be repeated for credit; cumulative maximum 4 hours. Training in abstracting and reporting recent and classical research in zoology.
401 [T] Plants and People 3 Prerequisite Biol 102, 103, or 120; completion of one Tier I and three Tier II courses. Relationships between plants and people, especially cultural and economic applications of plants.
406 (Bot) Microtechnique 4 (2-6) Same as Em 406. Credit not granted for both Biol 406 and 506.
407 (Zool) [T] Biology of Women 3 Prerequisite Biol 102, 103, or 298; junior standing; completion of one Tier I and two Tier II courses. Biological basis of body function, role of medical technology in health care of women, impact of social and cultural perspectives of female role.
408 [T] Contemporary Genetics 3 Prerequisite 60 hours coursework, one Tier I and three Tier II courses. Genetics as it relates to current events; inquiry into the impact of genetic technology on today's society.
430 Methods of Teaching Science 3 (2-3) Prerequisite admission to secondary teacher prep; 36 hours science. Methods, philosophy, and structure of science; application in teaching middle and secondary school science courses. Taken during last semester prior to student teaching.
452 [M] Cell Biology Laboratory 2 (1-3) or 3 (1-6) Prerequisite cell biology or physics. Experiments and techniques in cell biology and physiology.
480 (Zool) [M] Writing in Biology 2 Discussion and practice in relating thinking and writing: popular and professional communication in biology.
490 [M] Professional Seminar in Physical Therapy 2 (1-3) Prerequisite by interview only. Consideration of treatment modalities and health issues in physical therapy and related disciplines. A. S. F. grading.
491 Physical Therapy Clinical Experience V 1-4 May be repeated for credit; cumulative maximum 20 hours. Prerequisite Psych 105; Biol 315; major in biology. Junior standing. By interview only. Work experience under supervision of a qualified professional in treatment of human physical disabilities. S. F. grading.
492 (Zool 490) Topics in Zoology V 1-3 May be repeated for credit; cumulative maximum 6 hours.
495 Internship in Biology, Botany, and Zoology V 2-4 May be repeated for credit; cumulative maximum 8 hours. Prerequisite major in Biol. By interview only. Experience in work related to specific career interests. S. F. grading.
496 (Zool) [M] Special Problems and Reports V 1-4 Independent project with written project proposal, progress report, and final report required. S. F. grading.
497 (Zool) Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Academic traineeship in laboratory teaching and tutoring.
498 [M] Senior Thesis 3 Prerequisite senior standing. 4 research hours. Experimental/literature research leading to written thesis and oral examination.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.

500 (Bot) Seminar I 1 May be repeated for credit. Prereq 20 hours Biol. S, F grading.

506 (Bot) Microtechnique 4 (2-6) Graduate-level counterpart of Biol 406; additional requirements. Credit not granted for both Biol 406 and 506.

552 (Zool) Comparative Physiology 3 Prereq general physiology course. Adaptations of excretion, respiration, circulation, and metabolism in vertebrate and invertebrate animals.

592 (Zool) Advanced Topics in Cell Biology V 1-3 Same as MBioS 526.

593 (Zool) Seminar II 1 May be repeated for credit. Literature and problems.

595 (Zool) Seminar III 1 May be repeated for credit; cumulative maximum 8 hours. Literature and problems.

597 (Zool) Teaching Practicum V 1-4 May be repeated for credit; cumulative maximum 4 hours. Zoology laboratory teaching internship. S, F grading.

600 (Bot, Zool) Special Projects or Independent Study Variable credit. S, F grading.


702 (Bot, Zool) Master's Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

800 (Bot, Zool) Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Ecology and Evolution

Biol

330 (Zool) [B] Principles of Conservation 3 Prereq Biol 101, 102, 103, or MBioS 101. Conservation of major natural resources through a biological approach; philosophical, economic, and political aspects of important conservation issues.

332 (Bot) Systematic Botany 4 (2-6) Prereq Biol 102, 104 or c//, or 120. Identification and classification of vascular plants with emphasis on the local flora.

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 level.

390 [B] Stream Monitoring 1 (0-3) Prereq Biol 101 or 103, Chem 101 or 105, or equivalent. Principles and methods of water quality monitoring, including habitat assessment, water chemistry, and biological assessment. Field work and independent research required.

405 (Zool, Bot) Principles of Organic Evolution 3 Prereq Biol 301. The evolutionary processes that influence adaptation, population differentiation, and speciation in organisms. Credit not granted for both Biol 405 and 505.

410 (Zool) 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 (Zool) 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.

413 (Zool 314) Fish Ecology 3 Prereq 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.

416 (Zool) Principles of Fisheries Management 4 (3-3) Same as NATRS 416.

431 (Bot 430) Principles of Plant Systematics 3 Prereq Biol 332. Systematic theory: history and current views; approaches to phylogeny reconstruction and classification. Credit not granted for both Biol 431 and 531.


443 (Zool) Insect Ecology 3 (2-3) Same as Entom 443.


448 (Bot) Evolutionary Ecology of Populations 3 Rec Biol 372, 405. Evolutionary dynamics of natural populations and the co-evolution of species. Credit not granted for both Biol 448 and 548. Cooperative course taught by WSU, open to UI students (WLF 548).

460 (Bot) Plant Ecosystems 3 Prereq Biol 320, 372. Relationships of biotic and abiotic environment to plant distribution and evolution through study of physiological processes. Credit not granted for both Biol 460 and 560.

462 (Bot) Community Ecology 3 Prereq 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 Biol 462 and 562.

463 (Bot) [M] Field Ecology 2 (0-6) Prereq Biol 462. Field implementation of descriptive and experimental techniques to quantify the structure, composition, and interactions within natural communities. Field trips required. Credit not granted for both Biol 463 and 563. Cooperative course taught by WSU, open to UI students (WLF 537).

465 Field Stream Ecology 2 Prereq general ecology. Ecological roles of immature insects in different size streams; pattern changes along the stream continuum; other ecological characteristics.

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.

505 (Zool, Bot) Principles of Organic Evolution 3 Graduate-level counterpart of Biol 405; additional requirements. Credit not granted for both Biol 405 and 505.

511 (Zool) Principles of Systematic Biology 3 (2-3) Prereq Biol 103, 104; 10 additional hours Biol. Principles, methods, and literature of systematic biology; speciation mechanisms; concepts and problems of species and higher taxa; codes of nomenclature.

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 Biol 301. Genetic studies and approaches relevant to efforts to conserve threatened and endangered populations of organisms.

521 Quantitative Genetics 2 Prereq MBioS 331. Fundamentals of quantitative genetics; evolutionary quantitative genetics.

522 Molecular Population Genetics and Evolution 2 Prereq MBioS 331. Evolutionary change of molecular sequences; genetic distance and phylogeny; genomic evolution.

525 (Bot) Experimental Plant Ecology 3 (1-6) Same as NATRS 525.

526 (Zool) Population Analysis 1 Same as NATRS 526.

529 (Zool) Principles of Population Dynamics 1 Same as NATRS 529.

530 Statistical Ecology 4 (2-6) Prereq introductory statistics course. Collection and interpretation of ecological data according to biometrical procedures.

531 (Bot 530) Principles of Plant Systematics 3 Graduate-level counterpart of Biol 431; additional requirements. Credit not granted for both Biol 431 and 531.

533 (Bot) Modern Methods in Systematics 4 (2-6) Rec Biol 431 or 511. Selecting, gathering, and analyzing morphological, cytological, molecular data for phylogenetic and evolutionary studies.

536 (Zool) [M] Animal Behavior 3 (2-3) Graduate-level counterpart of Biol 438; additional requirements. Credit not granted for both Biol 438 and 538.

543 (Zool) Predator-Prey Dynamics 1 Same as Entom 543.

448 (Zool) Evolutionary Ecology of Populations 3 Graduate-level counterpart of Biol 448; additional requirements. Credit not granted for both Biol 448 and 548. Cooperative course taught by WSU, open to UI students (WLF 548).

554 Comparative Physiology and Biochemistry 2 Species have evolved in distinct modes of functioning which enable them to survive in their respective environments; focus on particular environmental or functional themes.

560 (Bot) Plant Ecosystem Biology 3 Graduate-level counterpart of Biol 460; additional requirements. Credit not granted for both Biol 460 and 560.

562 (Bot) Community Ecology 3 Graduate-level counterpart of Biol 462; additional requirements. Credit not granted for both Biol 462 and 562.

563 (Bot) Field Ecology 2 (0-6) Graduate-level counterpart of Biol 463; additional requirements. Credit not granted for both Biol 463 and 563. Cooperative course taught by WSU, open to UI students (Bot 537).
564 Molecular Ecology and Phylogeography
4 Prereq Biol 301 or equivalent; Biol 405 or equivalent. Use of genetic markers for the study of ecological phenomena, including kinship, population structure, and phylogeography.

565 (Zool 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.

566 Mathematical Genetics 3 Same as Math 563.

Animal Morphology, Physiology, and Development

Biol

251 (Zool) Introductory Human Physiology 4 (3-3) Rec one semester Chem. Basic physiological processes in humans from the cellular to the organismal level.


350 (Zool) 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.

352 (Zool) Cell Physiology 3 Prereq Biol 104, organic chem. Function and control at the cell-tissue level.

353 (Zool) Mammalian Physiology 4 (3-3) Prereq Biol 104; Rec c// in organic chemistry. Function and control at the organ-organismic level with emphasis on mammals, including humans.


418 (Zool 417) [M] Parasitology 4 (3-3) Prereq biology course. Types of associations, life cycles, control, prevention, and modifications of parasites; examination of parasitic protozoans and helminths.

421 (Zool) Vertebrate Histology and Organology 4 (2-6) Prereq Biol 103 or 251. Microscopic anatomy of tissues and major mammalian organs. Cooperative course taught by UI (Zool 427), open to WSU students.


432 (Zool 430) [M] Biology of Amphibians and Reptiles 4 (3-3) Prereq Biol 104. Characteristics, evolution, and systematics; patterns of distribution; adaptive strategies; interactions between humans and amphibians and reptiles.


461 (Zool 460) Environmental Physiology 3 Prereq Biol 350 or 353. Individual and evolutionary adaptations to changing environments with emphasis on recent literature. Credit not granted for both Biol 461 and 561.

510 Fish Population Ecology 2 Review of abiotic and biotic factors controlling or regulating fish population densities and critical review of relevant literature. Cooperative course taught by UI (Fish 514), open to WSU students.

514 (Zool 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).

515 (Zool) 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.

523 (Zool 513) Advanced Fishery Management 3 Compensation as a phenomenon basic to exploration; 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.

527 (Zool 517) Fish Behavior 3 Causes, mechanisms, and functions of fish behavior, including reproduction, communication, schooling, feeding, migration, and orientation. Cooperative course taught by UI (FISH 520), open to WSU students.

532 Biology of Amphibians and Reptiles 4 (3-3) Graduate-level counterpart of Biol 432; additional requirements. Credit not granted for both Biol 432 and 532.

534 (Zool 530) General and Comparative Neurophysiology 4 Same as Neuro 530.

551 (Zool) Comparative Vertebrate Reproduction 3 Graduate-level counterpart of Biol 451; additional requirements. Credit not granted for both Biol 451 and 551. Cooperative course taught by UI (Zool 511), open to WSU students.

553 Generation, Degeneration, Regeneration in the Nervous System 2 Plasticity and specificity of neural connections of invertebrates and vertebrates. Cooperative course taught by UI (Zool 505), open to WSU students.

555 (Zool) General and Cellular Physiology 4 (3-3) Same as V Ph 555.

557 (Zool) Advanced Mammalian Physiology 4 Same as V Ph 557.

558 (Zool) Molecular and Cellular Reproduction 4 (2-2) Same as MBioS 528.

561 (Zool 560) Environmental Physiology 3 Prereq Biol 350 or 353. Graduate-level counterpart of Biol 461; additional requirements. Credit not granted for both Biol 461 and 561. Cooperative course taught by WSU, open to UI students (WLF 560).


583 (Zool) Physiological Interactions in Predator-Prey Relations 1 Same as Entom 583.

589 (Zool) Advanced Topics in Zoology V 1-3 May be repeated for credit; cumulative maximum in Biol 589, 590 - 10 hours. Recent advances in zoology.

594 (Zool) 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.

Plant Morphology, Physiology, and Development

Biol

318 (Bot) Introductory Plant Physiology 3 Prereq Biol 104 or 120; organic chemistry or c//. Introductory plant physiology; lecture portion of Biol 320.

319 (Bot) Introductory Plant Physiology Laboratory 1 (0-3) Prereq Biol 104 or 120; organic chemistry or c//; Biol 318 or c//. Introductory plant physiology laboratory; lab portion of Biol 320.

320 (Bot) Introductory Plant Physiology 4 (3-3) Prereq Biol 104 or 120; org chem or c//. Water relations, mineral nutrition, photosynthesis, respiration, and growth of plants.

325 (Bot) Plant Biotechnology 3 Prereq Biol 120, MBioS 301. Introduction to the genetic engineering of plants.

409 (Bot 410) Plant Anatomy 4 (2-6) Prereq Biol 120. Developmental anatomy and morphology of vascular plants; economic forms. Credit not granted for both Biol 409 and 509.

417 (Bot) Stress Physiology of Plants 3 Rec Biol 320. Temperature, light, salinity, water effects on physiological processes; mechanistic understanding of stress. Credit not granted for both Biol 417 and 517.

429 (Bot) General Plant Pathology 3 Same as Pl P 429.

441 (Bot) Agrostology 3 Prereq Biol 332. Classification, distribution, and structures of grasses with emphasis at the genetic level. Field trips required. Cooperative course taught by UI (Bot 441), open to WSU students.

470 Diversity of Plants 3 Morphological, life history, and ecological diversity of major plant clades; emphasis on principles of homology, character transformation, and macroevolution.

504 (Bot) Experimental Methods in Plant Physiology 3 (2-3) Rec Biol 320. Advanced techniques and instrumental methods applicable to research in plant physiology.

509 (Bot 510) Plant Anatomy 4 (2-6) Graduate-level counterpart of Biol 409; additional requirements. Credit not granted for both Biol 409 and 509.
512 (Bot) Molecular Mechanisms of Plant Development 3 Prereq Biol 320. Physiology of growth; metabolism during development and reproduction.

513 (Bot) Plant Metabolism 3 Prereq Biol 320, MBioS 303. Metabolic processes unique to plants, including the primary incorporation of nitrogen, sulfur, carbon dioxide and phosphate into biomolecules.

516 (Bot) Water Relations and Intercellular Transport 3 Prereq Biol 320. Movement of water and solutes in plants, from the cellular level to the whole-plant level.

517 (Bot) Stress Physiology of Plants 3 Graduate-level counterpart of Biol 417; additional requirements. Credit not granted for both Biol 417 and 517.


535 (Bot) Angiosperm Families of the World 3 (2-3) Prereq Biol 332 or 431. Description, classification, and geographic distribution of families of flowering plants of the world.

590 (Bot) Advanced Topics in Botany V 1-4 May be repeated for credit. Recent research in plant science.

591 (Bot 515) Seminar in Plant Physiology 1 May be repeated for credit. Same as PI Ph 515.

Electron Microscopy

E Mic 406 Microtechnique 4 (2-6) Prereq by interview only. Modern methods for preparation of biological specimens for microscopy; paraffin and resin embedding, microtomy, anatomical, cytological and histochemical techniques. Credit not granted for both E Mic 406 and 506.

506 Microtechnique 4 (2-6) Graduate-level counterpart of E Mic 406; additional requirements. Credit not granted for both E Mic 406 and 506.

507 Electron Microscopy Laboratory 4 (2-6) Prereq one year biology; one year org chem; one year phy; by interview only. Techniques of transmission electron microscopy, especially those applicable to biological materials; theory and practice for electron optics and specimen preparation.

886 Special Projects in Electron Microscopy 2 (0-6) or 3 (0-9) May be repeated for credit. By interview only. Practical training in one or more areas of electron microscopy; TEM, SEM, ultramicrotomy, specimen processing, darkroom procedures and light microscopy.

887 Special Topics in Electron Microscopy 1 May be repeated for credit; cumulative maximum 4 hours. S, F grading.

Department of Biological Systems Engineering

Professor and Department Chair, C. O. Stockle; Professors, G. V. Barbosa-Cánovas, K. B. Campbell, D. C. Davis, G. M. Hyde, L. G. James, E. Pierce; Associate Professors, S. Chen, M. D. Kleege, M. J. Pitts, M. K. Swan, W. B. Symons, J. Tang; Assistant Professors, C. D. Clary, C.


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.bsys.wsu.edu.

BIOLGICAL SYSTEMS ENGINEERING

Engineering and Biology. Biological Systems Engineering is an emerging field of engineering study that addresses the interaction of humans, plants, microorganisms 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 advanced 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, communication, 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 training in the 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.

Schedule of Studies

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.

BIOLGICAL SYSTEMS ENGINEERING REQUIREMENTS (128 HOURS)

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>BSysE 110</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>
<tr>
<td>Math 171 [N] (GER)</td>
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Second Semester

<table>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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</tbody>
</table>

Department of Biological Systems Engineering

For complete information about all departmental programs, please see our Web page at www.bsys.wsu.edu.

Department of Biological Systems Engineering

Professor and Department Chair, C. O. Stockle; Professors, G. V. Barbosa-Cánovas, K. B. Campbell, D. C. Davis, G. M. Hyde, L. G. James, E. Pierce; Associate Professors, S. Chen, M. D. Kleege, M. J. Pitts, M. K. Swan, W. B. Symons, J. Tang; Assistant Professors, C. D. Clary, C.
Math 172 4

Sophomore Year

First Semester  Hours  
Biol 104 [B] (GER) 4  
BSysE 210 3  
C E 211 3  
Cpt S 203 2  
Math 273 2  
Phys 201 [P] (GER) 4  

Second Semester  Hours  
BSysE 215 1  
Chem 240, or 340 and 341 4 or 5  
Econ 101 [S] or 102 [S] (GER) 3  
M E 212 3  
Math 315 3  
Technical Biological Science Elective 3  

Junior Year

First Semester  Hours  
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 0  

Second Semester  Hours  
BSysE 310 3  
C E 315 or Ch E 332 3  
Engineering Design Elective 3  
M BioS 303 or SoilS 421 3  
Technical Biological Science or Engineering Elective 3  

Senior Year

First Semester  Hours  
Arts & Humanities [H,G] (GER) 3  
BSysE 410 3  
BSysE 441 3  
Engineering Design Elective 3  
Technical Biological Science Elective 3  

Second Semester  Hours  
BSysE 411 3  
Engl 402 [W] (GER) 3  
Engineering Design Elective 3  
Intercultural [I,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

B SysE

110 Engineering Living Systems 2 (1-3) 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.

120 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. S, F grading.

310 Biological Dynamics for System Design 3 (3-3) Prereq B SysE 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 (B SysE 310).


339 Perspectives in Biomedical Engineering 1 May be repeated for credit; cumulative maximum 3 hours. Prereq B SysE 210 or 211. Seminar on current issues in biomedical engineering; career options in biomedical engineering. S, F grading.

351 Environmental Hydrology 3 Prereq Math 140, 171, 202, or 206. Hydrologic cycle; commonly used methods for analysis of components of the cycle; importance of hydrology to the environment. Cooperative course taught by WSU, open to UI students (AgE 353). Credit not granted for both B SysE 351 and 353.

352 Introduction to Soil and Water Engineering 3 (2-2) Prereq B SysE 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 B SysE 351 and 353. Cooperative course taught by UI (AgE 351), 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 (2-2) Prereq B SysE 310, 320. Part 1 of capstone engineering design project; customer needs, design requirements, conceptual design, business plan, project proposal, and presentation.

411 Project Design II 3 (2-2) Prereq B SysE 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 Biol 353; B SysE 310; Ch E 441, E E 489 or M E 481. Interactions between cells, organs, and whole organisms; 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 (B SysE 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.

457 Design for Watershed Management 3 (2-3) Prereq junior standing. Modeling water movement and mass transport; design for balance between animal, plant, soil, water, and air resources in watershed. Cooperative course taught by WSU, open to UI students (B SysE 457).

461 Agricultural Processing and Environment 3 Prereq B SysE 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 462), 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 B SysE 474 and 574. Cooperative course taught by UI (AgE 474), open to WSU students.
482 Food Process Engineering Design 3 Prereq BSyE 481 or Ch E 330. Design of food processing systems; design and simulation of sterilization and pasteurization processes in foods. Credit not granted for both BSyE 482 and 582. Cooperative course taught by WSU, open to UI students (AgE and FST 487).

483 Food Separation Processes Design 3 Prereq BSyE 482. Design of food separation unit operations including concentration, dehydration, and membrane processes. Credit not granted for both BSyE 483 and 583. Cooperative course taught by WSU, open to UI students (BSyE 483).

484 Thermal Processing of Foods 3 (2-3) Prereq Ch E 332 or M E 404. Principles and practices of food preservation methods based on application of heat.

486 Food Rheology 3 (2-3) Prereq BSyE 481. Principles and applications on the rheology of foods, including fundamental and empirical equations; viscoelasticity; normal forces, time dependency and inelastic maximum 6 hours. Credit not granted for both BSyE 486 and 586. Cooperative course taught by WSU, open to UI students (BSyE 486).

487 Food Plant Design 3 Prereq BSyE 482. Preliminary design of food processing plants, including engineering principles, equipment selection, economic analysis, and regulatory aspects. Cooperative course taught by WSU, open to UI students (BSyE 487).

488 Food Powders 3 Engineering principles applied to handling and processing of food powders, including particle size distribution, morphology, physical properties, agglomeration, attrition, segregation. Credit not granted for both BSyE 488 and 588. Cooperative course taught by WSU, open to UI students (BSyE 488).

491 Advanced Topics I 1-3 May be repeated for credit; cumulative maximum 8 hours. Prereq junior standing.

495 Internship in Biological Systems Engineering V 1-3 May be repeated for credit, cumulative maximum 6 hours. Prereq sophomore standing. Prior approval of supervisor and advisor required. Work experience related to academic learning, S, F grading.

496 Conservation Engineering 3 (2-3) Prereq BSyE 452. Predicting occurrence and disposition of water on agricultural watersheds; hydrologic modeling; erosion processes; control structures and methods; construction practices. Credit not granted for both BSyE 496 and 596. Cooperative course taught by WSU, open to UI students (AgE 496).

499 Special Problems 3 V 1-4 May be repeated for credit, S, F grading.

510 Fundamentals of Research 3 Prereq graduate standing. The research process and the graduate research project; objectives, techniques, and challenges; scientific method and the design process; use of literature; creativity; writing and speaking about research; preparation of a research proposal. Cooperative course taught by UI (For 510), open to WSU students.

511 Instrumentation and Measurements 3 (2-3) Prereq Math 172, Phys 102 or 202. Instrumentation systems and measurement concepts, electronic signal-conditioning components and circuitry, digital electronics and microprocessor basics. Cooperative course taught by UI (AgE 541), open to WSU students.

520 Advanced Hydrology 3 Principles of the hydrologic cycle in mountainous areas, including precipitation, snowmelt and systems simulation. Cooperative course taught by UI (AgE 551), open to WSU students.

521 Advanced Biological Systems Engineering Topics V 1-4 May be repeated for credit; cumulative maximum 6 hours. Directed study of selected advanced topics in biological systems engineering. Cooperative course taught by WSU, open to UI students (AgE 561).

522 Advanced Biological Systems Engineering Topics V 1-4 May be repeated for credit. Directed group study of selected advanced topics in biological systems engineering. Cooperative course taught by WSU, open to UI students (AgE 561).

555 Natural Systems for Wastewater Treatment 3 Prereq senior or graduate standing. Principles and design procedures of natural systems for wastewater treatment for agricultural and non-agricultural applications.

557 Design for Watershed Management 3 (2-3) Prereq junior or graduate 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 (BSyE 457).

560 Fluid Mechanics of Porous Materials 3 Statics and dynamics of multi-flow systems in porous materials, properties of porous materials; steady and unsteady flow. Cooperative course taught by UI (AgE 558), open to WSU students.

562 Systems in Integrated Crop Management 3 (2-3) Same as Entm 562.

566 Constructed Wetlands for Pollution Control 2 Prereq graduate standing. Application of constructed wetlands for pollution control; design procedures. Cooperative course taught by WSU, open to UI students (BSyE 566).

574 Fluid Power and Control Systems 3 (2-3) Graduate-level counterpart of BSyE 474; additional requirements. Credit not granted for both BSyE 474 and 574. Cooperative course taught by UI (AgE 574), open to WSU students.

581 Advanced Physical Properties of Foods 3 Prereq BSyE 481, Math 315. Analysis, modeling, and experimental procedures to measure food physical properties for use in food processing system design.

582 Food Process Engineering Design 3 Graduate-level counterpart of BSyE 482; additional requirements. Credit not granted for both BSyE 482 and 582. Cooperative course taught by WSU, open to UI students (AgE and FST 587).

583 Food Separation Processes Design 3 Graduate-level counterpart of BSyE 483; additional requirements. Credit not granted for both BSyE 483 and 583.

584 Thermal Processing of Foods 3 (2-3) Prereq Ch E 332 or M E 404; graduate standing. Principles and practices of food preservation methods based on application of heat.

586 Food Rheology 3 (2-3) Graduate-level counterpart of BSyE 486; additional requirements. Credit not granted for both BSyE 486 and 586. Cooperative course taught by WSU, open to UI students (BSyE 586).

587 Food Plant Design 3 Graduate-level counterpart of BSyE 487; additional requirements. Credit not granted for both BSyE 487 and 587. Cooperative course taught by WSU, open to UI students (FST 587).

588 Food Powders 3 Graduate-level counterpart of BSyE 488; additional requirements. Credit not granted for both BSyE 488 and 588. Cooperative course taught by WSU, open to UI students (BSyE 588).

590 Food Quality Instrumentation 3 (2-3) Instrumentation used in food quality assessment; classification of assessment techniques by product properties and evaluation methods. Cooperative course taught by WSU, open to UI students (BSyE 589).

591 Advanced Theory of Irrigation Water Requirement 3 Energy balance and consumptive use of water; influence on farm and project irrigation system design criteria, management, and efficiencies. Cooperative course taught by WSU, open to UI students (BSyE 591).

592 Advanced Theory and Design of Irrigation Systems 3 (2-3) Prereq BSyE 453 or 590. Design and development of irrigation water application systems. Cooperative course taught by WSU, open to UI students (AgE 593).

593 Drainage Engineering 3 (2-3) Prereq BSyE 452 or 453. Principles and practices applied to surface and subsurface drainage problems; investigation, design, materials, and construction of drainage systems. Cooperative course taught by WSU, open to UI students (AgE 593).

596 Conservation Engineering 3 (2-3) Graduate-level counterpart of BSyE 496; additional requirements. Credit not granted for both BSyE 496 and 596. Cooperative course taught by WSU, open to UI students (AgE 596).

598 Graduate Seminar 1 May be repeated for credit. Required of all graduate students in biological systems engineering, S, F grading.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. (For PhD in engineering science only.) S, F grading.

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
- 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 study-
ing specific subjects that prepare graduates for their chosen fields.

For complete information about all departmental programs, please see our Web page at www.bsyse.wsu.edu/ag.

Agricultural 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 agricultural operations, services, management of agricultural businesses, sales, production operations, and promotional work in domestic and international agricultural communities.

Emphasis is placed upon the practical application of technology to agricultural enterprises. The curriculum prepares students to own, operate, and manage their own enterprises or to provide services for private or governmental entities. AgTM combines students’ inherent creativity and interest in physical and biological sciences, mathematics, business, and other subjects; and the desire to develop innovative solutions to a variety of agricultural problems.

As an agricultural technology and management specialist, you will: (be involved with some of the most vital issues of our time; (play a stewardship role in the preservation of the environment through careful management of our resources; (help ensure an abundant food supply and maintain food production through quality agriculture; (deal with complex issues such as international trade, environmental quality, low-input (sustainable) agriculture, food product quality, and worker safety. 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.

Schedule of Studies

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 including 12 hours of Ag electives must be courses numbered 300 or above.

AGRICULTURAL TECHNOLOGY AND MANAGEMENT REQUIREMENTS (122 HOURS)

Freshman Year

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<th>Course Title</th>
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<td>Engl 101 [W] (GER)</td>
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<td>Math 107 or 201</td>
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<tr>
<td>Second Semester</td>
<td>Ag or AgTM Elective</td>
<td></td>
<td>3</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Math 202 [N] (GER)</td>
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Sophomore Year

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<td>First Semester</td>
<td>Biol 103 [B] (GER)</td>
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<td>Chem 240 or Phys 101 [P] (GER)</td>
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<td>Cpt 105</td>
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<td>GenEd 110 [A] or 111 [A] (GER)</td>
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<td>Second Semester</td>
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<td>Ag Ec 201 [S] (GER)</td>
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<td>Ag or AgTM Elective</td>
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<td>Biol 104 [B] or 120 [B] (GER)</td>
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<td>Communication [C,W] (GER)</td>
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Junior Year

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<td>Complete Writing Portfolio</td>
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<td>Ag Ec 335 or Mgt 301</td>
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<td>AgTM 305</td>
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Senior Year

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<th>Course Title</th>
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<td>Intercultural [L,G,K] (GER)</td>
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<td>Second Semester</td>
<td>300-400-level Ag or Business Elective</td>
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<td>300-400-level AgTM Elective</td>
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<td>AgTM 433 [M]</td>
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<td>Tier III Course [T] (GER)</td>
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1 Students must complete one of the following sequences: Ag Ec 340/440, Ag Ec 360/460, Ag Ec 350 (30 or 370/450) [M] or two 300-level business courses chosen from the required list for business minors.

2 During the junior or senior year, students must take one more writing in the major course [M] in addition to AgTM 433 [M], for a total of two [M] courses.

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).

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.

305 Agricultural Precision Systems 3 (2-3) Prereq junior or senior or instructor approval. Systems for precision agriculture, equipment, software, principles, construction, care, tillage, planting, spraying, harvesting, and materials handling machinery. Field trips required. Cooperative course taught jointly by WSU and UI (ASM 305).

306 Agricultural Structures and Environmental Systems 3 (2-3) Planning farm buildings, construction materials, beam and column design, insulation and ventilation for environmental control. Cooperative course taught by UI (ASM 306), open to WSU students.

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.

Department of Biological Systems Engineering
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).

320 Fruit and Vegetable Harvesting and Processing Technology 3 (2-3) Prereq Math GER. Technologies for harvesting, handling, storing, processing, and packaging of value-added fruit and vegetable products.

325 Vineyard and Winery Equipment Systems 3 Overview of machinery systems used in vineyards and wineries.

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 Motor 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 or 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.

413 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).

414 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.

415 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.

416 Fluid Power Systems 3 (2-3) Fluid power principles applied to the selection, design, operation, and management of agricultural and industrial machinery. Field trips required. Cooperative course taught by WSU, open to UI students (ASM 416).

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/FST 433).

434 Agricultural Processing Laboratory 1 (0-3) Rec AgTM 433 or c/. Experiments in heat transfer, fluid flow and dehydration. Cooperative course taught by WSU, open to UI students (FST 434).

435 Instrumentation for Data Acquisition in Agriculture 3 (2-3) 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).

436 Agricultural Technology Design 2 Prereq junior/senior standing. AgTM 305, 306 or equivalent or instructor approval. c/AgTM 437/537. 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 436/536. Design applications to AgTM methodologies as applied to precision agricultural systems. Group problem solving activities, data analysis utilizing computers, and team design efforts.

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

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

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

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

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

453 Agricultural Waste Management 2 Prereq junior standing. Waste treatment processes, management plan, regulations and permits.

469 Aquacultural System Design 2 (1-3) Prereq Biol 103; A S 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 1-4 May be repeated for credit; cumulative maximum 8 hours. By interview only.

495 Internship in Agricultural Technology and Management V 2 or 3 May be repeated for credit; cumulative maximum 6 hours. Prereq sophomore standing. Prior approval of supervisor and advisor required. Work experience related to agricultural technology.

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) Graduate-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 AgTM 331 or c/. Graduate-level counterpart of AgTM 435; additional requirements. Credit not granted for both AgTM 435 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 536.

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 537.

Agricultural Education

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 ag-
Freshman Year

**AGRICULTURAL EDUCATION REQUIREMENTS (137 HOURS)**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Freshman Year</td>
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<tr>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>A S 101</td>
<td>3</td>
</tr>
<tr>
<td>Ag Elective</td>
<td>1-3</td>
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<tr>
<td>Ag/TM 110</td>
<td>1</td>
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<tr>
<td>Chem 101 [P] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H &amp; D 205 [C] [or ComSt 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Hours</td>
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<tr>
<td>Ag/TM 201</td>
<td>3</td>
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<tr>
<td>Chem 102 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Psych 105 [S] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<td>Stat 212 [N] (GER)</td>
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<table>
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<tr>
<th>Sophomore Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
<td>Hours</td>
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<tr>
<td>Ag Ed 201 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Crop 101</td>
<td>3</td>
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<tr>
<td>Engl 201 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Soils 201</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 300</td>
<td>(certify, College of Education)</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 104 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hort 201</td>
<td>4</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>
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Junior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Ag Electives</td>
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<tr>
<td>Ag Ed 340/350</td>
<td>3</td>
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<tr>
<td>Ag Ed 471</td>
<td>2</td>
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<tr>
<td>Hort Elective</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 302</td>
<td>2</td>
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<tr>
<td>T &amp; L 303</td>
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Certify with College of Education

**Complete Writing Portfolio**

**Second Semester**

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Ag Electives</td>
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<tr>
<td>EdPsy 402</td>
<td>2</td>
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<tr>
<td>Intercultural [I, G, K] (GER)</td>
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<tr>
<td>T &amp; L 328 [M]</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 445</td>
<td>2</td>
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<tr>
<td>Tier III Course [T] (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>300-400-level Ag Elective or Gen Genetics</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Crop &amp; Elective</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ed 342</td>
<td>3</td>
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<tr>
<td>Ag Ed 440</td>
<td>2</td>
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<tr>
<td>Ag Ed 490</td>
<td>2</td>
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<tr>
<td>T &amp; L 404</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 478</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ed 407</td>
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</tr>
<tr>
<td>Ag Ed 442</td>
<td>2</td>
</tr>
<tr>
<td>Ag/TM 402</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 415</td>
<td>6</td>
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</tbody>
</table>

Description of Courses

**Agricultural Education**

- **Ag Ed**
  - 317 Secondary School Practicum: 2 May be repeated for credit; cumulative maximum 6 hours. Prereq T & L 301. Ag Ed classroom experience prior to student teaching to provide observation, reflection, and limited teaching responsibilities. S, F grading.

  - 342 Methods of Teaching Agriculture: 3 Prereq T & L 303 and admitted to College of Education. Methods and strategies for teaching agriculture. S, F grading.

  - 345 Agriculture Curriculum Development and Theory: 2 (1-3) Prereq certified Ag Ed major. Admission to program. Planning and developing of an agricultural science curriculum to meet the specific needs of a given community. S, F grading.

  - 401 Adult Programs and Development: 3 Organizing and conducting adult programs in agriculture, management, program planning, learning styles, resources; strategies for formal and non-formal adult programs. S, F grading.

  - 407 Directed Teaching, Agriculture and Home Economics: 4-16 Prereq Ag Ed 342 or Ag Ed 442, 471. Supervised teaching in public schools for agricultural education or home economics education majors. S, F grading.

  - 440 [M] Principles of Vocational Education: 2 or 3 Prereq 9 hours in Educ. Local, state, and national vocational technical educational legislation, policies, programs, and organizations. S, F grading.


  - 470 Directed 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. S, F grading.

  - 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 421/521. S, F grading.

  - 477 Agricultural Science in K-12 Classrooms: 1 Developing selected agricultural and science curricula for K-12; special methods, materials and exercises. S, F grading.

  - 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: 1-3 Developing topics in agricultural education or agriculture that will provide advanced training for teachers of agriculture. S, F grading.

  - 508 Foundations of Vocational Education: 2 Historical, philosophical, social, political and economic factors that influence education in vocational environments. S, F grading.

  - 511 Seminar in Vocational Education: 1 or 2 Prereq graduate standing. Seminar addressing new and emerging legislation and educational programs in vocational education. S, F grading.

  - 536 Microcomputers in the Vocational Classroom: 3 Implications and applications of microcomputers for experienced classroom teachers. S, F grading.

  - 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. S, F grading.

  - 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. S, F grading.

  - 600 Special Projects or Independent Study: Variable credit. S, F grading.
Bachelor of Science, Agriculture

For complete information, visit www.bsysc.wsu.edu/ag or www.tadda.wsu.edu.

General agriculture is designed for students who wish to prepare for careers requiring broad training in agriculture. A maximum number of electives is permitted to enable the student to emphasize one or two fields, or otherwise to tailor the curriculum to fit particular needs. Students desiring to qualify as conservationists in the Natural Resources Conservation Service should have 12 hours of soils. A total of 46 agriculture credits are required. 15 credits must be from one department and 9 credits from another department.

Schedule of Studies

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 REQUIREMENTS (121 HOURS) ✔FYDA

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.

Freshman Year

First Semester
Ag Elective 3
Ag Requirements 1 3
Chem 101 [P] (GER) 4
Engl 101 [W] (GER) 3
H D 205 [C] or ComSt 102 [C] (GER) 3

Second Semester
Ag Elective 3
Ag Requirements 1 3
Biol 103 [B] (GER) 4
Psych 105 [S] (GER) 3
GenEd 110 [A] (GER) 3

Sophomore Year

First Semester
Ag Ec 201 [S] (GER) 3
Ag Elective 3
Biol 104 [B] (GER) 4
Engl 201 [W] (GER) 3
Math 205 [N] (GER) recommended 3

Second Semester
Ag Electives 12
GenEd 111 [A] (GER) 3

Junior Year

First Semester
300-400-level Ag Elective 3
300-400-level Ag Requirements 1 6
Ag Elective 3
Arts & Humanities [H,G] (GER) 3
Complete Writing Portfolio

Second Semester
300-400-level Ag Elective 3
300-400-level Ag Requirement [M] 3
300-400-level Ag Requirements 1 6
Intercultural [I, G, K] (GER) 3

Senior Year

First Semester
300-400-level Ag Requirements 1 9
300-400-level Ag Requirement [M] 3
Ag Elective 3

Second Semester
300-400-level Ag Elective 3
300-400-level Ag Requirements 1 6
Ag Elective 1
Tier III Course [T] (GER) 3

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

1 Choose from these required Ag courses: A S 101; Ag Ec 350 or 360; AgTM 312, 315, 416, 426; CropS 302, 303 305; Entom 340; Hort Elective; IPM 201 or PI P 429; SoilS 201; Stat 412.

Description of Courses

General Agriculture

Agri 501 Agriculture Master’s Practicum V 2-3 May be repeated for up to 6 credit hours. Prereq admission to graduate program, advisor approval. Course individually designed to provide practical participation/experience under professional supervision in areas related to student's specialization.

502 Graduate Seminar 3 Prereq admission to graduate program. Presentations and discussions of contemporary issues, trends, and recent research and development by graduate students, faculty, and visiting scholars.

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

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

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

598 Graduate Seminar V 1-3 Prereq admission to graduate program. Discussion of contemporary agricultural issues, trends, legislation, and recent research and international development by graduate students, faculty, and visiting scholars.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Agricultural Communication

For complete information, visit www.agcom.wsu.edu. 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.

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

See department for options within required agriculture courses. Consult with a School of Communication advisor before registering for elective courses. Specialized programs patterned for individual career aspirations may be developed in conjunction with the head of the School of Communication or a designated representative.

See department for options within required agriculture courses. Consult with a School of Communication advisor before registering for elective courses. Specialized programs patterned for individual career aspirations may be developed in conjunction with the head of the School of Communication or a designated representative.

Schedule of Studies

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 COMMUNICATIONS REQUIREMENTS (125 HOURS) ✔FYDA

Freshman Year

First Semester
Ag Elective 1 (AgTM 110) 1
Ag Requirement 2 (A S 101) 3
Biol 103 [B] (GER) 4
Department of Biological Systems Engineering

School of Accounting, Information Systems and Business Law

Professor and Director, R. Greenberg; Philip L. Kays Distinguished Professor in MIS and Assistant Director L. Jessup; Professors, R. August, A. Frakes; Professors, D. Sanders, R. Toolson, Marian E. Smith

Beginning Endowed Chair and Hubman Distinguished Professor in MIS J. Valachic, B. Wong-ong-Wing; Associate Professors, J. Cote, M. Fuller, S. Gill, C. Latham, T. Nunamaker, J. Sweeney; Assistant Professors, C. Bame-Alred, D. Crossdell, M. Featherman, M. Huynh, K. D. Joshi, R. Orwig, S. Sarker, S. Sarker, B. Stammerjohan, J. Thornton, A. Urbaczewski, J. Wells, Visiting Assistant Professor T. Hess; Professor Emeritus, G. Johnson.

DEPARTMENT OF FINANCE, INSURANCE, AND REAL ESTATE

Professor and Department Chair, H. Kerr; Professors, Victor L. Lyon/CCIM Distinguished Professor of Real Estate D. Epley, Safeco Distinguished Professor of Risk Management and Insurance G. Lai, Brinson Chair of Investment Management R. Sias; Associate Professors, L. Han, Mutual of Enumclaw/Field Distinguished Professorship in Insurance M. McNamara, H. Turtle; Assistant Professors, K. Keller, G. Caton, F. Kerins, J. Nofsinger, D. Whidbee.

DEPARTMENT OF MANAGEMENT AND DECISION SCIENCES

Professor and Department Chair, M. C. Wang; Professors, S. Ahn, D. Baker, B. Chen, J. Cullen, S. Fotopoulos, J. Goodstein, C. Morgan, R. Reed; Associate Professors, D. Lemak, T. Tripp; Assistant Professors, T. Baker, K. Butterfield, W. Donoher, M. Gruys, M. Hoegel, K. Kuhn, V. Miskin, C. Munson, K. Wade.

DEPARTMENT OF MARKETING

Professor and Department Chair, D. Muehling; Professors, J. Cote, Maughmer Professor of Freedom Philosophy, R. Markin, J. McCullough, D. Stem, P. Tansuhaj, U. Umesh; Associate Professors, P. Henderson, J. Johnson, E. Spenenberg; Assistant Professors, T. Arnold, J. Giese, James and Diana Huber Chair of Entrepreneurial Studies, J. Rose, D. Sprott, J. Watson.

INTERNATIONAL BUSINESS INSTITUTE

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.

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, work...
ing in a family business, or looking for positions as general managers will find entrepreneurship an attractive major.

The CBE Office of Technology, in coordination with the MIS area, provides education and training toward professional certification in information technology. The CBE has partnered with Microsoft, Oracle, and other industry leaders to establish a recognized curriculum that helps students enhance their skills through hands-on experience with administrative tasks and procedures. Intended for both traditional students and experienced IT professionals looking to augment their employability, the Office of Technology offers a variety of instructional methods in both lecture-based and on-line formats. Currently, courses are offered leading toward Microsoft and Oracle certifications. Other vendors will be added in the future. The Office of Technology also offers an industry recognized testing center that provides technology certification testing for a variety of vendors and job roles.

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 advisor 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 300-400-level CBE 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.

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.

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 REQUIREMENTS (120 HOURS) ✔FYDA

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

<table>
<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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</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<td>GenEd 110 A [GER]</td>
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<td>Tier I Science [Q] (GER)</td>
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<tr>
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<tbody>
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</tr>
<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
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<td>Math 201</td>
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Junior Year

<table>
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<tr>
<th>First Semester Hours</th>
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<tbody>
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</tr>
<tr>
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<td>Math 202</td>
</tr>
<tr>
<td>N 372, 375, 448, or 472</td>
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<td>Soc or Psych [S,K] (GER)</td>
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Senior Year

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<tbody>
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<th>Second Semester Hours</th>
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<td>Acctg or General Elective</td>
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<tr>
<td>Acctg 438 [M]</td>
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<tr>
<td>Mgt 491 or 492</td>
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<tr>
<td>One of Acctg 434, 435, 439 [M], MIS 372, 375, 448, or 472</td>
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<tr>
<td>Elective</td>
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</table>

For a total of 7 hours of Biological and Physical Sciences.

ACCOUNTING AND INFORMATION SYSTEMS REQUIREMENTS (120 HOURS) ✔FYDA

The objectives of the Bachelor of Arts in Business Administration with a major in accounting and information systems are to provide knowledge about practical and conceptual accounting, management information systems and the use of accounting information for managerial decision-making. This provides preparation for careers in accounting, including private, governmental, and non-profit accounting and information systems, consulting in public accounting and management consulting firms.

Freshman Year

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<tr>
<th>First Semester Hours</th>
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<tbody>
<tr>
<td>Acctg 230</td>
</tr>
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<td>Econ 301, 320, or 340</td>
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<td>GenEd 111 A [GER]</td>
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<td>Math 202 [N] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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<table>
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<tr>
<th>Second Semester Hours</th>
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<td>Acctg 231</td>
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<td>B Law 210</td>
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<tr>
<td>ComSt 102 [C] (GER)</td>
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<tr>
<td>Dec S 215</td>
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<td>Pol S Elective</td>
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<table>
<thead>
<tr>
<th>Junior Year Hours</th>
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<tbody>
<tr>
<td>300-400-level Elective</td>
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<tr>
<td>Acctg 330</td>
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<tr>
<td>Acctg 335 or 338</td>
</tr>
<tr>
<td>Math 202</td>
</tr>
<tr>
<td>Elective</td>
</tr>
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</table>
### Freshman Year

#### First Semester
- Arts & Humanities [H, G] (GER) 3
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Eng 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Tier I Science [Q] (GER) 3

#### Second Semester
- Biological Sciences [B] (GER) 3
- Econ 101 [S] or Econ 102 [S] (GER) 3
- GenEd 111 [A] (GER) 3
- Math 201 3
- MIS 250 3

### Sophomore Year

#### First Semester
- Acctg 230 3
- Intercultural [I, G, K] 3
- Math 202 [N] (GER) 3
- MIS 153 3
- Physical Sciences [P] (GER) 3

#### Second Semester
- Acctg 231 3
- B Law 210 3
- Dec S 215 4
- One of: MIS 271, 325, 425, or 426 or course approved by Accounting chair 3
- Oral Com [C] (GER) 3

### Junior Year

#### First Semester
- 300-400-level Elective 3
- Acctg 330 3
- Fin 325 3
- MIS 372 3
- Mktg 360 3
- Complete Writing Portfolio

#### Second Semester
- Acctg 331 3
- Acctg 335 or 338 3
- Dec S 340 3
- Mgt 301 3
- Soc or Psych [S, K] (GER) 3

### Senior Year

#### First Semester
- Acctg 335 or 338 3
- Acctg 433 [M] 3
- Econ 301, 320, or 340 3
- MIS 472 3
- Tier III Course [T] (GER) 3

#### Second Semester
- Acctg 438 [M] 3
- Engl 402 [W] or 403 [W] (GER) 3
- Mgt 491 or 492 3
- MIS 374 or 375 3
- Pol S Elective 3

#### Freshman Year

#### First Semester
- Arts & Humanities [H, G] (GER) 3
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Eng 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3

#### Second Semester
- Biological Sciences [B] (GER) 3
- 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 110 [A] or 111 [A] (GER) 3
- Math 202 [N] (GER) 3
- Physical Sciences [P] (GER) 3
- Elective 3

#### Second Semester
- Acctg 231 3
- Blaw 210 3
- Dec S 215 4
- Oral Com [C] (GER) 3
- Soc or Psych [S, K] (GER) 3

#### Junior Year

#### First Semester
- 300-400-level Elective 3
- Eng 402 [W] or 403 [W] (GER) 3
- Fin 325 3
- Mgt 301 3
- Mktg 360 3
- Complete Writing Portfolio

#### Second Semester
- 300-400-level Business or Econ Elective 3
- Acctg 338 3
- Dec S 340 3
- Electives 6

#### Senior Year

#### First Semester
- 400-level Business or Econ Elective 3
- Fin 425 [M] 3
- Mgt 401 [M] 3
- Electives 6

#### Second Semester
- 400-level Business or Econ Elective 3
- Mgt 491 or 492 3
- Mktg 495 [M] 3
- Pol S Elective 3
- Tier III Course [T] (GER) 3

---

1. For a total of 7 hours of Biological and Physical Sciences.

### BUSINESS ADMINISTRATION REQUIREMENTS (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.

#### Freshman Year

#### First Semester
- Arts & Humanities [H, G] (GER) 3
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Eng 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3

#### Second Semester
- Biological Sciences [B] (GER) 3
- 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 110 [A] or 111 [A] (GER) 3
- Math 202 [N] (GER) 3
- Physical Sciences [P] (GER) 3
- Elective 3

#### Second Semester
- Acctg 231 3
- Blaw 210 3
- Dec S 215 4
- Oral Com [C] (GER) 3
- Soc or Psych [S, K] (GER) 3

#### Junior Year

#### First Semester
- 300-400-level Elective 3
- Eng 402 [W] or 403 [W] (GER) 3
- Fin 325 3
- Mgt 301 3
- Mktg 360 3
- Complete Writing Portfolio

#### Second Semester
- 300-400-level Business or Econ Elective 3
- Acctg 338 3
- Dec S 340 3
- Electives 6

#### Senior Year

#### First Semester
- 400-level Business or Econ Elective 3
- Fin 425 [M] 3
- Mgt 401 [M] 3
- Electives 6

#### Second Semester
- 400-level Business or Econ Elective 3
- Mgt 491 or 492 3
- Mktg 495 [M] 3
- Pol S Elective 3
- Tier III Course [T] (GER) 3

---

1. For a total of 7 hours of Biological and Physical Sciences.

### BUSINESS ECONOMICS REQUIREMENTS (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
- Eng 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 201 3

#### Second Semester
- Arts & Humanities [H, G] (GER) 3
- Biological Sciences [B] (GER) 3
- 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

#### Second Semester
- Acctg 231 3
- Dec S 215 4
- Oral Com [C] (GER) 3
- Soc or Psych [S, K] (GER) 3

#### Junior Year

#### First Semester
- 300-400-level Elective 3
- Eng 402 [W] or 403 [W] (GER) 3
- Fin 325 3
- Mgt 301 3
- Mktg 360 3
- Complete Writing Portfolio

#### Second Semester
- 300-400-level Business or Econ Elective 3
- Acctg 338 3
- Dec S 340 3
- Electives 6

#### Senior Year

#### First Semester
- 400-level Business or Econ Elective 3
- Fin 425 [M] 3
- Mgt 401 [M] 3
- Electives 6

#### Second Semester
- 400-level Business or Econ Elective 3
- Mgt 491 or 492 3
- Mktg 495 [M] 3
- Pol S Elective 3
- Tier III Course [T] (GER) 3

---
BUSINESS LAW REQUIREMENTS (120 HOURS)  

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<th>Component</th>
<th>Hours</th>
</tr>
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<tbody>
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<tr>
<td>First Semester</td>
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<tr>
<td>Arts &amp; Humanities [H, G] (GER)</td>
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<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I, G, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 201</td>
<td>3</td>
</tr>
<tr>
<td>MIS 250</td>
<td>3</td>
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<tr>
<td>Sophomore Year</td>
<td></td>
</tr>
<tr>
<td>First Semester</td>
<td></td>
</tr>
<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 or 4</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3</td>
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<td>Elective</td>
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</tr>
<tr>
<td>Second Semester</td>
<td></td>
</tr>
<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>
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<tr>
<td>Oral Com [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Soc or Psych [S,K] (GER)</td>
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<td>Junior Year</td>
<td></td>
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<tr>
<td>First Semester</td>
<td></td>
</tr>
<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>
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<tr>
<td>Mktd 360</td>
<td>3</td>
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<td>Complete Writing Portfolio</td>
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<td>Second Semester</td>
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<tr>
<td>Dec S 340</td>
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<tr>
<td>Second Semester</td>
<td></td>
</tr>
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<td>Mgt 491 or 492</td>
<td>3</td>
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<tr>
<td>Pol S Elective</td>
<td>3</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
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</table>
### Entreprenuership Requirements (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

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &lt;br&gt; &amp; Humanities [H,G] (GER)</td>
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<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Math 201</td>
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<td>MIS 250</td>
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#### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Acctg 230</td>
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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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<table>
<thead>
<tr>
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<th>Hours</th>
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<tbody>
<tr>
<td>Acctg 231</td>
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<td>B Law 210</td>
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<td>Dec S 215</td>
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#### Junior Year

<table>
<thead>
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<th>First Semester</th>
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<td>300-400-level Elective</td>
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<tr>
<td>Fin 325</td>
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<td>Mgt 301</td>
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<td>Mktg 360</td>
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<table>
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<th>Hours</th>
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<tbody>
<tr>
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#### Senior Year

<table>
<thead>
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<tbody>
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<tr>
<td>Tier III Course [T] (GER)</td>
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#### Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
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<td>First Semester</td>
</tr>
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<td>Group A Elective</td>
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<td>Mktg 491 or 492</td>
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<td>MIS 374</td>
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<tr>
<td>Elective</td>
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</tbody>
</table>

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].

### Finance Requirements (120 Hours)  
**FYDA**

Preparation for careers in financial departments of businesses, commercial and investment banks, governmental financial agencies, and other financial institutions.

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &lt;br&gt; &amp; Humanities [H,G] (GER)</td>
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</tr>
<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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<th>Hours</th>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<td>MIS 250</td>
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#### Sophomore Year

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<tr>
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<td>B Law 210</td>
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<tr>
<td>Dec S 215</td>
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<tr>
<td>Oral Com [C] (GER)</td>
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#### Junior Year

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<tr>
<td>Fin 325</td>
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<td>Mgt 301</td>
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<td>Mktg 360</td>
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<tbody>
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#### Senior Year

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<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Elective</td>
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1 For a total of 7 hours of Biological and Physical Sciences.

2 Acctg 331 or 338.

3 Any approved 300- or 400-level courses in accounting, decision science, economics, finance, international business, real estate, or risk management and insurance.

4 Fin 422, 426, 428, 481.

### General Business Requirements (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

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<th>First Semester</th>
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<td>Mgt 301</td>
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**Second Semester**

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**Junior Year**

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**Senior Year**

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**Second Semester**

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**HUMAN RESOURCES/PERSONNEL REQUIREMENTS**

**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.

**International Business Requirements (122 Hours)**

**FYDA**

Preparation for careers with multinational corporations, governmental and intergovernmental agencies both domestic and international.

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**Student Abroad**

**First Semester**

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**Second Semester**

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**Management Requirements (120 Hours)**

**FYDA**

Students may emphasize preparation for one of three careers in this major: (1) careers as production executives in manufacturing and enterprises and for other administrative positions in business and government for which production training is useful and desirable; (2) careers for which an understanding of international business is desirable; and (3) careers in management which require an understanding of people in organizations as well as the production function.

**Freshman Year**

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**Sophomore Year**

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**Group A Electives**

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**Second Semester**

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**Elective**

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**International Business Requirements (122 Hours)**

**FYDA**

Preparation for careers with multinational corporations, governmental and intergovernmental agencies both domestic and international.

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Management Information Systems

Requirements (120 Hours) ✓ FYDA

Preparation for careers in every field of business, using information systems technology to solve business problems. Provides excellent training in systems design, development, networking, and support to meet the demands of this fast-growing occupational area.

Freshman Year

First Semester
- Arts & Humanities [H,G] (GER) 3
- Econ 101 [S] or Econ 102 [S] (GER) 3
- GenEd 110 [A] (GER) 3
- Elective 3
- Tier I Science [Q] (GER) 3
- Second Semester
- Biological Sciences [B] (GER) 3
- 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
- Pol S 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
- Mkgt 360 3
- Complete Writing Portfolio 3
- Second Semester
- 300-400-level Elective 3
- Dec S 340 3
- Mgt 401 [M] 3
- Soc or Psych [S,K] (GER) 3
- Elective 3
- Senior Year

First Semester
- Mgt 491 or 492 3
- Three of: Dec S 344, 412 [M], 418, 440 [M], 450 [M]; MIS 375; Mgt 450, 453, 489 9
- Elective 3
- Second Semester
- Mgt 483 [M] 3
- Tier III Course [T] (GER) 3
- Two of: 400-level Mgt, 300-400-level Business, Econ, or 300-400-level Anth, Psych, Soc 6
- Elective 3

6 For a total of 7 hours of Biological and Physical Sciences.

7 Choose from Econ 301, 302, 320, 350, 360, 450, or 470.

Marketing Requirements (120 Hours) ✓ FYDA

Preparation for careers in marketing management, sales, retail management, marketing research, brand management, and promotion.

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
- 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
- Math 202 [N] (GER) 3
- Physical Sciences [P] (GER) 3 or 4
- Pol S Elective 3
- Second Semester
- Acctg 231 3
- B Law 210 3
- Dec S 215 4
- Oral Com [C] (GER) 3
- Pol S Elective 3
- Junior Year

First Semester
- 300-400-level Elective 3
- Fin 325 3
- Mgt 301 3
- Mkgt 360 3
- Complete Writing Portfolio 3
- Second Semester
- 300-400-level Elective 3
- Dec S 340 3
- Eng 402 [W] or 403 [W] (GER) 3
- MIS 372 [M] 3
- MIS 374 3
- MIS 375 3
- Senior Year

First Semester
- Group A Elective 3
- Mktg 368 3
- Elective 3
- Second Semester
- 300-400-level Elective 3
- MIS 325 3
- Mktg 407 3
- Elective 3

6 For a total of 7 hours of Biological and Physical Sciences.

7 Group B electives are: Four from Mktg 450, 457 [M], 461 [M], 468, 470, 477, 478 [M], 480, 482 [M], 487, 490 [M], 495, 496, 498, three of which must be I Bus or Mktg. No more than 3 hours of 498 may be used.

Real Estate Requirements (120 Hours) ✓ FYDA

Preparation for careers in real estate administration, appraisal, brokerage, finance, management, marketing, production, selling, and title insurance.
### Freshman Year

**First Semester**
- Arts & Humanities [H] (GER) 3
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Eng 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
- GenEd 111 [A] (GER) 3
- Intercultural [I, G, K] (GER) 3
- Math 201 3

### Sophomore Year

**First Semester**
- Acctg 230 3
- B Law 210 3
- Math 202 [N] (GER) 3
- Soc or Psych [S, K] (GER) 3
- Elective 3

**Second Semester**
- Acctg 231 3
- Dec S 215 4
- MIS 250 3
- Oral Com [C] (GER) 3
- Physical Sciences [P] (GER) 3 or 4

### Junior Year

**First Semester**
- 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**
- 300-400-level Elective 3
- Dec S 340 3
- Mktg 360 3
- Pol S Elective 3
- R E 405 [M] 3

### Senior Year

**First Semester**
- B Law 414 [M] 3
- Group A Elective 3
- Group B Elective 3
- R E 409 3
- Elective 3

**Second Semester**
- Group A Elective 3
- Mgt 491 or 492 3
- R E 407 3
- Tier III Course [T] (GER) 3
- Elective 2

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### Risk Management & Insurance Requirements (120 Hours)

- **Freshman Year**
  - First Semester: 3
  - Arts & Humanities [H, G] (GER) 3
  - Econ 101 [S] or Econ 102 [S] (GER) 3
  - Eng 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
  - GenEd 111 [A] (GER) 3
  - Intercultural [I, G, K] (GER) 3
  - Math 201 3

- **Sophomore Year**
  - First Semester: 3
  - Acctg 230 3
  - B Law 210 3
  - Math 202 [N] (GER) 3
  - Soc or Psych [S, K] (GER) 3
  - Elective 3

- **Second Semester**
  - 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 or 4

- **Junior Year**
  - First Semester: 3
  - Engl 402 [W] or 403 [W] (GER) 3
  - Fin 325 3
  - Mktg 360 3
  - Mgt 301 3
  - Mktg 360 3
  - Complete Writing Portfolio

- **Second Semester**
  - 300-400-level Business Elective 3
  - Dec S 340 3
  - Ins 320 3
  - Mktg 360 3
  - Complete Writing Portfolio

- **Senior Year**
  - First Semester: 3
  - 300-400-level Business Elective 3
  - Dec S 340 3
  - Ins 321 3

- **Second Semester**
  - 300-400-level Business Elective 3
  - Ins 322 3
  - Ins 420 [M] 3
  - Pol S Elective 3
  - Elective 3

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### Minors in Business Specializations

- **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, 380, Ins 320, Mgt 301, MIS 324, Mktg 360, R E 305.

- **Business Law:** B Law 210. In addition, choose five from the following (three must be B Law): Ag Ec 435, B Law 410, 411, 414 [M], 415 [M], 416, 417, 418; C E 462, Com 415, Crm J 320, 420, 425, Econ 350, 360, ES/PR 335, 444, FSHN 370, H A 311, Phil 360, 470, Pol S 300, 330, 402, 404, 443, or Soc 364.

- **Decision Sciences:** Dec S 215, 340, MIS 250: three of Dec S 344, 412 [M], 418, 440 [M], or 450 [M].

- **Entrepreneurship:** Three from Econ 301, Fin 325, Mgt 301, Mktg 360; and three from EntPr 375, 426, 485, 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, 342, 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:** I Bus 380 [M]; one of I Bus 435, 453, 496, 498, or 499 (3 credits only of 498 or 499); two of the following pairs of courses: B Law 210, I Bus 415 or 416 [M]; I Bus 482, Mktg 360; Econ 102, I Bus 375, 417, 470, 472, or Ag Ec 453; Fin 325, I Bus 481. Up to 9 hours of foreign study may be substituted for the above courses. Pre-approval is required.

- **Management:** Mgt 301, MIS 250: four of Mgt 315, 401 [M], 453, 483 [M], 485, 487, 496, MIS 375.

- **Management Information Systems:** MIS 153, 250, 271: three of the following, MIS 325, 372, 374, 375, 425/426 or 448.

- **Marketing:** Mktg 360; 407 or 417; four of Mktg 368, 450, 457 [M], 461 [M], 468, 470, 477, 478 [M], 480, 482 [M], 487, 490 [M], 495 [M], 496 (3 credits), 498.

- **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 de-
partmental requirements: Acctg 230, 231; B Law 210;
ComSt or H D (C); Dec S 215, 340; Econ 101, 102;
Engl 402 [W] or 403 [W]; Fin 325; Math 201, 202; Mgt
301; Mgt 491 or 492; MIS 250; Mktg 360; Pol S Elec-
tive; Soc or Psych (S,K); 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 under-
graduate degree. Second degree students must have
completed Acctg 230, 231, B Law 210, Dec S 215, Econ
101, 102, Engl 101, Mgt 201, 202, and MIS 250 before
enrolling in 300- or 400-level business courses. Stu-
dents should consult the CBE Business Advising Office
for specific requirements.

Transfer Students

Students planning to transfer to Washington State
University at the end of the freshman or sophomore
year should follow, as closely as possible, the general
and core course requirements set forth above. If this is
done, there should be no difficulty in completing the
requirements for the bachelor's degree within the nor-
mal period of four years. Students at Washington State
community colleges should follow the schedule of
studies outlined in the 2 Plus 2 Program brochures. 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 stu-
dents who have certified as BA/HA majors
or minors and to juniors and seniors offi-
cially certified into other degree programs
requiring these business courses.

Accounting

Acctg
230 Introduction to Financial Accounting 3
Prereq sophomore standing. Introduction to corpo-
rate financial reporting via the prepara-
tion and interpretation of financial statements.
231 Introduction to Managerial Accounting 3
Prereq Acctg 230. Introduction to managerial ac-
tounting; generation and use of accounting data
for planning and controlling business operations.
275 Special Topics: Study Abroad V 1-15 May
be repeated for credit. S, F grading.
330 Intermediate Accounting I 3 Prereq Acctg
231; MIS 250. Theory underlying the determina-
tion of income; analysis of financial statements.
331 Intermediate Accounting II 3 Prereq Acctg
230. Continuation of Acctg 330.
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 S
215; Math 107 or 201; 202; MIS 250. Manage-
ment uses of cost information; cost systems and
system design; cost analysis.
430 Advanced Accounting 3 Prereq Acctg 331. Part-
nership equities and extended forms of cor-
porate ownerships and entities.
431 Accounting Theory 3 Prereq Acctg 331. Ac-
tounting theory and contemporary issues.

433 [M] Accounting Systems and Auditing 3
Prereq Acctg 330, 338; MIS 250. Accounting sys-
tems design; internal control and computeriza-
tion.
434 Accounting for Public Organizations 3
Prereq Acctg 331. Conceptual and procedural ac-
tounting issues involving public sector organiza-
tions.
435 Individual Income Taxes 3 Prereq Acctg 335.
The study of individual income taxes from both
compliance and planning perspectives. Credit not
granted to those taking Acctg 335 prior to Fall
1999.
436 International Accounting and Taxation
3 Prereq Acctg 231. Comparative accounting sys-
tems, foreign currency transactions, transfer
pricing, taxation of foreign source income.
438 [M] Advanced Cost Accounting and Man-
agement 3 Prereq Acctg 338. Cost/managerial ac-
tounting as it is used for decision making and
strategic planning; emphasis on budgeting, prod-
cut cost, and performance measurement.
439 [M] Auditing 3 Prereq Acctg 331, 433; MIS
250. Nature of auditing, generally accepted au-
diting standards, and audit procedures as related
to auditing of financial statements by indepen-
dent accountants.
498 Accounting Internship V 2-15 May be
repeated for credit; cumulative maximum 15 hours.
Cooperative educational internship with a busi-
ness, 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. Over-
view of federal taxation of individuals, partners-
ships, corporations, estates, and gifts.
532 Contemporary Accounting Cases and
Problems 3 Accounting theory applied to ex-
ternal financial reporting practices.
533 Administrative Control 3 Managerial evalu-
atation of budgeting, cost accounting, and finan-
cial analysis techniques; their utilization in con-

trol 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 Stockhold-
ers 3 Prereq Acctg 335. Federal income tax impact
on corporations and their stockholders from form-
ing, operating, and liquidating corporations.
537 Tax Research and Estate Planning 3 Legal
tax research methodology; federal estate and gift
taxation and retirement planning.
538 Seminar in Cost/Managerial Accounting 3
Cost concepts, cost and managerial account-
ing systems; current issues and research in cost
and managerial accounting.
539 Seminar in Public Accounting and Au-
diting 3 Prereq Acctg 439. Public accounting
and auditing; to present; current issues including
statistical sampling and computers.
550 Introduction to Financial and Manage-
rial Accounting 3 Fundamentals of financial
and managerial accounting; primarily for
graduate students who wish to meet the MBA
core requirements in accounting.

596 Doctoral Topics 3 May be repeated for credit;
cumulative maximum 15 hours. Advanced top-
ics in accounting.
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 grad-
ing.
800 Doctoral Research, Dissertation, and/or
Examination Variable credit. S, F grading.

Business Law

B Law
210 Law and the Legal Environment of Busi-
ness 3 Fundamentals of business law; the legal
system, legal reasoning, public, commercial,
managerial and property law, and government
regulation.
275 Special Topics: Study Abroad V 1-15 May
be repeated for credit. S, F grading.
410 Commercial Law 3 Prereq B Law 210. Con-
tacts, sales, leasing, and licensing; commer-
cial paper; and debtor/creditor relations.
411 Managerial Law 3 Prereq B Law 210. Law
of agency, partnerships, limited liability compa-
nies and corporations; and securities regulation.
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 interna-
tional 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. Laws regulating intellectual property
rights, contracts, communications, torts, and crimes
in cyberspace.
418 Ethics in Cyberspace 3 Prereq B Law 210 and
MIS 250. Examination of the moral and ethical
parameters of doing business in cyberspace.
275 Special Topics: Study Abroad V 1-15 May
be repeated for credit. S, F grading.
498 Business Law Internship V 2-15 May be
repeated for credit, cumulative maximum 15 hours.
Cooperative educational internship with a busi-
ness, government or nonprofit organiza-
tion. S, F grading.
499 Special Problems V 1-4 May be repeated for
credit. S, F grading.
510 Business Law I 3 The legal process, constitu-
tional and administrative law; torts, crimes,
sales, agency, and employment law.
511 Business Law II 3 Prereq B Law 210 or 510.
Law of partnerships, corporations, securities regu-
lations, negotiable instruments, secured transac-
tions, property, insurance and bankruptcy; gov-
ernment regulation of businesses and profes-
sions.

Decision Sciences

Dec S
215 Statistics 4 (3-3) Prereq Math 201. Data presen-
tation, probability, distributions, inferences, and
linear regression as applied to business and eco-
nomics.
517 Quality Improvement for Management 3 Philosophy and evolution of quality control, control charts, process capability analysis, applications.

518 Quality Improvement for Management 3 Same as Math 416.

519 Applied Stochastic Models 3 Prereq Dec S 215. Total quality management as used in industries; philosophy of Deming and others, control charts, process capability analysis, team tools.


521 Business Statistical Analyses 3 Prereq admission to MBA program. Advanced preparation for graduate-level business analyses, applied finite math and statistics principles.

522 Time Series 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.

523 Quality Improvement for Management 3 Same as Math 416.

524 [M] Entrepreneurship 3 Same as Ag Ec 512.

525 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.


527 Operations Management 3 Prereq Dec S 340. Analytical approach to solving problems in production and operations management.

528 Applied Multiple Time Series Analysis 3 Prereq Dec S 516. Approaches to modeling and analysis of multiple time series.

529 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 methodologies, experimental design, time series, forecasting analysis.

530 Doctoral Topics V 1-4 May be repeated for credit; cumulative maximum 15 hours. Advanced topics in decision sciences.

531 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.

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

533 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

534 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

535 Entrepreneurship EntrP 375 Electronic Commerce and the Internet 3 Same as MIS 375.

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

537 Time Series 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.

538 Quality Improvement for Management 3 Philosophy and evolution of quality control, control charts, process capability analysis, applications.

539 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.

540 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.

541 Business Statistical Analyses 3 Prereq admission to MBA program. Advanced preparation for graduate-level business analyses, applied finite math and statistics principles.

542 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.


544 Operations Management 3 Prereq Dec S 340. Analytical approach to solving problems in production and operations management.

545 Applied Multiple Time Series Analysis 3 Prereq Dec S 516. Approaches to modeling and analysis of multiple time series.

546 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 methodologies, experimental design, time series, forecasting analysis.

547 Doctoral Topics V 1-4 May be repeated for credit; cumulative maximum 15 hours. Advanced topics in decision sciences.

548 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.

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

550 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

551 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

552 Entrepreneurship 3 Same as Econ 500.

553 Economic Theory II 3 Same as Econ 501.

554 Economic Theory III 3 Same as Econ 502.

555 Economic Theory IV 3 Same as Econ 503.

556 Economic Theory V 3 Same as Ag Ec 504.

557 Statistics for Economists 4 Same as Ag Ec 510.

558 Econometrics I 3 Same as Econ 511.

559 Econometrics II 3 Same as Ag Ec 512.

560 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.

561 Financial Management 3 Prereq Acctg 325, 360, Mktg 301, MIS 375. Understanding new ventures in the e-commerce environment.

562 Entrepreneurship 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.

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

564 Economic Theory I 3 Same as Econ 500.

565 Economic Theory II 3 Same as Econ 501.

566 Economic Theory III 3 Same as Econ 502.

567 Economic Theory IV 3 Same as Econ 503.

568 Economic Theory V 3 Same as Ag Ec 504.

569 Statistics for Economists 4 Same as Ag Ec 510.

570 Econometrics I 3 Same as Econ 511.

571 Econometrics II 3 Same as Ag Ec 512.


573 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.

574 Investment Analysis 3 Prereq Fin 325. A decision-making approach to the problems of asset management for personal and business portfolio.

575 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.

576 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.

577 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.
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 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 May be repeated for credit; cumulative maximum 12 hours. Prereq Fin 504 and 512 or permission of instructor. Topics may include financial theory and empirical methods as applied to financial management, investments, international finance, and markets/institutions.
600 Special Projects or Independent Study Variable credit. S, F grading.
702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Ins
320 Risk and Insurance 3 Prereq B Law 210; Econ 102. Types of risk and methods of protection; life, health, property, and liability insurance, principles of risk management.
321 Life Insurance and Financial Planning 3 Prereq Ins 320. Management of the life, health, and disability insurance risks facing the individual, family, and society; financial planning.
322 Property and Liability Insurance 3 Prereq Ins 320. Management of property and liability risks facing individuals and businesses; study of bonds; marine, workers compensation and unemployment insurance.
498 Insurance Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization. S, F grading.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.
520 Employee Benefits Risk Management 3 Social and group insurance and retirement plans in the context of employee benefits risk and insurance management.
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.

International Business
1 Bus
375 Aspects of Sustainable Development 3 Same as Econ 375.
380 [M] International Business 3 International political economy; business relationships between nations; corporations and economic institutions.
399 Foreign Study V 1-15 May be repeated for credit; cumulative maximum 15 hours. Prereq program approval required. Participation in approved programs of study at a foreign educational institution. S, F grading.
415 Law of International Trade 3 Same as B Law 415.
416 [M] Public International Law 3 Same as B Law 416.
417 Comparative Economic Systems 3 Same as Econ 416.
435 International Tourism 3 Same as H A 435.
436 International Accounting and Taxation 3 Same as Acctg 436.
453 Comparative International Management 3 Same as Mgt 453.
470 International Trade and Finance 3 Same as Econ 470.
471 The Economics of Regional Integration 3 Same as Econ 471.
472 Economic Development 3 Same as Econ 472.
481 International Finance 3 Prereq Fin 325; I Bus 380. Financial problems of multinational businesses; international financial environment, long-term capital commitment to an international venture, financial techniques for firm operation.
482 [M] International Marketing 3 Prereq I Bus 380; Mktg 360. Opportunities, characteristics, trends in foreign markets; alternative methods; strategies; organizational planning, control; problems of adapting American marketing concepts and methods.
492 Small Business Policy 3 Same as Mgt 492.
496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.
498 International Business Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization, S, F grading.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.
580 International Business Management 3 Decision making in the international environment; political, cultural, and economic risk management.
581 International Finance 3 Prereq Fin 502, I Bus 380 or 580. Principles of international finance; financial management of multinational corporations; international investments.
582 International Marketing Management 3 Prereq Mktg 505. Principles of international marketing, marketing decision making in international environments, problems of adapting marketing programs to international markets.
595 Seminar in Research and Theory Development 3 Theory development and research on business in a global context.
596 Doctoral Topics 1 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Advanced topics in international business.
600 Special Projects or Independent Study Variable credit. S, F grading.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Management
Mgt
101 Introduction to Business 3 Introduction to the practice of business with explanations of business environments, strategy, organization, functional areas, terminology, processes, tasks and ethics.
301 Principles of Management and Organization 3 Principles of management and administration aimed at improving effectiveness of all types of organizations.
315 [S,D] Women in Management and Leadership 3 Same as W St 315.
401 [M] Leadership Skills for Managers 3 Prereq Mgt 301. Leadership, motivation, team building, group dynamics, interpersonal and group conflict, and design.
450 Personnel and Human Resources Management 3 Prereq Dec S 215; Mgt 301. Policy and practice in human resource utilization, selecting, training, motivating, evaluating, and compensating employees; labor relations; EEO legislation.
453 Comparative International Management 3 Cross-cultural implications of management theories and approaches; the role of national culture in management theory and practice.
455 Staffing 3 Prereq Mgt 450 or c/. Selection issues; methods of forecasting, planning, recruitment, selection; analysis of psychometric properties of tests; techniques for assessing reliability and validity.
456 [M] Compensation Administration 3 Prereq Mgt 450 or c/. Theoretical, research, and applied issues related to the compensation of employees.
485 Seminar in Negotiations 3 Bargaining skills across a broad range of business settings; experiential work. Credit not granted for both Mgt 485 and 585.
487 Business Ethics 3 Prereq Mgt 301. The nature and sources of ethical and dilemma and dilemmas and issues and organizations in the context of business settings. Credit not granted for both Mgt 487 and 545.
489 Entrepreneurial Management 3 Prereq Econ 101, 102; Fin 325, Mgt 301, MIS 250, Mktg 360. Philosophy and nature of entrepreneurship for all business organizations; analytical, financial, and interpersonal entrepreneurial skills.
491 Business Strategy and Policy 3 Prereq Dec S 340, Fin 325, Mgt 301, MIS 250, Mktg 360. Overall management of the firm; top-level decision-making and planning.
492 Small Business Policy 3 Prereq Acctg 230; B Law 210, Fin 325, Mgt 301, Mktg 360. Application of management theory and principles to small firms; applied consulting experience with operating businesses.
496 Seminar 3 May be repeated for credit.
498 Management Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.

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

501 Management of Organizations 3 Leading, organizing, decision making, planning, controlling, conflict management, and behavior in work organizations.

582 Personnel and Human Resource Management 3 Prereq Mgt 501. Human resources and personnel administration; selection, training, compensation, performance appraisal, labor relations, health and safety, EEO legislation.

583 Organization Design 3 Development and design of contemporary systems of organization and management.

585 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.

588 Management of Innovation 3 Prereq Graduate standing. Technological transitions and technology strategy: knowledge and creativity in organizations; managing innovation processes, technical employees, and cross-functional cooperation.

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

153 BASIC Programming 3 Same as Cpt 513.

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 Front Page; 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 data server 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.

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

325 Internet Business Programming 3 Prereq Cpt/S/MIS 153. Basic principles of designing and developing Internet-based business applications.

356 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. Capabilities of the Internet to support and enable electronic commerce; effective design and implementation; managerial issues.

417 [M] Law of Cyberspace 3 Same as B Law 417.

418 Ethics in Cyberspace 3 Same as B Law 418.

425 Emerging Technologies II 3 May be repeated for credit; cumulative maximum 12 hours. Prereq MIS 250. Special and advanced topics in MIS.

426 Emerging Technologies I 3 May be repeated for credit; cumulative maximum 12 hours. Prereq MIS 250. Special and advanced topics in MIS.

448 IS Project Team Management 3 Prereq Mgt 301; MIS 250. Information systems project team management principles and strategies, project planning, development, and execution; use of collaboration technologies to support team.

472 [M] Systems Analysis and Design 3 Prereq MIS 372; two of Cpt S 121, Cpt S 153, MIS 271. The application of systems analysis and design to the development of information systems; systems development life cycle.

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

498 Management Information Systems Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.
497 [M] Promotion Management 3 Prereq Mkgt 360. Text and case approach to integrating promotion into the marketing plan; methods, organization, communications, media selection, and campaigns.
478 [M] Sales Management 3 Prereq Mkgt 360. The role of selling in the marketing mix; problems in planning, organizing, evaluating, and controlling the sales force.
482 [M] International Marketing 3 Same as Bus 482.
487 Independent Research 3 Prereq Mkgt 368, 457. May be repeated for credit; cumulative maximum 6 hours. Independent research project with faculty member including problem statement, literature review, hypotheses, data collection, and reporting of results.
495 [M] Marketing Management 3 Prereq Mkgt 360; 6 hours Mkgt. 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, 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. Prereq Mkgt 360. Cooperative educational internship with a business, government or nonprofit organization.
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.
507 Computers and Systems for Managers 3 Data base concepts, management information systems, design of application programs, and computer concepts.
510 Consumer Behavior 3 Prereq Mkgt 360. The investigation of social-psychological phenomena affecting consumer decision processes; learning theory and communication.
517 Consumer Behavior and E-Commerce 3 Prereq Mkgt 360 or equivalent. Theories of social science explaining the mental, emotional, and physical activities underlying consumer behavior in traditional physical and digital environments.
540 Internet Marketing 3 Prereq Mkgt 360. Case and project-based course exploring marketing’s role in the Internet and electronic commerce.
547 [M] Advanced Consumer Behavior 3 Prereq Mkgt 407 or 417. Advanced theories of the cognitive, affective and behavior dimensions underlying the decisions and actions of consumers.
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 Mkgt 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 Mkgt 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 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.

Real Estate

305 Real Estate 3 Prereq B Law 210, Econ 102. Relationships between location and value; patterns of urban land use; legal, financial, and organizational frameworks of the real estate business.
405 [M] Real Estate Valuation 3 Prereq Fin 325; 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 E 305. The case method of analyzing management policies, practices, and decision making in real estate firms.
407 Real Estate Investments 3 Prereq Fin 325; 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, 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.
The curriculum in chemical engineering provides a strong, fundamental general education, 2) materials and energy balances, 3) a 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.

When students graduate from this department they should be able to use their education to be confident, independent engineers capable of effective problem solving.

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 REQUIREMENTS (132 HOURS) ✔FYDA

Freshman Year  
First Semester  
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Intercultural [L,G,K] (GER) 3
Math 171 [N] (GER) 4
  
Second Semester  
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
Math 172 4

Sophomore Year  
First Semester  
Ch E 201 3
Ch E 298 1
Chem 340 3
Chem 341 2
Math 273 2
Phys 201 [P] (GER) 4
  
Second Semester  
Ch E 211 3
Ch E 298 3
Chem 342 or MBioS 303 3 or 4
Econ 101 [S] or Econ 102 [S] (GER) 3
Math 315 3
Phys 202 [P] (GER) 4

Junior Year  
First Semester  
Ch E 301 3
Ch E 310 3
Ch E 398 1
Chem 331 3
E E 304 2
Engl 402 [W] (GER) 3
Chemistry Elective 3
  
Second Semester  
Ch E 334 2
Ch E 398 1
Chem 333 1
Chem 336 2
Math Elective 3
Tier III Course, Humanities or Social Sciences (GER) 3

Senior Year  
First Semester  
Ch E 432 3
Ch E 441 3
Ch E 450 3
Ch E 498 1
Ch E Elective 3
Engineering Elective 3 3
  
Second Semester  
Ch E 433 [M] 2
Ch E 451 [M] 3
Ch E 498 1
Ch E Electives 3 6
Technical Elective 3 3

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.


3 Chem 220, 401, 410, 415, 421, 424, 425, 427, 430, 461, 480, 481, 482, or SoilS 421. If a students 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 advisor.

4 Choose from: Math 375, 415, 423, 440, 441, 443, or 448.

5 Ch E 418, 435, 461, 465, 467, 475, 476, 481, 485, 487, 495 and 499. Of the total of 9 credits in chemical engineering electives, a cumulative total of only 3 credits is allowed in Ch E 495 and 499 combined.

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 E 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 can not 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.

Must be approved by advisor 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 en-
eering can be obtained from the departmental of-
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 physi-
cal science 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 En-
eering 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 be-
cause of sophomore professional requirements and
course sequences. A strong preparation in chemistry,
mathematics, and physics is necessary prior to trans-
fer to minimize the time required at Washington State
University to complete bachelor's degree require-
ments. Inquiries concerning specific questions are
welcomed. Since there is a restriction on the total
number of majors in the department, transfer students
should make application for admission as soon as
possible.

Preparation for Graduate Study
As preparation for work toward an advanced degree,
a student should have completed substantially the
equivalent of the above schedule of studies. A Bach-
elor of Science degree in Chemical Engineering from
an institution accredited by ABET normally will sat-
isfy 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 de-
gree in Chemical Engineering.

Description of Courses

Chemical Engineering

Ch E

201 Chemical Process Principles and Calcula-
tions 3 Prereq Chem 106; Math 172 or c//. Fun-
damental concepts of chemical engineering prob-
lem-solving techniques and applications in stoichio-
metry, material and energy balances, and
phase equilibria.

211 Process Simulation 3 Prereq Chem 106;
Math 172; Math 315 or c//. Computer solutions to
problems in chemical engineering processing.

277 Special Topics: Study Abroad 3 Same
as M E 277. Computer science and process
engineering principles in assessment and remediation of
industrial problems in air pollution, water pollution,
and solid and hazardous waste.

301 Chemical Engineering Thermodynamics
3 Same as M E 301. Chemical and physical nature of the interface
including the molecular basis for interfacial forces
and resulting macroscopic phenomena.

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
Chem 301, 310, Ch E major. Design calculations,
operations, and evaluation of equipment used in
fluid flow, heat transfer, and evaporation.

334 Chemical Engineering Separations 2
Prereq Ch E 301, 310, 332 or c//. Design and
evaluation of equipment used in continuous
contacting.

396 Technical Seminar 1 May be repeated for
credit; cumulative maximum 2 hours. S, F grad-
ing.

418 Materials Processing 3 Prereq Ch E 334;
Chem 105, 106; Ch E major. Processing of semi-
continuous reactant materials.

432 [M] Chemical Engineering Lab I 3 (1-6)
Prereq Ch E 310, 321, 332, 334. Statistical design
and analysis of experiments; safety; experiments in
heat and mass transfer; separations, other unit op-
erations, kinetics, control; technical reports and
presentations.

433 [M] Chemical Engineering Lab II 2 (0-6)
Prereq Ch E 432. Laboratory experiments in
heat and mass transfer; separations, other unit
operations, kinetics, control; design calcula-
tions; technical reports and presentations.

435 Modern Separation Processes 3 Prereq
Chem 301, 310, 332, 334; Ch E major. Design and
operation of separation processes important to
emerging technologies; bioseparations, super-
critical extraction.

441 Process Control 3 Prereq BSysE 310, Ch E
211 or Ch E 310. Measuring instruments, automatic
control, process and instrument characteristics
and theory applied to industrial control prob-
lems.

450 Chemical Process Analysis and Design I
3 Prereq Ch E 301, 321, 334. Chemical engineering
design; computer tools; safety and environmental
constraints; cost and equipment optimization.

451 [M] Chemical Process Analysis and Design
II 3 Prereq Ch E 450. Development, de-
sign, and economic evaluation of chemical and
related processes as practiced in industry.

461 Introduction to Nuclear Engineering 3
Same as M E 461.

465 Integrated Envirochemical Engineering 3
Prereq Ch E 334. Application of chemical engineer-
ing principles in assessment and remediation of
industrial problems in air pollution, water pollution,
and solid and hazardous waste.

475 Introduction to Biochemical Engineering
3 Prereq Ch E 310, 332. Application of chemical
engineering principles to the process-
ing of biological and biochemical materials.

476 Biomedical Engineering Principles 3
Prereq Ch E 301, 310. The application of chemi-
cal engineering principles to biomedical pro-
cesses.

477 Special Topics: Study Abroad 3 Same
as M E 477. Special topics in chemical engi-
neering with emphasis on the practical and
theoretical aspects of mass and energy transport.

481 Special Topics in Chemical Engineering
V 1-3 Interfacial phenomena, high temperature ma-
terials processes, integrated circuit manufac-
turing, in situ destruction of hazardous waste.

485 Interfacial Phenomena 3 Prereq Ch E 301,
310. Chemical and physical nature of the interface
including the molecular basis for interfacial forces
and resulting macroscopic phenomena.

487 Food Process Engineering Design 3 Same
as BSysE 482.

495 Chemical Engineering Internship 2 May be
repeated for credit; cumulative maximum 4
hours. Students work full time in engineering as-
signments in approved industries with prior ap-
proval of advisor and industrial supervisor. S, F
grading.

496 Cooperative Education Internship V 2-4
May be repeated for credit; cumulative maxi-
mum 4 hours. Off-campus Cooperative Educa-
tion Internship with business, industry, or gov-
ernment unit. S, F grading.

498 Technical Seminar 1 May be repeated for
credit; cumulative maximum 2 hours. For jun-
ior and senior students in Ch. E. S, F grading.

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

510 Transport Processes 3 Transport of mass, en-
ergy, and momentum; unsteady and steady states
as applied to chemical processing; macroscopic and
microscopic analyses. Cooperative course
taught jointly by WSU and UI (ChE 515).

515 Convective Heat Transfer 3 Same as M E 515.

523 Basic Concepts in Catalysis 3 (2-3) Prepara-
tion and characterization of supported heteroge-
neous catalysts, mechanistic interpretation of
surface reactions and chemisorption, deactiva-
tion, and kinetics from lab experiments. Coop-
erative course taught by WSU, open to UI stu-
dents (ChE 523).

525 Polymer Reaction Engineering 3 Prereq
Chem 321. Reaction engineering applied to po-
limerization reactions; effects on polymeriza-
tion rate, molecular weight, and copolymer compo-
sition. Cooperative course taught by WSU, open to UI students (ChE 525).

526 Microscopic Thermodynamics 3 Same as M
E 526.

527 Macroscopic Thermodynamics 3 Same as M
E 527.

529 Chemical Engineering Kinetics 3 Interpre-
tation of kinetic data and design of nonideal
chemical reactors; fundamentals of heteroge-
neous catalysis, catalyst preparation, character-
ization, and theory. Cooperative course taught
jointly by WSU and UI (ChE 529).

541 Chemical Engineering Analysis 2 Math-
ematical analysis of chemical engineering oper-
a tions and processes; mathematical modeling
and computer application.

546 Mass Transfer Operations 3 Diffusional and
equilibrium operations. Cooperative course
taught jointly by WSU and UI (ChE 546).

551 Discrete Digital Control 3 (2-3) Prereq Ch E
441. Design and implementation of digital con-
trol algorithms; z-transforms; state space meth-
ods. Cooperative course taught by WSU, open to
UI students (ChE 551).

552 Process Optimization 3 Fundamentals associ-
ated with the optimization of chemical process
plants.
Biochemical Engineering 3 Chemical engineering applied to biological systems; fermentation processes, biochemical reactor design, downstream processing, transport phenomena in biological systems, biochemical technology. Cooperative course taught jointly by WSU and UI (ChE 560).

Fundamentals of Multiphase Environmental Processes 3 Prereq graduate standing. Principles of material and energy balances, reaction kinetics, phase equilibria, chemistry and microbiology governing environmental transport phenomena.

Current Topics in Multiphase Environmental Systems 3 Prereq graduate standing. Interdisciplinary course focused on reactions and processes at air, water, and soil interfaces in the environment.

Advanced Plant Design 2 or 3 Design of process plants for optimum cost and economic return; scale-up of pilot plants. Cooperative course taught by the UI (ChE 571), open to WSU students.

Protein Biotechnology 3 Same as MBioS 574.

Introduction to Biochemical Engineering 3 Graduate-level counterpart of ChE 475; additional requirements. Credit not granted for both ChE 475 and 575.

Biomedical Engineering Principles 3 Graduate-level counterpart of ChE 476; additional requirements. Credit not granted for both ChE 476 and 576.

Interfacial Phenomena 3 Graduate-level counterpart of ChE 485; additional requirements. Credits not granted for both ChE 485 and 585.

Advanced Topics in Chemical Engineering V 1-3 May be repeated for credit; cumulative maximum 9 hours. Filtration, reaction engineering, two-phase flow, non-Newtonian fluids, interfacial phenomena, fluidization, novel separations, biomedical engineering.

Research Methods and Presentation I 2 Prereq graduate standing. Establish sound practices for graduate research and presentation of results; techniques used for performing through literature searching and establishing and testing research hypotheses.

Research Methods and Presentation II 2 Prereq graduate standing. Establishing sound practices for presentation of research programs and research results.

Research Seminar 1 May be repeated for credit. Seminar presentations on current topics in chemical engineering research. S, F grading.

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

Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Chemistry

Professor and Department Chair, R. G. Yount; Professor and Department Chair, R. G. Yount; Associate Professors, K. A. Peterson; Assistants Professors, A. Li, S. Zhou; Adjunct Faculty, S. D. Colson, J. Cowin, J. N. S. Evans, J. Futrell, T. Ichibe, C. Kang; Instructors, H. Place, B. Weissbart; Preceptors, M. Finnegan, L. Henschel; WSUTC Coordinator, S. D. Metcalf.

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 radiochemical techniques in a wide range of applications.

- Environmental chemistry, which applies knowledge of chemical interactions to the study of the environment, is fundamental to any efforts to protect and improve environmental integrity. It involves the analysis of any materials found in the environment, whether as the result of human activity or as the result of natural processes. It focuses on the identification and measurement of chemical materials in rocks and minerals, in natural waters, and in the atmosphere.

- Inorganic chemistry, which has as its center the study of the vast majority of the known elements, includes investigations into the mechanisms of electron transfer in complex materials. It is closely related to bioinorganic chemistry which includes the study of metal containing proteins by advanced computer methods and the investigation of the structures of solids and surfaces by a variety of instrumental methods including photon spectroscopies, X-ray techniques, and surface characterization.

The department is on the approved list of the American Chemical Society.

The department offers courses that lead to the degree of Bachelor of Science in Chemistry, with options in materials chemistry and environmental chemistry, Master of Science in Chemistry, and Doctor of Philosophy (Chemistry).

The Department of Chemistry offers a program leading to both a Bachelor of Science and Master of Science in Chemistry within a period of five years. Students wishing to enroll in the program must declare their intentions at the end of the junior year and begin research for the MS thesis while still undergraduates. The program is designed so that the BS degree will normally be awarded at the end of four years and the MS approximately 15 months later. In order to enter this program the student’s undergraduate record must show that the final transcript will satisfy the requirements for admission to the WSU Graduate School. Further information on this program can be obtained from the Department of Chemistry.

A student beginning undergraduate work will begin the study of chemistry with Chem 101, 105 or 115, depending on preparation. In order to take most courses in chemistry above the 100-level, the student must complete one of the following sequences: Chem 101, 105 and 106; 101, 102, and 106; 105 and 106; 115 and 116.

The Department of Chemistry provides major parts of the course work leading to degrees in the Department of Biochemistry and Biophysics and the Program in Materials Science. Students whose interests span chemistry and biology or chemistry and physics should see the section on the appropriate program in this catalog.

Certification Requirements

A student may certify as a chemistry major after completing 30 credit hours, including Chem 105 and 106 (or 115 and 116), each with a grade of C or better.

Minor in Chemistry

Completion of a minor in chemistry requires at least 17 hours from 200-level and above chemistry courses. All chemistry courses for the minor must be completed with a grade of C or better. Three hours from BioChE 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.

Schedule of Studies

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.
### GENERAL CHEMISTRY REQUIREMENTS (121 HOURS) 

#### Freshman Year

**First Semester**
- Chem 105 [P] (GER) or 115<sup>1</sup> 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 171 [N] (GER) 4

**Second Semester**
- Biol 103 [B] (GER) 4
- Chem 106 [P] (GER) or 116<sup>4</sup> 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

**Second Semester**
- Chem 342 3
- Chem 243 2
- MBioS 303 4
- Phys 202 [P] (GER) 4
- Social Sciences [S,K] (GER) 3

#### Junior Year

**First Semester**
- Chem 220 2
- Chem 222 2
- Chem 330 1
- Chem 331 3
- Chem 333 1
- Chem 398 1
- Intercultural [I,G,K] (GER) 3
- Math 220 2
- GenEd 111 [A] (GER) 3
- Math 172 4

**Second Semester**
- Arts & Humanities [H,G], Intercultural [I,G,K], Second Semester Hours
- Chem 410 [M] 3
- Chem 425 2
- Chem 426 2
- Chem 499 2
- Tier III Course (GER) 3
- Elective 3

**Second Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Chem 401<sup>3</sup> 3
- Chem 495 2
- Chem Electives<sup>3</sup> 3
- Engl 301 [W] or 402 [W] (GER) 3

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. All 500-level chemistry courses also meet this requirement. Up to 3 hours of 300-level Math of Phys may be used, with permission. Chem 499 and 495 may not be used.

### ENVIRONMENTAL CHEMISTRY REQUIREMENTS (125 HOURS) 

#### Freshman Year

**First Semester**
- Chem 105 [P] (GER) or 115<sup>1</sup> 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 171 [N] (GER) 4

**Second Semester**
- Biol 103 [B] (GER) 4
- Chem 106 [P] (GER) or 116<sup>4</sup> 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

**Second Semester**
- Biol 103 [B] (GER) 4
- Chem 106 [P] (GER) or 116<sup>4</sup> 4
- GenEd 111 [A] (GER) 3
- Math 172 4

**Junior Year**

**First Semester**
- Chem 220 2
- Chem 222 2
- Chem 330 1
- Chem 331 3
- Chem 333 1
- Chem 398 1
- Intercultural [I,G,K] (GER) 3
- Math 220 2
- GenEd 111 [A] (GER) 3
- Math 172 4

**Second Semester**
- Arts & Humanities [H,G], Intercultural [I,G,K], Second Semester Hours
- or Social Sciences [S,K] (GER) 6
- Chem 342 3
- Chem 243 2
- MBioS 303 4
- Phys 202 [P] (GER) 4
- Social Sciences [S,K] (GER) 3

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 include: Chem 415, 416, 421, 422, 424, 427, 430, 461, 480, 481, 514, 517, 518, and other 500-level courses; C E 341, 401, 415; Geol 102, 350, 403, 475, 480, 483; SoilS 201, 301, 415, 416, 421; Es/RP 101, 150, 406, 445, Biol 372; Phil 370; BsySc 351; microbiology courses.
4 Offered alternate years only. Students may take this course during the second semester of their junior year.

### MATERIALS CHEMISTRY REQUIREMENTS (120 HOURS) 

#### Freshman Year

**First Semester**
- Chem 105 [P] (GER) or 115<sup>1</sup> 4
- Engl 101 [W] (GER) 3
- Math 171 [N] (GER) 4

**Second Semester**
- Biol 103 [B] (GER) 4
- Chem 106 [P] (GER) or 116<sup>4</sup> 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

**Second Semester**
- Biol 103 [B] (GER) 4
- Chem 106 [P] (GER) or 116<sup>4</sup> 4
- GenEd 110 [A] (GER) 3
- Math 171 [N] (GER) 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.
**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Chem 340</td>
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<td>Math 273</td>
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<td>Phys 201 [P] (GER)</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Chem 342</td>
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<tr>
<td>Chem 243</td>
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<tr>
<td>MBioS 303</td>
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<tr>
<td>Phys 202 [P] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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**Junior Year**

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<tbody>
<tr>
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<tr>
<td>Chem 333</td>
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<td>Chem 398</td>
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<td>Chem 334 [M]</td>
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<tr>
<td>Elective</td>
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<th>Senior Year</th>
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<tr>
<td>Chem 410</td>
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<td>Chem 499</td>
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<td>MSE 302</td>
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<tr>
<td>Chem 480</td>
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<tr>
<td>Chem 495</td>
<td>1</td>
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<tr>
<td>Engl 301 [W] or 402 [W] (GER)</td>
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<tr>
<td>MSE 321</td>
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<tr>
<td>Elective</td>
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</tbody>
</table>

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.

**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, organic, or physical chemistry present 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, basis, pH, equilibrium, kinetics, energy, applications to life sciences.

- **102 [P] Chemistry Related to Life Sciences** (4-3-3)
  - Prereq: Chem 101, 105, or 115 with a grade of C or better. Organic functional groups and their reactions; polymers, macro-molecules; carbohydrates, lipids, proteins, enzymes, nucleic acids, hormones, applications to life sciences.

- **105 [P] Principles of Chemistry I** (4-3-3)
  - Prereq: one year high school chemistry or Chem 101; Math 107 or c/.
  - Stoichiometry, structure, gases, liquids, solids, solutions, thermodynamics, kinetics, equilibrium, volumetric, and gravimetric analysis. Credit not granted for both Chem 105 and 115.

- **106 [P] Principles of Chemistry II** (4-3-3)
  - Prereq: Chem 105 or 115 with a grade of C or better; Math 107 with a C or better or placement into Math 140 or higher. Acid-base, ionic, molecular, solubility, oxidation/reduction equilibria, kinetics, electrochemistry; systematic chemistry of the elements; coordination compounds. Credit not granted for both Chem 106 and 116.

- **115 [P] Chemical Principles Honors I** (4-3-3)
  - Prereq: permission of dept; two years high school chemistry or one year Chem and one year Phys; Math 140 or 171 or c/.
  - Stoichiometry, bonding, structure, gases, liquids, solids, solutions, thermodynamics, chemical reactions, analysis, spreadsheets in chemistry. Credit not granted for both Chem 115 and 105.

- **116 [P] Chemical Principles Honors II** (4-3-3)
  - Prereq: Chem 115 with a grade of C or better or permission of dept. Descriptive inorganic chemistry, organic chemistry principles, acid/base, ionic and molecular equilibrium, electrochem, thermodynamics, kinetics. Laboratory interfaced with computers. Credit not granted for both Chem 116 and 106.

- **150 [Q] Molecules and Science** (3-2-3)
  - Chemical basis and molecular structure of everyday materials; polymers, medicines, etc.

- **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** (3-3)
  - Prereq: Chem 332 with a grade of C or better or c/.
  - Properties of substances; periodic systems; oxidation-reduction and acid-base characteristics interpreted on the basis of atomic and molecular structure.

- **410 [M] Advanced Synthesis and Characterization** (3-4-3)
  - Prereq: Chem 342 and Chem 332 each with a grade of C or better. Synthesis and characterization of organic and inorganic compounds and solid-state materials; modern synthetic technology; characterization methods, and laboratory techniques.

**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.

- **501 Advanced Inorganic Chemistry** 3 Rec Chem 332. Periodic table survey, typical compounds and their reactivity; models and reactivity, acid-base, oxidation-reduction, and electronic structure contributions.


- **503 Advanced Topics in Inorganic Chemistry** V 1-3 May be repeated for credit. Rec Chem 501. Recent significant developments. Cooperative course taught by WSU, open to UI students (Chem 503).

- **504 Organometallic Chemistry** 3 Prereq Chem 501. Structure, bonding, and reaction chemistry of organotransition metal compounds; applications to homogenous catalysis. Cooperative course taught by UI (Chem 564), 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, nonstoichiometric compounds; chemical bonding; inorganic reaction mechanisms. Cooperative course taught by UI (Chem 565), open to WSU students.

- **508 Topics in Inorganic Chemistry** V 1-9 Rec Chem 501. Coordination compounds; halogens; less familiar elements; catalysis, interstitial, nonstoichiometric compounds; chemical bonding; inorganic reaction mechanisms. Cooperative course taught by UI (Chem 564), open to WSU students.


**Analytical, Environmental, and Radiochemistry**

**Chem**

- **220 Quantitative Analysis** 2 Prereq Chem 106, or Chem 116 with a grade of C or better; Rec c/.

- **222 Quantitative Analysis Laboratory** 2 (0-6)
  - Prereq Chem 220 with a grade of C or better or c/.
  - Application of classical methods in volumetric and gravimetric analysis; acid-base, redox and EDTA titrations; ion-exchange chromatography; introduction to spectrophotometry. Cooperative course taught by WSU, open to UI students (Chem 253).

- **415 Trace Element Analysis** 2 Rec Chem 425. Techniques for the analysis of inorganic materials at trace levels. Credit not granted for both Chem 415 and 515.
416 Trace Organic Analysis  
2 Rec Chem 425. Methods for the determination of trace amounts of organic compounds. Credit not granted for both Chem 416 and 516.

421 Radiochemistry and Radiotracers  
2 Prereq Chem 331 with a grade of C or better. Credit not granted for both Chem 421 and 521.

422 Radiochemistry Laboratory 1 (0-3) Prereq Chem 222, 331; Phys 202 each with a grade of C or better. Credit not granted for both Chem 422 and 522.

424 Activation Analysis 2 (1-3) Prereq Chem 331 with a grade of C or better. Credit not granted for both Chem 424 and 524.

425 Quantitative Instrumental Analysis 2  
Prereq Chem 332 or 336 with a grade of C or better or c//. Computer interfacing applicable to chemical instrumentation; principles and applications of modern chromatography, spectroscopy, and electrochemical techniques.

426 Quantitative Instrumental Analysis Laboratory 2  
Prereq Chem 332 or Chem 425 with a grade of C or better or c//. Laboratory experience in modern analytical methods.

481 [M] Environmental Chemistry I  
3 Prereq Chem 220 and 222 each with a grade of C or better. Chemistry of natural and pollutant species and their reactions in the atmospheric environment. Credit not granted for both Chem 481 and 581.

482 [M] Environmental Chemistry II  
3 Prereq Chem 220, 222, and 332 each with a grade of C or better. Chemistry and reactions of natural and pollutant species on the aquatic environment, sediments and soils.

489 Environmental Chemistry Project 3 (1-6)  
Prereq Chem 425 and 426 each with a grade of C or better. Laboratory projects in environmental chemistry or environmental analytical chemistry.

512 Bioanalysis 2  
Rec Chem 220 or 425. Methods for the measurement of biological compounds.

514 Mass Spectrometry 2  

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; instrumental methods; separation in analysis; spectroscopic techniques.

521 Radiochemistry and Radiotracers 2  
Graduate-level counterpart of Chem 421; additional requirements. Credit not granted for both Chem 421 and 521.

522 Radiochemistry Laboratory 1 (0-3)  
Graduate-level counterpart of Chem 422; additional requirements. Credit not granted for both Chem 422 and 522.

524 Activation Analysis 2  
(1-3) Graduate-level counterpart of Chem 424; additional requirements. Credit not granted for both Chem 424 and 524.

527 Environmental Chemistry 2  
Natural water chemistry, Agri processes, kinetics, thermodynamics, modeling in lake, river, and sea water.

529 Selected Topics in Analytical Chemistry  
V 1-3 May be repeated for credit. Selected current developments. 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.

Physical Chemistry  

330 Problem Solving in Physical Chemistry 1  
Prereq Chem 106 or 116; Math 172 each with a grade of C or better. Quantitative methods of data analysis and chemical concept development; emphasis on multivariable, matrix, and computer methods.

331 Physical Chemistry 2  
Prereq Chem 415; Math 172; Phys 202 each with a grade of C or better; c// in Chem 333. Concepts of physical chemistry; basic thermodynamics; free energy and entropy; phase equilibrium; properties of solutions of electrolytes and non-electrolytes.

332 Physical Chemistry 3  
Prereq Chem 331 with a grade of C or better. Elementary quantum theory; molecular structure and spectra; bonding theory; reaction rates; photochemistry and radiation chemistry; energy states and statistical thermodynamics.

333 Physical Chemistry Laboratory 1  
(0-3) Prereq Chem 331 with a grade of C or better or c//. Experiments selected to meet the individual needs of students in Biol, C.E., Chem, or MSE.

334 [M] Physical Chemistry Laboratory 1  
(0-3) Prereq Chem 332 with a grade of C or better or c//; Chem 333 with a grade of C or better. Continuation of Chem 333. Experiments in molecular structure, atomic molecular spectroscopy, chemical kinetics.

336 Classical Physical Chemistry 2  
Prereq Chem 331 with a grade of C or better. Concepts and applications of classical physical chemistry; transport properties of materials; electrochemistry; colloid; polymers and macromolecules.

338 Environmental Physical Chemistry 3  
Prereq Chem 220, 222, Math 140 each with a grade of C or better. Physical chemistry for students in the environmental and biological sciences; emphasis on results and applications of physical chemical principles.

430 Applied Spectroscopy 2  
Prereq Chem 332 with a grade of C or better. Theory and practice of photon- and electron-based spectroscopic techniques.

461 Atomic and Molecular Phenomena 3  
Prereq Chem 332, Math 273 each with a grade of C or better. Basic concepts of atomic structure and spectroscopy; quantum mechanics of atomic phenomena. Credit not granted for both Chem 461 and 561.

480 Solid State Chemistry 3  
Prereq Chem 332 with a grade of C or better. Properties, bonding and synthesis of solid state material; crystalline and amorphous solids and coatings.

509 Chemical Group Theory 3  
Rec Chem 332. Mathematical definitions of groups and representations, applications to chemical structure and spectra, ligand field theory, chemical reactions and selection rules.

531 Advanced Physical Chemistry 3  
Rec Chem 332. Physical chemistry; quantum mechanics, thermodynamics, chemical bonding, and electrochemistry.

532 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.

534 Chemical Statistical Mechanics 3  
Rec Chem 331, 352. Statistical theory of thermodynamic variables and chemical equilibrium; calculation of equilibrium properties from spectral data; fluctuations about equilibrium; quantum statistics.

535 Computational Quantum Chemistry  
3 Rec Chem 332 or Phys 303. Computer simulation of chemical behavior using latest methods; theory and practice of quantum chemistry.

536 Quantum Chemistry 3  
Rec Chem 332 or 531. Quantum mechanics applied to chemical systems; states of atoms and molecules, transitions and spectra.

537 Advanced Topics in Physical Chemistry V  
1-3 May be repeated for credit. Selected subjects; irreversible thermodynamics; chemical bonding; NMR; ligand field theory; x-ray diffraction; neutron diffraction. Cooperative course taught by WSU, open to UI students (Chem 537).

561 Atomic and Molecular Phenomena 3  
Graduate-level counterpart of Chem 461; additional requirements. Credit not granted for both Chem 461 and 561.

564 Molecular Phenomena 3  
Rec Chem 461 or 561, 509; Phys 450. Phenomena which yield information on structures, energy levels, and interactions of molecules in solid, liquid, and gaseous phases.

Organic Chemistry  

Chem 240 Elementary Organic Chemistry 4 (3-3)  
Prereq Chem 102, or 106, or 116 each with a grade of C or better. Survey of functional group structure and reactions; biochemical applications. Credit not granted for both Chem 240 and 340. Offered fall and spring only.

340 Organic Chemistry I 3 (2-2)  
Prereq Chem 106 or 116 with a grade of C or better. Structure and function in organic chemistry; reaction mechanisms; molecular orbital theory, alkanes, alkenes, alkenes, alkenes, and radicals; problem solving skill development. Credit not granted for both Chem 340 and 240.

341 Organic Chemistry Laboratory 2 (0-6)  
Prereq Chem 340 with a grade of C or better or c//.

342 Organic Chemistry 3  
Prereq Chem 340 with a grade of C or better; Rec Chem 341 or c//. Continuation of Chem 340; dienes, aromatics, carboxyls, amines, carbohydrates, proteins, nucleic acids.

343 Organic Chemistry Laboratory 2 (0-6)  
Prereq Chem 340 and 341 each with a grade of C or better, Chem 342 with a grade of C or better or c//.

344 Problem Solving in Organic Chemistry I  
(0-2) Prereq c// with Chem 342. Problem analysis and critical thinking development in organic chemistry; to be taken with Chem 342.
Department of Civil and Environmental Engineering


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).

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.

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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.

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### Department of Civil and Environmental Engineering

#### Senior Year

The alternate senior year schedule shown below is offered to those students interested in studying with an infrastructure engineering emphasis. This would substitute for the senior year above and complete the study schedule for the Bachelor of Science degree in Civil Engineering.

### SOPHOMORE YEAR

#### First Semester

<table>
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<tr>
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<tr>
<td>Cpt S 203 or 251</td>
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<tr>
<td>Econ 101[S], or Econ 102 [S]</td>
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<tr>
<td>Math 220</td>
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<td>Math 273</td>
<td>2</td>
</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
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#### Second Semester

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<tr>
<td>C E 215</td>
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</tr>
<tr>
<td>Chem 106 [P]*, Geol 102 [P], or Phys 202 [P] (GER)</td>
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<td>M E 212</td>
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<td>Math 315</td>
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### JUNIOR YEAR

#### First Semester

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<td>C E 315</td>
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<td>C E 317 [M]</td>
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<td>C E 330</td>
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<tr>
<td>C E 341</td>
<td>3</td>
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<tr>
<td>E E 304 or M E 301</td>
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<td>Complete Writing Portfolio</td>
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#### Second Semester

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<td>C E 322</td>
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<td>C E 351</td>
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<td>C E 463</td>
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<td>Intercultural [I,G,K] (GER)</td>
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### SENIOR YEAR

#### First Semester

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<tr>
<td>C E Electives*</td>
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#### Second Semester

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<td>C E 476 or 465*</td>
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<td>C E Elective*</td>
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### THE ALTERNATE SENIOR YEAR STRUCTURAL ENGINEERING EMPHASIS

#### Senior Year

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<tr>
<td>C E 473*</td>
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<tr>
<td>C E 474* or 465*</td>
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### THE ALTERNATE SENIOR YEAR INFRASTRUCTURE ENGINEERING EMPHASIS

#### Senior Year

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<tr>
<td>C E 430* or 465*</td>
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<td>C E 435*</td>
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<tr>
<td>C E 476* or 434*</td>
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<tr>
<td>C E 480 [M]</td>
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<tr>
<td>Tier III Humanities or Social Sciences Course (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

### THE ALTERNATE SENIOR YEAR ENVIRONMENTAL ENGINEERING EMPHASIS

#### Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C E 415* or 471*</td>
<td>3</td>
</tr>
<tr>
<td>C E Electives*</td>
<td>6</td>
</tr>
<tr>
<td>C E Elective (Rec C E 418 or 471)</td>
<td>3</td>
</tr>
</tbody>
</table>

1. Classes that must be completed prior to certification.
2. Elective courses: The total credit hours for elective courses must be distributed such that at least 3 courses, not including the lab, are DES (design emphasis) in order for a student to qualify for a degree. C E electives including C E laboratory will be selected from at least two different areas (environmental, geotechnical, hydraulics, structural, and transportation/pavement).
3. Strongly recommended for an Environmental Engineering emphasis.
4. Either class may be chosen, but C E 465 is required. C E 465 may be taken in either fall or spring semester, depending on the choice of class.

### Certification

Certification into the department is the formal acceptance of the student by the department to pursue a professional academic program in that department.

Students who will be completing at least 45 semester hours of course work at the end of the semester including C E 211, Math 171, 172, and Phys 201 or equivalents are eligible to apply for certification into the Department of Civil and Environmental Engineering. The number of students certified into the department depends upon the available resources and facilities. The best qualified students, based on cumulative g.p.a. and grades in the prerequisite courses listed above, will be certified into the department until the carrying capacity is reached. Preference will be given to applications received before April 15 for the fall semester and November 15 for the spring semester.

### Transfer Students

Students who are planning to transfer to civil engineering at Washington State University from other institutions should coordinate their program with the department chairperson to establish an integrated program leading to the bachelor's degree. Inquiries concerning specific questions are welcome. A strong preparation in mathematics and physics is necessary prior to transfer to minimize the time required to complete the degree requirements. The requirements for direct entry into the Department of Civil and Environmental Engineering upon transfer are the same as listed above for certification. Applications from transfer students will be handled by the Admissions Office.

### Preparation for Graduate Study

As preparation for academic work toward an advanced degree in civil engineering or environmental engineering, a student should have completed substantially the equivalent of the above schedule of studies.

### Description of Courses


### Civil Engineering

C E 120 Innovation in Design Same as M E 120.

174 Introduction to Meteorology and the Atmospheric Environment Introduction to meteorology, the atmospheric processes, weather, air pollution, and environmental topics.
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
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
Principles of earth-dam design, failures, considerations in construction; principles governing flow of water through soils. Cooperative course taught by UI (Gees 535), open to WSU students.

508 Air Pollution Control Engineering
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
Prereq graduate-geotechnical engineering-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 geotechnical engineering. Cooperative course taught jointly by WSU and UI (CE 569).

512 Dynamics of Structures 3 Equations of motion, free vibration, damping mechanisms, harmonic, impulse, and seismic loading; shock and seismic response spectra, time and frequency domain analysis, modal analysis, structural dynamics in building codes. Cooperative course taught jointly by WSU and UI (CE 543).

514 Advanced Mechanics of Materials 3 Elastic stress-strain relations, shear center, unsymmetrical bending, curved beams, elastic stability, elastically supported beams, energy methods, thin plates, shells. Cooperative course taught jointly by WSU and UI (CE 510/ME 539).

515 Environmental Measurements 3 (1-6) Graduate-level counterpart of C E 415; additional requirements. Credit not granted for both C E 415 and 515.

516 Unsteady Closed-Discharge Flow 3 Prereq C E 351. Derivation of governing equations; finite difference methods; methods of characteristics; boundary conditions; computational procedures; transients caused by centrifugal pumps.

517 Mechanics of Sediment Transport 3 Cohesive and non-cohesive sediments; initiation of sediment motion; sediment transport; suspended and bed load entrainment; models of sediment transport for alluvial and gravel bed streams, sediment-flow interaction; river morphology and ecological restoration.

518 Hazardous Waste Engineering 3 or 4 Prereq graduate standing. Graduate-level counterpart of C E 418; additional requirements. Credit not granted for both C E 418 and 518.

519 Hazardous Waste Treatment 3 Prereq C E 518. Graduate-level counterpart of C E 419; additional requirements. Credit not granted for both C E 419 and 519.


524 Geotechnical Earthquake Engineering 3 Faulting and seismicity; site response analysis; influence of soil on ground shaking; soil liquefaction; probabilistic seismic hazard assessment; seismic earth pressures; seismic slope stability. Cooperative course taught by WSU, open to UI students (CE 566).

525 Soil and Site Improvement 3 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 Probability and Statistical Models in Engineering 3 Engineering applications of probability and statistics; Monte Carlo simulation; model estimation and testing; probabilistic characterizations of loads and material properties; risk and reliability analyses. Cooperative course taught jointly by WSU and UI (CE 541).

532 Finite Elements 3 Theory of finite elements; applications to general engineering systems considered as assemblies of discrete elements. Cooperative course taught jointly by WSU and UI (CE 542).

533 Advanced Reinforced Concrete Design 3 Prereq C E 433. Composite design; slab design; limit state design; footings; retaining walls; deep beams; brackets and corbels; torsion; seismic design; shear walls. Cooperative course taught by WSU, open to UI students (CE 547).

534 Prestressed Concrete and Reinforced Masonry Design 3 Graduate-level counterpart of C E 434, additional requirements. Credit not granted for both C E 434 and 534. Cooperative course taught by WSU, open to UI students (CE 442).

535 Advanced Finite Elements 3 Prereq graduate standing. 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 (for E 555).

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.

539 Advanced Wood Engineering 3 Prereq CE 436 or equiv. Engineering properties of wood materials; theory and design of wood composites, connections and load-sharing systems; performance criteria and durability.

540 Instrumental Analysis of Environmental Contaminants 3 (1-6) Prereq C E 415. Theory and methods of analysis of water and water suspensions for contaminants using electro-metric, spectrophotometric, and chromatographic techniques. Cooperative course taught by WSU, open to UI students (CE 530).

541 Environmental Engineering Unit Operations 3 Prereq C E 442; Math 315. Theory and design of physical and chemical unit operations of water and wastewater treatment systems. Cooperative course taught jointly by WSU and UI (CE 531).

542 Environmental Engineering Unit Processes 3 Prereq C E 541. Biochemical energetics and kinetics; biological waste treatment processes; nutrient removal; advanced wastewater treatment design. Cooperative course taught jointly by WSU and UI (CE 534).

543 Advanced Topics in Environmental Engineering Practice V 1-4 May be repeated for credit; cumulative maximum 8 hours. Analysis and evaluation of air/water/solid pollution problems, new measurement methods, hazardous waste treatment, global climate change, and water/wastewater treatments.

544 Wastewater Treatment System Design 3 (2-3) Prereq C E 542 or c/. Application of unit operations and processes to design of integrated treatment systems; critical review of designs. Cooperative course taught jointly by WSU and UI (CE 532).

545 Industrial Waste Problems 3 Prereq C E 542 or c/. Evaluation and feasible solutions of industrial waste problems. Cooperative course taught by WSU, open to UI students (CE 551).

546 Parameters for Synthesis of Wood Composition Materials 3 Same as MSE 546.

547 Principles of Environmental Engineering 3 Prereq C E 315, 341; Math 315. Principles of chemistry, microbiology, thermodynamics, material and energy balances, and transport phenomena, for environmental engineers.
548 Advanced Topics in Water Quality Engineering Systems V 2-4 May be repeated for credit; cumulative maximum 6 hours. Analysis and evaluation of natural water systems for retention and transport of pollutants and their associated impacts.

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).

564 Applied Traffic Operations 3 Prereq C E 322 or instructor approval. Fundamentals of traffic operations needed to prepare a desiring 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 mixes.

569 Field Methods in Hydrogeology 3 Prereq C E 475. Fluid systems; analytic and numerical solutions techniques; review of statistical geohydrologic methods.

570 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).

571 Meteorology 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 473. 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).

574 Dynamics of Groundwater Contamination 3 Prereq C E 475. Fundamentals of groundwater flow, pollutant transport, modeling data analysis, well sifting/sampling and interaction of pollutants with sediments/soils.

575 Advanced Groundwater Hydraulics 3 Prereq Geol 475, Math 315. Modeling of subsurface flow in saturated, unsaturated, and multi-fluid systems; analytic and numerical solutions techniques; review of statistical geohydrologic methods.

577 Advanced 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 design of 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 533).

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 589. 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; radiation 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 in communication, with an emphasis in advertising, applied intercultural communication, broadcast news, broadcast production, broadcast management, communication studies, journalism, media and the law, organizational communication, or public relations. Students may also fashion a general communication curriculum. The undergraduate program reflects a blending of professional, liberal arts, and theory and research courses. The School cooperates with the College of Agriculture and Home Economics in support of the agricultural communications option.

Supplementing the classrooms and laboratories of the Murrow School are the professional internship programs, campus radio and television facilities, and student publications, including a daily newspaper.

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.

Schedule of Studies

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 communication degree programs:

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Com 101 or ComSt 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>ComSt 102 [C] (GER) or Com 101</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Communication Elective (GER)</td>
</tr>
</tbody>
</table>

**ADVERTISING REQUIREMENTS (120 HOURS)**

**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)</td>
<td>3</td>
</tr>
<tr>
<td>Com 245</td>
<td>3</td>
</tr>
<tr>
<td>Com 270</td>
<td>3</td>
</tr>
<tr>
<td>Com 295</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Emphasis Elective</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Adver 380</td>
<td>3</td>
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<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Com 321</td>
<td>3</td>
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<tr>
<td>ComSt 335</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>4</td>
</tr>
<tr>
<td>Minor Elective</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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<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>Com Development</td>
<td>3</td>
</tr>
<tr>
<td>Com Elective</td>
<td>3</td>
</tr>
<tr>
<td>ComSt 435</td>
<td>3</td>
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<tr>
<td>Minor Elective</td>
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**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400 level Emphasis Elective</td>
<td>3</td>
</tr>
<tr>
<td>Com Literacy Elective</td>
<td>3</td>
</tr>
<tr>
<td>Com Literacy Elective (For Enrichment)</td>
<td>3</td>
</tr>
<tr>
<td>Emphasis Elective</td>
<td>3</td>
</tr>
<tr>
<td>Seminar [M]</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Adver 480</td>
<td>3</td>
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<tr>
<td>Com Development Elective (For Enrichment)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Electives</td>
<td>6</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
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</tbody>
</table>

**Sophomore Year**

- **First Semester**
  - Hours

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Com 409, satisfies Com Development</td>
<td>3</td>
</tr>
<tr>
<td>Com 440, satisfies Com Literacy</td>
<td>3</td>
</tr>
<tr>
<td>Com Development (for Enrichment)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>6</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
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</table>

**Senior 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>Com 245</td>
<td>3</td>
</tr>
<tr>
<td>Com 270</td>
<td>3</td>
</tr>
<tr>
<td>Com 295</td>
<td>3</td>
</tr>
</tbody>
</table>

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1. Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
2. Any seminar numbered 475 in communication.
Edward R. Murrow School of Communication

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Com 415</td>
<td>Biological Sciences (GER) 4</td>
<td></td>
</tr>
<tr>
<td>Com 324 or 401</td>
<td>Foreign Language, if necessary, or Elective</td>
<td>3</td>
</tr>
<tr>
<td>Com 410, 440, 450, 460, ComSt 324, 385, 401, Jour 425.</td>
<td>Communication Literacy Electives: Com 410, 440, 450, 460, ComSt 324, 385, 401, Jour 425.</td>
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**Second Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Semester</td>
<td>Hours</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Junior Year</td>
<td>First Semester</td>
<td>Hours</td>
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<tr>
<td>300-400-level Emphasis Elective</td>
<td>3</td>
<td></td>
</tr>
<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>Senior Year</td>
<td>First Semester</td>
<td>Hours</td>
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<tr>
<td>300-400-level Emphasis Elective</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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<td></td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Jour 330</td>
<td>3</td>
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**Senior Year**

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<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Second Semester</td>
<td>Hours</td>
<td>3</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
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<tr>
<td>Jour 425</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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**MEDIA AND THE LAW REQUIREMENTS (120 HOURS)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore Year</td>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
<td></td>
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<tr>
<td>Com 245</td>
<td>3</td>
<td></td>
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<tr>
<td>Com 270</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Com 295</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<td>Emphasis Elective</td>
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<td>Medical Proficiency [N] (GER)</td>
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<tr>
<td>Jour 425</td>
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<td>Second Semester</td>
<td>Hours</td>
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<td>Foreign Language, if necessary, or Elective</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td>Junior Year</td>
<td>First Semester</td>
<td>Hours</td>
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<tr>
<td>300-400-level Emphasis Elective</td>
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<td>Com 415</td>
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<td>Foreign Language, if necessary, or Elective</td>
<td>3</td>
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<tr>
<td>Jour 305</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<td>Com Development Elective</td>
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<td>Senior Year</td>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>300-400-level Elective</td>
<td>3</td>
<td></td>
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<tr>
<td>Com Elective</td>
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<td>Emphasis Elective</td>
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<tr>
<td>Preprofessional Capstone</td>
<td>3</td>
<td></td>
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</tbody>
</table>

**Sophomore Year | First Semester | Hours |
| Arts & Humanities [H,G] or Social Sciences [S,K] (GER) | 3 |
| Com 245 | 3 |
| Com 270 | 3 |
| Com 295 | 3 |
| Math Proficiency [N] (GER) | 3 |
| Emphasis Elective | 3 |
| Second Semester | Hours | 3 |
| Foreign Language, if necessary, or Elective | 3 |
| Physical Sciences [P] (GER) | 4 |
| Social Sciences [S,K] (GER) | 3 |
| Junior Year | First Semester | Hours |
| 300-400-level Emphasis Elective | 6 |
| Com 415 | 3 |
| Foreign Language, if necessary, or Elective | 3 |
| Jour 305 | 3 |
| Second Semester | Hours | 3 |
| Biological Sciences [B] (GER) | 4 |
| Com Development Elective | 3 |

**Senior Year | First Semester | Hours |
| 300-400-level Elective | 3 |
| Com Elective or Bdcst 465 | 3 |
| Emphasis Elective | 3 |
| Preprofessional Capstone | 3 |
Sophomore Year

First Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Com 245 3
- Com 270 3
- Com 295 3
- Emphasis Elective 3
- Math Proficiency [N] (GER) 3
- Tier III Course [T] (GER) 3
- 300-400-level Emphasis Elective 3
- Jour 305 3
- Mktg 360 3
- P R 312 3
- Complete Writing Portfolio
- Second Semester
- Arts & Humanities [H,G] (GER) 3
- Foreign Language, if necessary, or Elective 3
- Employment Elective 3
- 300-400-level Emphasis Elective 3
- Biological Sciences [B] (GER) 4
- Com 409 3
- Com Development Elective 3
- P R 313 3
- Senior Year
- First Semester
- Com Development Elective 3
- ComSt 475 [M] 3
- Electives 3
- Second Semester
- Foreign Language, if necessary, or Electives 3
- Internship or Com Electives (for enrichment) 6
- Tier III Course [T] (GER) 3
- 300-400-level Emphasis Elective 3
- Biological Sciences [B] (GER) 4
- Com 335 3
- Internship or Com Electives (for enrichment) 6
- Tier III Course [T] (GER) 3
- Second Semester
- Arts & Humanities [H,G] (GER) 3
- Foreign Language, if necessary, or Elective 3
- Emphasis Elective 3
- 300-400-level Emphasis Elective 3
- Biological Sciences [B] (GER) 4
- Com 409 3
- Com Development Elective 3
- P R 313 3
- Junior Year
- First Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Com 245 3
- Com 270 3
- Com 295 3
- Emphasis Elective 3
- Math Proficiency [N] (GER) 3
- Tier III Course [T] (GER) 3
- 300-400-level Emphasis Elective 3
- Biological Sciences [B] (GER) 4
- Com 409 3
- Com Development Elective 3
- P R 313 3
- Second Semester
- Arts & Humanities [H,G] (GER) 3
- Foreign Language, if necessary, or Elective 3
- Emphasis Elective 3
- Seminar 3
- 300-400-level Emphasis Elective 3
- Biological Sciences [B] (GER) 4
- Com 409 3
- Com Development Elective 3
- P R 412 3
- Tier III Course [T] (GER) 3

Agricultural Communications

This is a major in the Department of Biological Systems Engineering in cooperation with the School of Communication. The student declaring this major must complete the requirements of the general agricultural curriculum and accumulate a minimum of 30 hours in the School of Communication, including any communication courses used to satisfy general agricultural requirements. Those electing this major should make that decision known as early as possible in their academic careers. The student should consult with a School of Communication advisor before registering for elective courses. Specialized programs patterned for the individual career aspirations may be developed in conjunction with the head of the School of Communication or a designated representative.

Advising Option: Adv 380, 381 [M], 382, 480, Ag Ec 350, Com 245, 295, 409, ComSt 424 [C,M], 455.

Broadcast News Option: Bdcst 350, 360, 365 [M], 465 [M], 466, 481, Com 245, 295, 409, 415, ComSt 324 [C,M], 335.

Broadcast Production Option: Bdcst 350, 355, 360, 455, 466, 481, Com 245, 295, 409, 415, ComSt 324 [C,M], 335.

Communication Studies Option: Com 245, 295, 409, 415, ComSt 324 [C,M], 335.

Communication Studies Option: Com 245, 295, 409, 415, ComSt 324 [C,M], 335.

Public Relations Option: Ag Ec 350, Com 245, 295, 409, ComSt 424 [C,M], 455, Jour 305 [M], P R 312.

Journalism Option: Com 245, 253, 295, 409, 415, 440, 460, Jour 305 [M], 330, 425 [M].

Public Relations Option: Ag Ec 350, Com 245, 295, 409, ComSt 235 [C], 324 [C,M], 335, Jour 305 [M], P R 312, 313, 412.

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

Com 101 [S] Mass Communications and Society 3

138 Freshman Special Topics 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

245 Language and Human Behavior 3 Prereq sophomore standing. Theories of language as it influences human behavior in meaning production, problem solving and construction of social reality.

253 Photocommunications 3 (2-3)

270 Introduction to Mass Communication Theory 3 Prereq sophomore standing. Theories of mass communication and how it influences behavior.
483 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.

485 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, presentational skills, conflict resolution, assessment leadership, group dynamics.

540 Media Ethics 3 Graduate-level counterpart of Com 440; additional requirements. Credit not granted for both Com 440 and 540.

550 Mass Media and the First Amendment 3 Graduate-level counterpart of Com 450; additional requirements. Credit not granted for both Com 450 and 550.

560 Mass Media Criticism 3 Graduate-level counterpart of Com 460; additional requirements. Credit not granted for both Com 460 and 560.

570 Communication Theory 3 Relevant theories and research from mass and interpersonal communication.

572 Mass Media, Social Control, and Social Change 3 Prereq graduate standing. Study of the forces that influence the media’s role as an agent of social control or social change.

580 Topics in Communication 3 May be repeated for credit; cumulative maximum 12 hours. Contemporary, specialized, or technical topics in communication.

585 Interpersonal and Small Group Communication 3 Theory and research in interpersonal and small group communication.

591 Qualitative Research Methods 3 Historical, textual, and legal methodologies for theory-based evaluative and discourse studies in communication.

599 Seminar in Communication 3 May be repeated for credit; cumulative maximum 6 hours. Special topics in rhetoric, communication, and public address.

600 Special Projects or Independent Study 3 Variable credit. S, F grading.

701 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.

Advertising

Adver

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

380 Advertising Principles and Practices 3 Advertising history, theory, and practice by advertising agencies and organizations.


382 Media Planning 3 Prereq Adver 380. Media planning theories, strategies, and practices.

475 Seminar in Advertising 3 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, 381, 382, Com 409, Mktg 360. Professional research practices in advertising.

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

495 Advertising Professional Internship 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, identity 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.
150 Introduction to Broadcast Equipment 1 (0-3) By interview only. Orientation to broadcast equipment; audio, studio television, and field television, as applied to various functions. S, F grading.

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

350 Introduction to Telecommunications 3 (2-3) Prereq Com 295. Fundamentals of the history, structure, economics and operations of telecommunications and cable.

355 Studio TV Production 3 (1-6) Prereq Bdcst 150, 350.

360 Writing for Television 3 (2-3) Prereq Bdcst 350. Theory and practice of writing scripts: analysis of dramatic, comedic, commercial, documentary scripts; writing scripts for each genre.


455 Field TV Production 3 (1-6) 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 9 hours. By interview only. For seniors and graduate students.

481 Broadcast Management 3 Prereq senior standing. Credit not granted for both Bdcst 481 and 585.

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

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.

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

302 [C] Advanced Public Speaking 3 Advanced principles of public speaking and their practical implementation for effective communication.

324 [CM] 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.

355 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 Broadcast Performance/Interpretation 3 Voice and diction, interpretation of copy for broadcast.

385 Advanced Principles of Interpersonal Communication 3 Prereq ComSt 185. Theoretical literature relevant to analyzing relationships; students use this information to analyze a relationship.

401 Persuasion 3 Theories of persuasion and social action; study of strategies and techniques for the persuasive use of language and other symbols.

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 424 and Com 524.

435 Advanced Organizational Communication 3 Prereq ComSt 335. Advanced concepts, models and methods for in-depth analysis of contemporary organizations. Credit not granted for both ComSt 435 and 535.

451 Readers Theatre for the Classroom 3 Principles of literature selection, scriptwriting and staging of readers theatre for classroom. Credit not granted for both ComSt 451 and 551.

475 Seminar in Communication Studies 3 By interview only. May be repeated for credit; cumulative maximum 9 hours. For seniors and graduate students.

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

485 Applied Interpersonal Communication 3 Prereq ComSt 185 or 365. How a person relates to others; cognitive and affective aspects of the process.

488 Structure of Conversation 3 Prereq Com 245. Symbol systems and their interrelation in sequential organization in everyday communication. Credit not granted for both ComSt 488 and 588.

495 Communication Studies Professional Internship V 2 (0-6) to 12 (0-36) 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.

535 Advanced Organizational Communication 3 Prereq graduate standing. Graduate-level counterpart of ComSt 435; additional requirements. Credit not granted for both ComSt 435 and 535.

551 Readers Theatre for the Classroom 3 Graduate-level counterpart of ComSt 451. Credit not granted for both ComSt 451 and 551.

572 (573) Avoiding Communication 3 Prereq Com 509. Examination of theories about why people avoid communication, data relative to these theories, and extant intervention literature.

588 Structure of Conversation 3 Prereq graduate standing, Com 501. Graduate-level counterpart of ComSt 488; additional requirements. Credit not granted for both ComSt 488 and 588.

Journalism

Jour

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

305 [M] Reporting 3 Prereq Com 295.

306 News Gathering and Dissemination 3 Prereq Com 295; certified Com major. Research and reporting of news and features, for public relations specialists.

330 News Editing 3 (2-3) Prereq Jour 305 or by interview. Basic copy editing and design skills for print media.

405 [T] The Costs of Free Speech 3 Prereq completion of one Tier I and three Tier II courses; junior standing. Exploration of the affects of and social political, economic and cultural constraints on free expression in contemporary America.

417 [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 313. 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.

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

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
P R
275 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.
312 Principles of Public Relations 3 Prereq Com 295. Principles, theories, methods and objectives of public relations; public relations problems and practices.
313 [M] Public Relations Techniques and Media Usage 3 (2-3) Prereq Com 295, Jour 305; P R 312. Practical applications of public relations theory and techniques with emphasis on writing and media use.
412 Public Relations Management and Campaign Design 3 Prereq Com 409, P R 312, Jour 306 or P R 313. Application of public relations principles, management, persuasion theory and research methods to public relations issues. Credit not granted for both P R 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.
483 Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.
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, A. Kuo; Professors, J. Peterson; Associate Professors, Y. Flores Niemann, S. Fowler, R. Ong; Assistant Professors, J. Alamillo, M. Guteti, T. Schenck, J. Streamas; 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 multicultural nation and world.

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 designed for students who wish to study in depth one particular ethnic group. Students choose among African American Studies, Asian Pacific American Studies, Chicano/Latino Studies, or Native American Studies. The option in Multicultural 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. Several CAC faculty also hold 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 awards several scholarships to deserving students. It sponsors a film and lecture series. It supports the multicultural student centers of WSU and cooperates with other programs and departments to promote multicultural democratic initiatives at WSU.

Schedule of Studies

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity course within their General Education Requirements. This course adds no credit hours to the total GERs and American Diversity courses also fulfill GER requirements in another area, 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 39 hours in one of the following curricular options within the major. The coursework in each option fosters an in-depth 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

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<td>CAC 101 [J] (GER) or 201†</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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Second Semester

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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</thead>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Option Requirement†</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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</tbody>
</table>

† Students electing the option in Ethnic Studies take CAC 101.
‡ For the option in Pre-Law, take Phil 201 [H]. For all other options, Am St 216 [H] is strongly recommended.
§ 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 Multicultural Studies, choose a total of 24 hours from the following: six credits in African American studies courses, six credits in Asian Pacific American studies 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 Crm J 403. For the option in Cultural Studi...
Department of Comparative American Cultures

ies, 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.

4 For the option in Pre-Counseling, take Psych 105 [S]. For all other options, W St 200 [S] is strongly recommended.

OPTION 1
ETHNIC STUDIES REQUIREMENTS

(120 HOURS) ✓FYDA

AFRICAN AMERICAN, ASIAN PACIFIC AMERICAN, CHICANA/O, LATINA/ O, OR NATIVE AMERICAN

Sophomore Year
First Semester Hours
CAC 303 3
Communication Proficiency [C,W] (GER) 3
Math Proficiency [N] (GER) 3
Outside Option Requirement1 3
Electives 3

Second Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
CAC 201 3
Intercultural [I,G,K] (GER) 3
Option Requirement2 3
Electives 3

Junior Year
First Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
CAC 401 3
Option Requirement3 3
Writing In The Major Elective [M] 3
Electives 6

Second Semester Hours
300-400-level Electives 9
Option Requirement1 3
Tier III Course (GER)4 3

Senior Year
First Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
CAC 405 3
Option Requirement2 3
Electives5 3
Writing In The Major Elective [M] 3

Second Semester Hours
300-400-level Electives 9
Tier III Course (GER)4 3

1 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.
2 Choose 6 credits from CAC 220, 300, 302, 403, 405, 440, and 491.
3 Recommended electives include CAC 300, 405, 440, and 491.
4 W St 484 is recommended.

OPTION 2
MULTICULTURAL STUDIES REQUIREMENTS

(120 HOURS) ✓FYDA

Sophomore Year
First Semester Hours
CAC 303 3
Communication Proficiency [C,W] (GER) 3
Math Proficiency [N] (GER) 3
Option Requirement1 3
Outside Option Requirement2 3

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

Junior Year
First Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Option Requirement1 3
Physical Sciences [P] (GER) 4
Writing In The Major Elective [M] 3
Complete Writing Portfolio

Second Semester Hours
CAC 401 3
Option Requirement2 6
Writing In The Major Elective [M] 3
Outside Option Requirement1 3

Senior Year
First Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Option Requirement1 3
Electives2 9

Second Semester Hours
300-400-level Electives 9
Outside Option Requirement2 3
Tier III Course [T] (GER) 3

1 Complete CAC 300, 302, 337, 403; and choose two from Psych 324, 350, or EdPsy 322.
2 Choose one from CAC 131, 235, 332, 336, 337, 338; choose one from CAC 111, 211, 314, 411, 413; choose one from CAC 151, 255, 355, 356, 357, 453, or 454; choose one from CAC 171, 217, 372, 375, 376, 377, 378, or 475.
3 Recommended electives include CAC 405, 440, and 491.

OPTION 3
PRE-COUNSELING REQUIREMENTS

(120 HOURS) ✓FYDA

Sophomore Year
First Semester Hours
CAC 303 3
Communication Proficiency [C,W] (GER) 3
Math Proficiency [N] (GER) 3
Option Requirement1 3
Outside Option Requirement2 3

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

Junior Year
First Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Option Requirement1 3
Physical Sciences [P] (GER) 4
Writing In The Major Elective [M] 3
Complete Writing Portfolio

Second Semester Hours
CAC 401 3
Option Requirement2 6
Writing In The Major Elective [M] 3
Outside Option Requirement1 3

Senior Year
First Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Option Requirement1 3
Electives2 9

Second Semester Hours
300-400-level Electives 9
Outside Option Requirement2 3
Tier III Course [T] (GER) 3

1 Choose 9 credits from CAC 220, 300, 302, 403, 440, or 491.
2 Choose 15 hours in one ethnic area of concentration; at least half must be at the 300-400-level.
3 Recommended electives include CAC 300, 440, 491.
4 W St 484 is recommended.

OPTION 4
MULTICULTURAL LITERATURE AND PEDAGOGY REQUIREMENTS

(120 HOURS) ✓FYDA

Sophomore Year
First Semester Hours
Communication Proficiency [C,W] (GER) 3
Math Proficiency [N] (GER) 3
Option Requirement1 3
Outside Option Requirement2 3

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

Junior Year
First Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Option Requirement1 3
Physical Sciences [P] (GER) 4
Writing In The Major Elective [M] 3
Complete Writing Portfolio

Second Semester Hours
CAC 401 3
Writing In The Major Elective [M] 3

118
Option Requirement 1 3
Electives 9

Senior Year

First Semester

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Option Requirement 1 3
Electives 9

Second Semester

300-400-level Electives 9
Option Requirement 1 3
Tier III Course (GER)* 3

Second Semester

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Option Requirement 1 3
Electives 9

Second Semester

300-400-level Electives 9
Option Requirement 1 3
Tier III Course (GER)* 3

Electives 1

Senior Year

First Semester

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Option Requirement 1 3
Electives 9

Second Semester

300-400-level Electives 9
Option Requirement 1 3
Tier III Course (GER)* 3

Second Semester

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Option Requirement 1 3
Electives 9

Second Semester

300-400-level Electives 9
Option Requirement 1 3
Tier III Course (GER)* 3

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. 9 hours must be from the following courses: CAC 101, 201, 303, 401. Of the remaining 9 hours, 6 must be at the 300-400-level.

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 African Studies courses, with 9 hours in the African Studies Minor core sequence. 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 131, 235, 331, Pol S 460.

African Languages: Students may take up to 6 hours of an African language to fulfill elective requirements by making special arrangements with the Independent Study Program.
220 [H,D] Introduction to Multicultural Literature 3 Survey of multicultural literature including European American, African American, Asian American, Chicana/o, and Native American authors.

227 [I] Introduction to African Studies 3 African continent; history, politics, art, and their effects today.


254 [S,D] Comparative Latino/a Cultures 3 Comparison of the contemporary and historical experiences of Latinos and Latinas in the United States, and their relations with other ethnic minority groups and the majority populations.

255 [S,D] Chicana/o History 3 The historical development of the Chicano/a community in relation to the dynamics of race relations, class structure, ethnic identity, gender, and sexuality in American society from 1521 to the 20th century.


298 [S,D] History of Women in American Society 3 Same as Hist 298.

300 [S,M] Intersections of Race, Class and Gender 3 Same as W St 300.

301 Comparative American Cultural Studies 3 Comparative analyses of the historic colonialist practices in the Americas and the continued colonial presence in contemporary culture.

302 [S,D] Social Psychology of Prejudice 3 Causes and nature of prejudice from social, psychological, and cultural theoretical perspectives.

303 [M] Research Methods and Strategies 3 Quantitative, qualitative, and/or literary research methods and strategies particular to the study of race, ethnicity, and culture.


369 Queer Identities in Contemporary Cultures 3 Same as W St 369.

313 [G] Asian Pacific American Literature 3 Asian American fiction, drama, poetry, and other arts, 1900 to present; impact of Asian/Pacific American culture and experience upon these works.

314 [M] Topics in Asian Pacific American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Trends, themes, major writers.

331 [G] African American Literature 3 Introduction to major issues and major works in the African American literary tradition.

332 [M] Topics in African American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Same as Engl 322.

335 [S] Civil Rights Movement in America 3 Historical development and analysis of the Civil Rights Movement in the United States from 1900 to present.

336 [H,D] African American Folklore 3 Prereq CAC 131 or 101. African American folk and material culture, examining the African legacy, slave narratives, various genres of music, song, dance, and verbal performance.

337 [S,D] Black Social Psychology 3 Prereq CAC 101 or 131. Approaches and perspectives in contemporary psychology that lead to a broader understanding of the social psychological functioning of African Americans.


339 [I] Black Politics 3 Same as Pol S 324.

351 Spanish for Spanish Speakers 1 3 Same as Span 324.

353 [G,M] Chicana/o Literature 3 Chicana/o literature, narrative (novel and autobiography), poetry, short story, drama; development of writing skills.

354 Vanguard Poetics in Chicana/o and Latina/o Writers 3 Concepts and techniques of Chicana/o and Latina/o vanguard poetry.

355 Chicana/o National Literature 3 Investigation of the educational experiences, both current and historical, of Chicana/os in the United States.

356 Bilingual Bicultural Education 3 Philosophical, legal, cultural, linguistic, and curricular aspects of bilingual education.

357 Chicana/o Identity, Power, and Empowerment 3 History and evolution of Chicana/o identity as an essential means toward understanding the Chicana/o experience.

359 Chicana/o and Latina/o Politics 3 Character, role, and goals of Chicano/Latino politics; contemporary Chicano/Latino issues.

372 [S,D] Native American Women in Traditional and Contemporary Societies 3 Prereq one of Anth 101, 214, CAC 101, 171, or W St 200. Exploration of roles and activities of women in Native American societies; how traditional gender roles have developed and changed.

373 [G,M] Native American Literature 3 Native American literature, by and about the original inhabitants, image and counter-image, with emphasis on the 20th century.

375 [K] North American Indian History, Precontact to Present 3 Same as Hist 308.

376 [K] America Before Columbus 3 Same as Anth 331.

377 [K] Native Peoples of North America 3 Same as Anth 320.

378 [S,D] Contemporary Native Peoples of the Americas 3 Same as Anth 327.

379 [H] Native Americans in Film 3 Critical examination of films and videos featuring American Indians; traces the history of the Indian as subject of films and as filmmaker.

380 [S,D] Immigration and Citizenship in the Global Economy 3 Examination of past and current notions of immigration and citizenship in North American and European countries as defined by government officials, political organizations, community groups, and popular culture.

385 Topics in Canadian Studies 1 Same as Hist 315.

398 [S,D] History of Women in American West 3 Same as Hist 398.

401 Seminar in Culture and Power 3 Complex power relations that develop among competing local, regional, national, and global culture(s).
470 [T] Federal Native American Resource Settlement Models 3 Prereq completion of one Tier I and three Tier II courses. Issues involving indigenous ownership of natural resources within the US.

475 [T,D] Indians of the Northwest 3 Prereq Anth 320, CAC 171, 375, 377, or Hist 308; completion of one Tier I and three Tier II courses. History and ethnography of Native Americans of the Coast and Plateau; historic relationships with Europeans and Euro-Americans, and other Native Americans, Asian Americans, and Chicanas/os.

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

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

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

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

490 Leadership in an American Context: Issues of Race and Gender 3 Prereq junior standing. Contextualization of leadership on the national, local, and grassroots levels in the United States through examining issues of race and gender.

491 Seminar in Theories of Racism and Ethnic Conflicts 3 Prereq CAC 101. Provides general knowledge of the history of racist ideas and the social, political, and cultural contexts underlying ethnic conflicts.

492 Advanced Topics in Ethnic Studies 3 Prereq course in CAC. May be repeated for credit; cumulative maximum 9 hours; total hours allowed for CAC 492, 493, 494 is 9 hours. A reading and discussion course that explores special topics in ethnic studies.

493 Advanced Topics in Ethnic Studies 3 Prereq course in CAC. May be repeated for credit; cumulative maximum 9 hours; total hours allowed for CAC 492, 493, 494 is 9 hours. A reading and discussion course that explores special topics in ethnic studies.

494 Advanced Topics in Ethnic Studies 3 Prereq course in CAC. May be repeated for credit; cumulative maximum 9 hours; total hours allowed for CAC 492, 493, 494 is 9 hours. A reading and discussion course that explores special topics in ethnic studies.

495 Special Topics in Comparative American Cultures 3 May be repeated for credit; cumulative maximum 6 hours. Prereq course in CAC. Cross-cultural studies on Asian Pacific Americans, Blacks, Chicanas/os, and Native Americans.

496 Internship in Comparative American Cultures V 1-3 Prereq junior standing, 6 hours of CAC core course sequence, 6 hours in CAC areas of emphasis. Internship component for Comparative American Cultures majors and minors. S, F grading.

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

COMPUTER ENGINEERING OR COMPUTER SCIENCE
See School of Electrical Engineering and Computer Science.

Program in Criminal Justice

Associate Professor and Chair, S. Stehr; Professors, T. Cook, M. Cottam, L. LeLoup, N. Lovrich, D. Nice, O. Marenin; Associate Professors, A. Appleton, C. Clayton, F. Lutze (Criminal Justice Director), A. Mazur, T. Preston, G. Russell; Assistant Professors, D. Brody, K. Mason, M. Pickrell, T. Pratt, M. Smith, E. Weber; Instructor, M. Erp.

The Program in Criminal Justice, located in the Department of Political Science, offers substantive studies in criminal justice in conjunction with a liberal arts education. It prepares students for a broad range of careers (law enforcement, correction, juvenile justice, private security, non-profit) or the pursuit of graduate study or law school, develops leadership qualities, and promotes the ideal of professional achievement in public service.

The program focuses on the multi-disciplinary study of crime and its control, including the components, processes, and programs of the criminal justice system. The curriculum emphasizes the analysis and theories of crime and deviance, criminal law, and social control, and research on and evaluation of criminal justice systems, administration, and management.

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.

Schedule of Studies

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 who major in criminal justice must complete the 12 credit criminal justice core (Crm J 101, 150, 320, 330) 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 REQUIREMENTS (122 HOURS) ✔FYDA

Freshman Year
First Semester Hours

Arts & Humanities [H,G] (GER) 3  
Crm J 101 3  
Engl 101 [W] (GER) 3  
GenEd 110 [A] (GER) 3  
Social Sciences [S,K] (GER) 3  

Second Semester Hours

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3  
Communication [C,W] (GER) 3  
Crm J 150 3  
GenEd 111 [A] (GER) 3  
Science Elective (GER) 4  

Sophomore Year
First Semester Hours

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3  
Biological Sciences [B] (GER) 4  
Crm J 320 3  
Intercultural [I,G,K] (GER) 3  
Math Proficiency [N] (GER) 3  

Second Semester Hours

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3  
Physical Sciences [P] (GER) 4  
Psych 311, Soc 321, or Approved Statistics Course 3 or 4  
Two from: Pol S 300, 402, 404, 443 or Soc 364 6  

Junior Year
First Semester Hours

Crm J 330 3  
Crm J Electives 12  
Complete Writing Portfolio  

Second Semester Hours

One from: Pol S 316, 416, or Soc 424 3  
Pol S 340 3  
Soc 320 3  
Soc 361 3  
Soc 461 3  

Senior Year
First Semester Hours

Foreign Language, if necessary, or Electives 4  
Electives 12  

Second Semester Hours

Foreign Language, if necessary, or Electives 4  
Tier III Course [T] (GER) 3  
Electives 6  

Students may substitute one four-credit Tier I Science for both the three-credit Tier I Science and the Science Elective.

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.
Program in Criminal Justice

Transfer Students

Students planning to transfer to Washington State University at the end of the freshman or sophomore year should follow as closely as possible the general and core course requirements set forth 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

Crm J 101 Introduction to the Administration of Criminal Justice 3 Agencies and processes in the administration of criminal justice. Cooperative course taught by WSU, open to UI students (CJ 101).

Crm J 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 Prereq 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 150).

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

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

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

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

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 225).


370 Introduction to Policing in America 3 Prereq Crm J 101. Development, organization, policies, and performance of the police. Cooperative course taught by WSU, open to UI students (CJ 370).

381 Crime and Justice in the Movies 3 (2-2) Prereq Crm J 101 or Pol S 101. Mass media as both reflector and shaper of public attitudes and opinions about crime, criminals, law, order, and justice; using films.

400 [M] Issues in the Administration of Criminal Justice 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Crm J 101. Selected topics in criminal justice. Cooperative course taught by WSU, open to UI students (CJ 400).

403 [T] Violence Toward Women 3 Prereq Crm J 101 or W St 200; completion of one Tier I and three Tier II courses. Violence toward women and its relationship to broader social issues such as sexism and social control.

405 [M] Comparative Criminal Justice Systems 3 Prereq Crm J 101 Comparative study of criminal justice systems in the US and selected foreign countries. Cooperative course taught by WSU, open to UI students (CJ 405).

420 [M] Law of Evidence and Criminal Procedure 3 Prereq 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 Prereq Crm J 150. Theory practice and human impact of treating criminal offenders in the community.


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

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

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

490 Criminal Justice Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. Prereq Crm J 101. 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.

505 Comparative Criminal Justice 3 Comparative study of crime laws and criminal justice systems in selected foreign countries. Cooperative course taught by WSU, open to UI students (CJ 505).

530 Criminal Justice: Process and Institutions 3 Processes of criminal justice in the context of the social, political, and economic environments. Cooperative course taught by WSU, open to UI students (CJ 530).

539 The Political Science Profession 1 Same as Pol S 539.

540 Seminar in Research Evaluation 3 Interrelationships of ideology, data, policy development, and policy implementation in public policy analysis. Cooperative course taught by WSU, open to UI students (CJ 540).

541 Seminar in Corrections 3 Prereq Stat course. Current issues related to the control, management, and sanctioning of criminal offenders. Cooperative course taught by WSU, open to UI students (CJ 541).

550 Planned Change in Criminal Justice 3 Analysis of change efforts aimed at individuals, organizations, and communities to reduce crime and improve the criminal justice system. Cooperative course taught by WSU, open to UI students (CJ 550).

570 The Police and Society 3 Community and selected social institutional factors as related to their influence on police systems. Cooperative course taught by WSU, open to UI students (CJ 570).

572 Seminar in Comparative Policing 3 Study of the history, organization, and policies of policing systems in selected countries and of transnational policing. Cooperative course taught by WSU, open to UI students (CJ 572).

580 Women and the Criminal Justice System 3 Policing. Criminal justice system's treatment of women offenders, victims, and professionals.

590 Criminal Justice Field Practicum V 1-6 By interview only. Off-campus professional internship in selected criminal justice agencies. S, F grading.

591 Seminar in the Administration of Criminal Justice 3 May be repeated for credit; cumulative maximum 6 hours. Current issues, problems, and critical concerns within the field of administration of criminal justice. Cooperative course taught by WSU, open to UI students (CJ 591).

592 Proseminar in Administration, Justice, and Applied Policy Studies 3 Same as Pol S 542.

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

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Department of Crop and Soil Sciences


The department offers study programs leading to the degrees of Bachelor of Science in Crop Science, Bachelor of Science in Soil Science, Master of Science in Crop Science, Master of Science in Soil Science, Doctor of Philosophy (Crop Science), and Doctor of Phi-
Crop Science Schedule of Studies

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 advisers.

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</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>CropS 101</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107</td>
<td>4</td>
</tr>
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</table>

Second 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>Biol 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 102 [P] or 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>ComSt 102 [C] or H D 205 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
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</table>

Sophomore Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Econ 201 [S], Econ 101 [S], or Econ 102 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 104 [B] or 120 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>CropS 201</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 201 [B] (GER)</td>
<td>3</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

BUSINESS AND INDUSTRY REQUIREMENTS (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

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec Elective</td>
<td>2 or 3</td>
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<tr>
<td>Ag Ec Mgt or Mktg sequence</td>
<td>3</td>
</tr>
<tr>
<td>Biol 320</td>
<td>4</td>
</tr>
<tr>
<td>CropS 360</td>
<td>3</td>
</tr>
<tr>
<td>CropS 403</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td>3</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec Mgt or Mktg sequence</td>
<td>3</td>
</tr>
<tr>
<td>Crop Production Elective</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 441</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 442</td>
<td>2</td>
</tr>
<tr>
<td>Elective</td>
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</table>

Senior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acctg or Mgt Elective</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ec Elective</td>
<td>2 or 3</td>
</tr>
<tr>
<td>CropS 411 [M]</td>
<td>3</td>
</tr>
<tr>
<td>CropS 412</td>
<td>1</td>
</tr>
<tr>
<td>CropS 445 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

CROPPING SYSTEMS REQUIREMENTS (124 HOURS)  

For students who wish to emphasize pest control and environmental quality in cropping systems.

Junior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
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<td>CropS 305</td>
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<td>CropS 498 or 499</td>
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<td>Crop Production Elective</td>
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<td>Pl P 429</td>
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<td>Tier III Course [T] (GER)</td>
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Second Semester

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<th>Course</th>
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<td>Acctg or Mgt Elective</td>
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<tr>
<td>Ag Ec Elective</td>
<td>2 or 3</td>
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<td>CropS 411 [M]</td>
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<td>CropS 412</td>
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<td>CropS 445 [M]</td>
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<td>Elective</td>
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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.
Senior Year
First Semester
CropS 498 or 499 1-3
PI P 429 3
Production Elective 3
Tier III Course [T] (GER) 3
Elective 3
Second Semester
300-400-level Ag Econ Elective 3
CropS 411 [M] 3
CropS 412 1
Ipm 462 3
SoilS 442 2

Turf Management Requirements (124 Hours) ✔FYDA
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
AgTM 346 2
Biol 320 4
CropS 301 3
SoilS 441 3
SoilS 442 2

Senior Year
First Semester
AgTM 210 or 312 2
Crop S 305 3
CropS 498 or 499 1-3
PI P 429 3
Tier III Course [T] (GER) 3
Elective 3
Second Semester
Aectg or Mgt Elective 3
CropS 411 [M] 3
CropS 412 1
Electives 6

Minor in Crop Science
A minor in crop science may be obtained by students from other departments. See crop science advisor.

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 Schedule of Studies
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 Bachelor of Science degree in Soil Science requires completion of an area of specialization in environmental soil science, soil management, or sustainable agriculture. Each degree program is designed to meet the specific needs of the individual. At least 40 of the total hours required for the bachelor’s degree in this program must be in 300-400-level courses.

The flexibility of this major makes possible a wide variety of career opportunities as well as thorough preparation for graduate school. Examples of vocational opportunities include soil management positions with agribusiness, commercial farms, and land appraisal firms, soil conservation positions with the state and federal government, and technical positions with universities. In addition, many soil scientists go into some area of public service and international agriculture.

First Year Requirements
The first year requirements are common to all soil science majors:

Freshman Year
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 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.

Environmental Soil Science Requirements (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
AgTM 315 3
Biol 320 4
CropS 305, Entom 305, or PI P 429 3

Soil Management Requirements (125 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 [B] (GER) 3
Arts & Humanities [H,G] (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
AgTM 315 3
Biol 320 4
CropS 305, Entom 305, or PI P 429 3

Transfer Students
Students planning to transfer to Washington State University should take courses which meet general university and crop science core requirements.
SoilS 301 [M] 3
Elective 3
Complete Writing Portfolio

Second Semester Hours
Ag Ec 340 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
SoilS 421 3
SoilS 441 3
SoilS 442 3

Senior Year
First Semester Hours
CropS 305, Entom 305, or PI P 429 3
SoilS 413 3
SoilS 431 3
SoilS 451 [M] 3
SoilS 374 or 474 3

Second Semester Hours
CropS 302 or Hort 320 3
Intercultural [I,G,K] (GER) 3
SoilS 412 1
Stat 212 [N] (GER) or 412 3 or 4
Tier III Course [T] (GER) 3
Elective 3

SUSTAINABLE AGRICULTURE REQUIREMENTS (125 HOURS) ✔FYDA

This option integrates concepts of biodiversity, cropping systems, farm management, soil quality, and agroecology.

Sophomore Year
First Semester Hours
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 Hours
Ag Ec 210 or Cpt S 405 3
Geol 102 [P] (GER) 4
Electives 8

Junior Year
First Semester Hours
Biol 372 4
CropS 305 or 413 3
Intercultural [I,G,K] (GER) 3
SoilS 301 [M] 3
SoilS 360 3
Complete Writing Portfolio

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
Biol 150 [Q] (GER) 3
SoilS 421 3
SoilS 441 3
SoilS 442 3

Senior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
SoilS 413 3
SoilS 431 3
SoilS 451 [M] 3
SoilS 462 3
SoilS 490 3

Second Semester Hours
Ag Ec 340 3
IPM 462 3
SoilS 412 3
Stat 212 [N] (GER) or 412 3 or 4
Tier III Course [T] (GER) 3

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 course work outlined under one of the above options plus completion of Math 171, Phys 102 or 202, and, if not specified in the option, Chem 240.

Description of Courses

Crop Science
CropS 101 Introductory Field Crop Science 3 Production and adaptation of cultivated crops; principles affecting growth, development, management, and utilization.

201 Growth and Development of World Crop Plants 4 (2-3) Prereq CropS 101 or c//. Ontogeny of temperate and tropical crop plants; basics of crop evolution, distribution, anatomy, morphology, and physiology.

301 Turfgrass Culture 3 (2-3) Prereq one semester of Biol or Hort. Principles of establishment and management of turf for lawns, parks, and golf courses. Field trip required. Cooperative course taught by WSU, open to UI students (PlSc 301).

302 Forage Crops 3 (2-3) Prereq Biol 104 or 120. Adaptation, production, and utilization of forage crops. Field trip required.

303 Cropping Systems 3 Prereq Biol 104 or 120; CropS 201. Principles for sustainability of rained and irrigated agronomic cropping systems. Field trips required.

305 Ecology and Management of Weeds 3 (2-3) Prereq Biol 104, 120, CropS 101, 201, or Hort 101 or 201; Chem 240. Weed ecology/management in crop and non-crop systems; weed growth/development, identification, weed control (chemical, mechanical, biological), and environmental issues.

317 Golf Course Management 1 Prereq CropS 301. Specific management practices for golf courses in the Pacific Northwest.

318 Athletic Field Management 1 Current athletic field management practices (BMPs) to turfgrass students and turfgrass industry professionals.

360 [II] World Agricultural Systems 3 Prereq two semesters physical or biological sciences. Study of agro-environmental characteristics of world agriculture; historical and contemporary features of world food production.

403 Advanced Cropping Systems 3 Prereq CropS 201; PI P 429 or c//; or graduate standing. Understanding the management of constraints to crop production and quality; biological, physical, and chemical approaches to crop health management. Field trips required. Credit not granted for both CropS 403 and 503. Cooperative course taught by WSU, open to UI students (PlSc 412).

410 Seed Science and Technology 3 (2-3) Prereq Biol 104 or 120; Biol 320. Principles of seed biology, development and physiology; seed quality evaluation. Cooperative course taught by WSU, open to UI students (PlSc 411).


412 Seminar 1 May be repeated for credit. Current literature and reports on research or special topics.

413 Biology of Weeds 3 Prereq Biol 320. Biology, ecology, and physiology of weeds; crop and weed interactions and interference. Credit not granted for both CropS 413 and 513. Cooperative course taught by UI (PlSc 410), open to WSU students.

444 Plant Breeding I 2 Prereq Biol 104, 120, CropS 201, or Hort 201; MBioS 301 rec. Genetic principles underlying plant breeding and an introduction to plant breeding.

445 Plant Breeding II 2 Prereq Crops/Hort 444 or MBioS 301. Principles and practices of plant breeding.

469 Seed Production 3 Prereq CropS 201 or Hort 201. Principles and practices of seed production, seed quality evaluation and survey of seed industry. Field trip required. Cooperative course taught by WSU, open to UI students (PlSc 469).

498 Professional Internship V 1-3 May be repeated for credit; cumulative maximum 9 hours. Planned and supervised professional work experience. S, F grading.

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

503 Advance Cropping Systems 3 Graduate-level counterpart of CropS 403; additional requirements. Credit not granted for both CropS 403 and 503. Cooperative course taught by WSU, open to UI students (PlSc 512).

504 Plant Transmission Genetics 3 Prereq MBioS 301. Transmission of genes across generations; detailed study of the basic laws of genetics to predict and describe inheritance. Cooperative course taught by WSU, open to UI students (PlSc 507).

505 Molecular Approaches for Improving Crop Quality and Adaptation 3 Prereq Biol 320 or MBioS 303; CropS 445. Characterization and principles of improving crop quality and adaptation traits with emphasis on molecular breeding strategies. Cooperative course taught by WSU, open to UI students (PlSc 515).

508 Advanced Crop Physiology 1 3 Prereq MBioS 303. Physiological responses of crops to light, water and temperature; physiology of seed germination and root and shoot development. Cooperative course taught by WSU, open to UI students (PlSc 508).
510 Seminar 1 May be repeated for credit. Literature review; preparation and presentation of reports in crop science.

512 Topics in Crop Science 1 or 2 May be repeated for credit. Concepts of plant breeding, seed physiology, and technology; crop physiology and management.

513 Biology of Weeds 3 Graduate-level counterpart of CropS 413; additional requirements. Credit not granted for both CropS 413 and 513.

515 Seminar in Plant Physiology 1 May be repeated for credit. Same as PL Ph 515.

520 Plant Cyto genetic Techniques 3 (1-6) Prereq MBioS 301. Plant genes and chromosomes. Cooperative course taught by UI (PISC 520), open to WSU students.

527 Experimental Methods in Weed Science 2 (1-3) Prereq Biol 320. 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 (PISC 527).

533 Plant Tissue, Cell and Organ Culture 3 (1-6) Same as Hort 533.

539 Herbicide Fate and Mode of Action 4 Prereq CropS 305, Biol 320, MBioS 303. Fate of herbicides in plants, soil, and water; physiological and biochemical mode of herbicide action; mechanisms of herbicide resistance. Cooperative course taught jointly by WSU and UI (PISC 539).

542 Plant Breeding 3 Prereq MBioS 301. Principles and practices of genetic plant improvement. Cooperative course taught by UI (PISC 542), open to WSU students.

547 Biometrics for Plant Scientists 3 Prereq CropS 101 and Stat 212. Biometrical techniques in research with particular emphasis in designing, analyzing, and interpreting agricultural and biological experiments. Cooperative course taught by UI (PISC 547), open to WSU students.

556 Insecticides: Toxicology and Mode of Action 3 Prereq 1 Same as Entom 556.

557 Herbicides: Toxicology and Mode of Action 1 Same as Entom 557.

558 Pesticides Topics 1 Same as Entom 558.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Description of Courses

Soil Science

SoilS

101 Organic Gardening and Farming 3 Principles and production practices of organic gardening and farming, S, F grading.

150 [Q] Science, Society and Sustainable Food Systems 3 (2-3) Introduction to food and farming systems, emphasizing scientific principles and sustainability from environmental and socioeconomic perspectives. Cooperative course taught by WSU, open to UI students (PISC 150).

201 [B] Soil: A Living System 3 Prereq Chem 102. Biological, chemical, and physical properties of soils; fundamentals of soil ecology, soil-water-plant relations, soil fertility, and soil genesis.

301 [M] Land Use and Soil Management 3 Prereq Soils 201. Soil and water conservation and management; land classification and reclamation; soils and environmental quality; sustainable agroecosystems.

345 Sustainable Agriculture 3 Prereq 2 semesters college-level physical or biological science or by permission. Environmental issues in sustainable agriculture and food production; pesticides, fertilizers, organic wastes, biotechnology, quality of life, and risk-benefit assessment. Cooperative course taught jointly by WSU and UI (Soil 345).


374 Remote Sensing and Airphoto Interpretation 3 (2-3) Physical basis of remote sensing, fundamentals of aerial photography and image analysis applied to agriculture, forestry, wildland management problems.

403 Agricultural Entrepreneurship, Tilling the Soil of Opportunity 3 This course is for students who are interested in starting an agricultural enterprise or gaining knowledge of the process. Cooperative course taught by UI (AG 404), open to WSU students. S, F grading.

404 Small Acreage Farming and Ranching Overview 3 Introduction to small acreage production systems, evaluation of personal and family goals, land evaluation, business planning, marketing options, regulations, and community resources. Cooperative course taught by UI (AG 404), open to WSU students.

412 Seminar 1 Same as CropS 412.

413 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 measurement; computation and interpretation; biological measuring instruments in environmental ecology. 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; adsorption 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 201. Basic aspects and significance of soil biology as related to soil ecology, soil biology, plant growth, and environmental problems.

441 Soil Fertility 3 (2-2) Prereq Soils 201. Nutrient management impacts on crop productivity, soil and water quality; mineral requirements; soil testing; plant analysis; inorganic and organic fertilizers.

442 Soil Analysis for Environmental and Crop Management 2 (1-3) Prereq Soils 421, 441, or c/. Characterization of soil properties and their relation to soil behavior and crop growth; includes independent or team projects.


462 Systems in Integrated Crop Management 3 (2-3) Same as Entom 462. Credit not granted for both Soils 462 and 562.

467 Regional Landscape Inventory and Analysis 4 (2-6) Same as LA 467.

474 Airphotos and Geomorphology 3 (2-3) Prereq physical geology. Remote sensing and photointerpretation methods applied to terrain landforms, soils, land use, vegetation. Cooperative course taught by WSU, open to UI students (for 415).

490 Composting 2 Composting industry, including biology, methods, benefits, management, regulations, and environmental concerns.

498 Professional Internship V 1-3 May be repeated for credit; cumulative maximum 9 hours. Planned and Supervised professional work experience. S, F grading.

499 Special Problems V 1-4 May be repeated for credit; cumulative maximum 9 hours. S, F grading.

501 Seminar 1 May be repeated for credit. Presentation of research information.

502 Advanced Topics in Soils V 1-3 May be repeated for credit; cumulative maximum 6 hours. Interpretation, presentation, and discussion of current research on soils, uses, and management.

503 Advanced Soil Analysis V 1-3 May be repeated for credit; cumulative maximum 6 hours. By interview only. Soil research techniques; application of modern instrumentation to soil analysis.

504 Research Presentation Techniques 1 Preparation of visual aids and oral presentation of research findings. S, F grading.

505 Teaching Practicum 1 May be repeated for credit; cumulative maximum 4 hours. Supervised experience in classroom teaching; classroom preparation for lectures, discussions, laboratories; preparation and grading of exams. S, F grading.

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 microbial processes in soil-water environments; nutrient cycling; pesticide behavior; agricultural waste disposal; nitrogen fixation; advanced techniques. Cooperative course taught by UW, open to UI students (SoilS 531).

537 Soil Biochemistry 3 Prereq MBiOs 303, Micro 201; SoilS 421. Enzyme activity; microbial activity; element cycles; 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).

557 Advanced Soil Genesis and Classification 3 (2-5) 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 Remote Sensing and Geospatial Analysis 3 (1-4) Prereq SoilS 374; 476 or equivalent. Digital image processing theory and geographic information systems applied to landscape analysis. Cooperative course taught jointly by WSU and UI (For 572).

575 Seminar in Remote Sensing 1 Presentation of research results and ideas on subjects relating to remote sensing.

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 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 the economic major 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 of Arts in Economics, Bachelor of Arts in Business, Master of Arts in Economics, and Doctor of Philosophy.

Certification Requirements

Students that have completed at least 24 semester credits and one of Econ 101, 102, or 198, and have a cumulative g.p.a. of 2.5 or higher are eligible to apply for certification. All students are eligible to petition for the consideration of alternative criteria. Transfer student expectations and other unique cases will be dealt with individually. Additional information is available in Todd 442.

Schedule of Studies

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.

ECONOMICS REQUIREMENTS (120 HOURS)
Biology 101 [S] or 102 [S] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Math 171 [M] (GER) 4

Sophomore Year
First Semester Hours
Physical Sciences [P] (GER) 3 or 4
Communication [C,W] (GER) 3
Econ 301 or 302 3
Social Sciences [S,K] (GER) 3
Elective 3

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Econ 311 or 411 3
Econ 401 3
Electives 6

Junior Year
First Semester Hours
300-400-level Econ Core Electives 3
Econ Option Elective 3
300-400-level Electives 6
Complete Writing Portfolio

Second Semester Hours
300-400-level Econ Core Elective 3
Econ Option Elective 3
Electives 9

Senior Year
First Semester Hours
400-level Econ Core Elective 3
Econ Option Elective 3
Electives 9

Second Semester Hours
Econ Option Elective 3
Econ 490 [M] 3
Tier III Course [T] (GER) 3
Electives 5

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. Nzirimasanga.
The intent of the Program in Sustainable Development is to address how economic and social systems interact with major resource and environmental issues, both internationally and domestically. This is an interdisciplinary program with participation by the departments of Agriculture, Economics, Environmental Science and Regional Planning, International Business, Natural Resource Sciences, and Sociology. The program is built on the premise that as a society we have a responsibility to ourselves and to future generations to steward resources in ways that foster long-term environmental and socio-cultural health and economic viability for all peoples.

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 advisor in one of the participating departments for an approved course listing. Students wishing to apply for the minor may do so with the Department of Economics.

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 vector calculus (Math 171, 172, 273), 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, Soc 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 340; MIS 250 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.

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 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 Prereq junior standing. Ecological, economical, and sociological aspects of sustainable development.

397 Topics - Study Abroad 3 Special topics in economics taught in NCSA study abroad programs.


402 History of Economic Thought 3 Prereq Econ 102. Development of economic thought; special focus on selected schools, including Greeks, scholastics, mercantilists, physiocrats, classicals, and neoclassicals. 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 Dec S 215, or Stat 443; Econ 101. Econometric methods in relation to the substantive achievements of empirical econometrics. Credit not granted for both Econ 311 and 411.

416 Comparative Economic Systems 3 Prereq Econ 102. Key institutions, policies, and economic performance of different capitalist and socialist systems; transition of Soviet-type socialist economies, Eastern Europe; capitalism as a global system.

418 [T] Global Capitalism Today: Perspectives and Issues 3 Prereq GenEd 111; Econ 101 or 102. Logic and consequences of capitalism as global system; multinational corporations; underdevelopment and 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 aspects of regional integration and economic reforms in Western Europe, North America, 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 V 2-12 May be repeated for credit; cumulative maximum 12 hours. Professional off-campus internships arranged or coordinated by departmental faculty according to student’s field of specialization. S, F grading.

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

500 Economic Theory I 3 Prereq Econ 401; 408 or one year of calculus. Introduction to dynamics, growth and investment, overlapping generations models, Ramsey model, consumption and investment, economic growth.

501 Economic Theory II 3 Prereq Econ 301; 408, or one year calculus, or c/ in Econ 408. Microeconomic theory, multivariate optimization, consumer and producer theory, competitive partial equilibrium, introduction to imperfect competition.

502 Economic Theory III 3 Prereq Econ 500. Macroeconomic theory, short-run fluctuations and nominal rigidities, monetary economics and inflation, real business cycle models, unemployment and frictional unemployment, monetary and fiscal policy.

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, inference, 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. 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; open economy 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 International and Development Economics V 1-6 May be repeated for credit; cumulative maximum 12 hours. Prereq Econ 500 and 501 or permission of instructor. Topics may include international trade theory, trade policy, trade and environment, economic integration, open economies, economic development analysis.

Department of Economics
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 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.

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 supportive courses.

The Doctorate of Philosophy in Higher Education, with a specialization in student affairs, is an 80-credit, full-time program that focuses on learning how to educate and work with diverse populations of students. The program is designed to appeal to a select group of students who currently work in student affairs administration or related fields and who want to become faculty or would like to move into high-ranking administrative positions. Internships and practica are required.

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 their 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 Psychology)

Individuals applying for admission to do graduate study must make application to the Graduate School and submit the following materials to the Department of Educational Leadership and Counseling Psychology Associate Chair: letter of application describing professional objectives; completed departmental application form; vita; Graduate Record Examination scores; official college transcripts; and three letters of recommendation from individuals qualified to comment on the applicant’s academic and professional abilities.

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 counseling psychology, and master’s degree programs in counseling, the department considers applications for admission only once a year. 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 Doctor 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 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.

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While all students at the master’s level complete a common core of courses, a substantial portion of each master’s degree program is composed of courses...
selected by the student and his/her thesis advisory committee to tailor the program of study around the student's personal interests and professional aspirations.

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.

A variety of information including the application is also available via the World Wide Web at http://www.wsu.edu. This web site has links to general information about WSU and provides access to the Graduate School web site. The application can be submitted online. Applicants for admission must also submit additional documentation as described above. Applications are accepted at any time for any semester.

Assessment and Evaluation Center

The Assessment and Evaluation Center (AEC) is a service and research center located in the College of Education. Established in 1997, the center provides educational and social services agencies in Washington state with student assessment and program evaluation assistance. Activities have included: assisting school districts develop a comprehensive district assessment system, program evaluations, test construction, assessment and evaluation of professional development for educators, revising student report cards, evaluating science curriculum and instruction, and development and implementation of assessment instruments, scoring rubrics, and performance criteria for assessing engineering education.

The AEC is dedicated to the training of graduate students in the field of student assessment and evaluation, meeting a critical need within the state and national workforce. Qualified graduate students may be funded through activities associated with the Assessment and Evaluation Center (AEC). Through the center, graduate students not only receive funding but also practical experience by working on center assessment and evaluation projects. Under the guidance of the center director, graduate students are typically responsible for producing project related documentation, communicating with clients, data analysis, and report writing. The hands-on experiences offered through the center provide a vital component to graduate student education at Washington State University. Students interested in working in the AEC should contact the AEC director.

Certification (Educational Administration)

A certification program for the initial and continuing 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.

ESA Counselor Certification

The Department of Educational Leadership and Counseling Psychology at Washington State University is involved with southeastern Washington school districts in a Professional Education Advising Board in Counselor Education. The EdM specialization in school counseling constitutes a consortium-directed program approved by the State Board of Education. Completion of this program qualifies a person for initial certification as a school counselor in the state of Washington. Post-master's degree course work is also available leading to continued counselor certification.

Bachelor of Arts in Sport Management

The Department of Educational Leadership and Counseling Psychology offers a major in sport management which leads to a Bachelor of Arts in Sport Management. The sport management major provides professional preparation for those students wishing to pursue a management career with sport organizations or in sport businesses. Students must complete a core program in sport management and must select an area of specialization from business, communications, or leadership studies. Additional information on the areas of specialization can be obtained from the department.

Practical application of theory and knowledge is obtained through enrollment in practicum hours during the junior and senior years and through the completion of a 10-12 credit internship at the end of the required coursework. The internship serves as the bridge between the student's college career and opportunities for employment as a sport manager.

General Education Requirements must be completed by all students enrolled in the university. Sport management majors are required to complete ENG 101 and COMST 185. 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 or the area of specialization.

Bachelor of Science in Kinesiology

Two kinesiology majors in the Department of Educational Leadership and Counseling Psychology (athletic training, movement studies) and one major in the Department of Teaching and Learning (health and fitness education) share 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 departmental core courses and in GER courses used as prerequisites for departmental courses. All letter-graded courses specifically required for each major must be taken for letter grade (i.e., not pass, fail). In addition, each major has a specialized curriculum designed to meet the requirements of the appropriate professional experience in which the student is interested.

Kinesiology Core courses required for Athletic Training, Movement Studies and the Health & Fitness Teaching Endorsement.


Undergraduate Minors

The Department of Educational Leadership and Counseling Psychology offers undergraduate minors in Leadership Studies, Sport Management, Health and Wellness, and Strength Training. Courses for minor may not be taken pass, fail. Students interested in declaring a minor in leadership studies or sport management should contact the Department of Educational Leadership and Counseling Psychology.

Leadership Studies: Students majoring in any academic area may also take a minor in Leadership Studies. The minor in Leadership Studies requires 18 semester hours, 13 of which must be from 300-400-level courses. Students must earn credits from courses in the core curriculum and the supporting interdisciplinary curriculum approved for the minor. Students must complete 9 and no more than 12 core curriculum credits from the following: 6 credits from: Ed Ad 389; 440; 3 credits from: either Ed Ad 497, 498, or 499.

In addition to the 9 credits from the core curriculum, students must earn the balance of the 18 credits from courses listed in the interdisciplinary supporting curriculum; choose 9 credits from: CAC 301, 355, 495, Comst 185, 302, 334, 434, 475, H D 205, Mg 401, 450, Pol S 456, W St 315. For more detailed information, contact www.wsu.edu/elep/leadership_studies.

Sport Management: The minor in sport management requires 18 semester hours of course work and practical experience. The minor is designed for students with an interest in sport organizations or sport-related business. Sport management is an appropriate area for students with a variety of career interests, including business, communication, criminal justice, law, and social sciences.

Required courses include SpMgt 276, 284, 290, 367 or Soc 345; 477 and 7 credits from SpMgt 365, 394, 496, 497, 498.

Health and Wellness: ESHN 130, HF 263, 363, PEACT (2 hours), MvSt 364, Pharr 217; 3 hours from H D 203, 305, or Psych 363; one of: ES/RF 101, Psych 228; or 230. Total: 21 or 22 hours.

Strength Training: Ath T 411, 412, 413, 414, HF 361, MvSt 362, 380, and 463. Recommended courses: Ath T 305, MvSt 313, and Psych 105.

Record of Distinction

The Department of Educational Leadership and Counseling Psychology sponsors and hosts a number of state, national and international programs including the High School Equivalency Program. The Assessment and Evaluation Center serves school districts and state agencies by providing high-quality assessment and evaluation services through grant and contract agreements. The center also provides funding opportunities for graduate students interested in assessment and evaluation. Superintendent certification course work is also offered throughout the state at 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.
## Schedule of Studies

**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 REQUIREMENTS (120 HOURS)

#### Freshman Year

<table>
<thead>
<tr>
<th>First 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>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Tier I Science [Q] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biological Science [B] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics Proficiency [N] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>SpMgt 276</td>
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#### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Area of Specialization</td>
<td>3</td>
</tr>
<tr>
<td>ComST 102 [C] (GER)</td>
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</tr>
<tr>
<td>Physical Science [P] (GER)</td>
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<tr>
<td>SpMgt 284</td>
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<tr>
<td>SpMgt 290 or additional GER [H,G,S,K]</td>
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<table>
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<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Area of Specialization</td>
<td>6</td>
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<tr>
<td>PEACT</td>
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<td>SpMgt 290 or additional GER [H,G,S,K]</td>
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</tr>
<tr>
<td>SpMgt 394</td>
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<tr>
<td>Elective</td>
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#### Junior Year

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<th>Hours</th>
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<tbody>
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<td>Area of Specialization</td>
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<tr>
<td>HF 263</td>
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<tr>
<td>SpMgt 365 or 367</td>
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</tr>
<tr>
<td>SpMgt 394</td>
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<td>Elective</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Area of Specialization</td>
<td>6</td>
</tr>
<tr>
<td>Engl 402 [W] (GER)</td>
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<tr>
<td>PEACT</td>
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<tr>
<td>SpMgt 365 or 367</td>
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</tr>
<tr>
<td>SpMgt 394</td>
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<tr>
<td>Elective</td>
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#### Senior Year

**Senior Year**

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<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>SpMgt 464</td>
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<tr>
<td>SpMgt 468</td>
<td>3</td>
</tr>
<tr>
<td>SpMgt 477</td>
<td>3</td>
</tr>
<tr>
<td>SpMgt 488</td>
<td>2</td>
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<tr>
<td>SpMgt 490</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Elective</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>SpMgt 491</td>
<td>10-12</td>
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### ATHLETIC TRAINING REQUIREMENTS (121 HOURS)

The athletic training education program has probationary accreditation by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and is seeking full accreditation. The athletic training major is designed to provide students with the necessary academic and clinical competency required to be certified by the National Athletic Trainers’ Board of Certification. All students majoring in athletic training will complete the kinesiology core, the athletic training major course work and 1200 hours of clinical internship experience.

Because of the intensity and availability of the clinical internship, the program admits a limited number of students. Application into the clinical internship occurs in the second semester of the freshman year. Academic requirements for this application process include but are not limited to 1) completion or current enrollment in HF 263, MVTST 262 and ATH T 266, and 2) a semester and cumulative GPA of a 2.75 the spring of application. Students are advised to consult with athletic training advisers early into their academic careers for specific application procedures.

Transfer students are welcome to apply for admission into the clinical internship prior to their attendance at WSU. Transfer students desiring admission into the clinical internship program must have been accepted to WSU, have completed the prerequisite course work, meet academic requirements and be of sophomore standing.

Students who are below the 2.75 cumulative g.p.a. requirement with special circumstances that would allow the selection committee to believe that they have potential to succeed academically and clinically in the athletic training program can be admitted into the clinical experience on a probationary status. Students need to consult with athletic training advisers for specific requirements for pursuing this avenue of admission.

Clinical internship experiences combine the theory and management of sport-related injury/illness under the direct supervision of certified athletic trainers. The clinical internship is guided by progressive clinical competencies and technical standards that assess the student’s progress. Twelve hundred hands-on clinical internship hours are arranged over four consecutive semesters with a parallel educational cooperative partnership involving the Department of Intercollegiate Athletics. Additional clinical experiences are available at High School and Sport Medicine facilities. Students are expected to maintain high academic standards and demonstrate progressive clinical competence to remain a part of the athletic training clinical internship experience. Specific policies and procedures governing the clinical internship experience are available through athletic training advisers.

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**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>MVTST 199</td>
<td>3</td>
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<td>MVTST 262</td>
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<td>MVTST 264</td>
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<tr>
<td>PEACT 112</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ath T 266</td>
<td>2-3</td>
</tr>
<tr>
<td>Biol 102 [B] or 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>ComST 102 [C] (GER)</td>
<td>3</td>
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<tr>
<td>HF 263</td>
<td>3</td>
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<tr>
<td>PharP 217</td>
<td>2</td>
</tr>
<tr>
<td>Soc 101 [S,D] (GER)</td>
<td>3</td>
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<tr>
<td>Apply to Clinical Internship</td>
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**Sophomore Year**

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<tr>
<th>First Semester</th>
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<tr>
<td>Ath T 400 Series</td>
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<tr>
<td>Ath T 491</td>
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<tr>
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<td>Math 205 [N] (GER)</td>
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<td>Ath T 311</td>
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<td>Ath T 400 Series</td>
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<td>Ath T 491</td>
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**Junior Year**

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<td>Biol 251</td>
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**Senior Year**

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<tr>
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<td>HF 484</td>
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<td>MVTST 461</td>
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<td>Additional Clinical Experiences Recommended</td>
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1 Ath T 400 Series are chosen from Ath T 465, 466, 467, 468, and 469 in consultation with an advisor.

### MOVEMENT STUDIES REQUIREMENTS

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 and Mark W. Brands Computer Laboratory. Extensive use also is made of the university Information Technology Center.
The Movement Studies major leads to the Bachelor of Science in Kinesiology. The major provides an interdisciplinary understanding of human movement through the study of anatomy, physiology, movement-analysis, biomechanics, motor learning, exercise physiology, and sport psychology and ethics. In addition, students gain proficiency in four of five sport activity areas. Movement studies provides a foundation for personal training certification, health and fitness club employment, teaching, coaching, physical therapy, dance therapy, and sports medicine.

Freshman Year

First Semester

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<tr>
<th>Course</th>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>ISHN 130 [B] (GER) or 233</td>
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<td>MvtSt 199</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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Second Semester

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<td>Biol 103 [B] (GER)</td>
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<tr>
<td>MvtSt 264</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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Second Semester

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<td>Ath T 266</td>
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<td>ComSt 102 [C] (GER)</td>
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Junior Year

First Semester

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<td>MvtSt 481</td>
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Second Semester

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<td>Soc 345</td>
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<td>T &amp; L 330</td>
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Senior Year

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<td>HF 393</td>
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<td>HF 484</td>
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<td>MvtSt 461</td>
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<tr>
<td>Elective Core</td>
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Second Semester

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<td>MvtSt 496</td>
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<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Electives</td>
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1 Elective Core: Psych 220, 265, 321, 363, 470; SHS 250.

Description of Courses

Counseling Psychology

CoPsy

457 [T,D] Chicano/Latino Psychology 3 Same as CAC 457.

474 Introduction to Counseling Techniques 2 Prereq 9 hours Educ or Psych; junior standing. Practical directive and nondirective counseling techniques for school counselors and classroom teachers. Not open to PhD students in CoPsy.

478 Career Services and Programs for Persons with Disabilities 3 Career development concepts, services, and programs for persons with disabilities with emphasis on interagency collaboration with public schools. Credit not granted for both CoPsy 478 and 578.

490 Instructional Practicum V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 8 hours. S, F grading.

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

501 Historical and Philosophical Foundations of Counseling Psychology 3 Prereq admission to Counseling Psychology PhD program. History of counseling psychology; philosophical and psychological systems; current identity of counseling psychology as an academic discipline and a profession.

511 Theories, Research, and Techniques in Counseling Psychology 3 or 4 Philosophical assumptions, theory of personality, counseling process, techniques and relevant research in the major theories of counseling and personality.

512 Theories, Research, and Techniques in Counseling Psychology II 3 or 4 Prereq CoPsy 511. Advanced study of process techniques and outcome research in the field of counseling and psychotherapy; nonspecific process skills are presented and integrated into specific, empirically validated interviews.

513 Career Development 3 or 4 Theories, concepts, methods and findings in career development; vocational assessment and prediction, career counseling intervention outcomes.

515 Ethics and Professional Problems in Counseling Psychology 4 Professional problems; ethical, legal, and training issues, practices, and new issues.

518 Theoretical Foundations of Group Counseling 3 Prereq CoPsy 512 or c//. History, philosophical and theoretical foundations; the group counselor, members, and issues in group counseling.

522 Introduction to Family Counseling 3 Counseling in the family context; intervention strategies, theoretical models, and professional ethics and issues.

523 Topics in Counseling Psychology V 1-4 May be repeated for credit; cumulative maximum 8 hours. Recent research, developments, issues, and/or applications in selected areas of counseling psychology.

525 Counseling Diverse Populations Prereq CoPsy 512. Research and theories regarding the influence of culture, gender, and lifestyle on counseling processes; application of appropriate assessment/treatment strategies.

527 Individual Appraisal I 3 or 4 Prereq EdPsy 508, 509. Theoretical background and practical skills needed to administer, score, and interpret individual intelligence and structured personality tests; integration of nontest data.

528 Individual Appraisal II 4 Prereq CoPsy 527. Theoretical and empirical bases, psychometric properties, administration, scoring, and interpretation of major projective techniques; emphasis on Rorschach and TAT.

529 Counselor Supervision: Theory, Research, and Practice 3 or 4 Prereq admission to Counseling Psychology PhD program. Survey of major theoretical approaches, techniques, and research in models of counselor supervision and training.


532 Current Issues in School Counseling II 3 Prereq CoPsy 531. Additional coverage of contemporary issues of concern to school counselors; comprehensive developmental school programs, school community dynamics, parental involvement, consultation.

533 Master's Internship in Agency Counseling V 4-8 May be repeated for credit; cumulative maximum 8 hours. Prereq CoPsy 512, 513, 515; 527 or c//; or by interview only. Supervised experience in the application of counseling theory and techniques in an agency setting. S, F grading.

534 Study Skills and Content Area Instruction 2 or 3 Same as T & L 534.

535 Master's Internship in School Counseling V 4-8 May be repeated for credit; cumulative maximum 8 hours. Prereq CoPsy 512, 513, 518; 515 or c//; 527 or c//; or by interview only. Supervised experience in the application of guidance and counseling theory and techniques in a school setting. S, F grading.

537 Professional Development in Counseling Psychology 3 NCC requirements: growth and development, social and cultural foundations, the helping relationship, group dynamics, career, appraisal and research.

541 Clinical and Experimental Hypnosis Seminar 4 Prereq PhD student in counseling, educational, experimental, or clinical psychology. Clinical and experimental hypnosis, emphasizing applied research and clinical methods.

542 Cross-cultural Research in Counseling and Assessment 4 Cross-cultural research methods, concepts, and findings in counseling and assessment.

551 Doctoral Practicum In Counseling Psychology I 4 (2-6) Prereq CoPsy 512, 513, 515, by interview only. Supervised experiences in the application of counseling psychology theory and techniques, S, F grading.
552 Doctoral Practicum in Counseling Psychology II 4 (2-6) Prereq CoPsy 551, by interview only. Supervised experiences in the application of counseling psychology theory and techniques. S, F grading.

553 Doctoral Practicum in Counseling Psychology III V 2 (1-3) to 4 (2-6) May be repeated for credit; cumulative maximum 12 hours. Prereq CoPsy 552, by interview only. Supervised experiences in the application of counseling psychology theory and techniques. S, F grading.

557 Chicano/Latino Psychology 3 Graduate-level counterpart of CAC 457; additional requirements. Credit not granted for both CAC 457 and CoPsy 557.

561 Continuing Counseling ESA Certification V 3-6 May be repeated for credit; cumulative maximum 6 hours. Prereq Initial Counselor Certification; equivalent of 180 full days of school counselor experience. Peer review requirements for continuing level ESA Counselor Certification.

562 Advanced Hypnosis and Therapy 3 Prereq CoPsy 512 or 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.

597 Counseling Psychology Internship V 2-4 May be repeated for credit; cumulative maximum 8 hours. Supervised internship experience, individual and group counseling, evaluation, assessment, supervision, and teaching. S, F grading.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Projects, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Educational Administration

Ed Ad

389 Undergraduate Leadership Development 3 Basic leadership through skills, styles and conflict management, critical thinking, problem solving, organizational behavior, and leadership issues.

440 Principles of Service and Leadership 3 Prereq Ed Ad 389, senior standing. Individual and group opportunities to apply leadership skills, theory, and principles to a proposed service learning project.

490 Special Topics V 1-4 May be repeated for credit; cumulative maximum 8 hours. By permission only.

497 Peer Leadership V 1-4 May be repeated for credit. Development of leadership and interpersonal skills for specific peer leadership and para-professional positions. S, F grading.

498 Undergraduate Leadership Practicum V 1-4 Prereq Ed Ad 389 or c/. Weekly seminar; development of and reporting on significant project associated with a leadership position held by the student. S, F grading.

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

501 Philosophy of Education 3 Development of American educational philosophy.

503 Values and Ethics for Educational Leaders 3 Study of ethical theories, the moral dilemmas of public schooling, and the skills of ethical reasoning; professional code of ethics.

506 Social Context of Education 2 The interpretation of social context issues including historical, legal and cultural factors as these influence policies and practice in education.

507 Social Foundations of Education 3 Educational adaptations to the economic and social trends and forces.

510 Improvement Instruction 3 Rec teaching experience in analysis and evaluation of instructional models with emphasis on information processing; implications for changing teaching style.

511 Models of Teaching 2 Theoretical models and strategies of teaching in classrooms; relationships between specific models and curriculum priorities.

514 Basic Principles of Curriculum Design 2 or 3 Rec teaching experience. The application of theoretical concepts and approaches in the planning and design of courses.

515 Curriculum Implementation 3 Rec teaching experience. Research and practice; innovation and change in curricular organization emphasizing implementation.

516 Instructional and Curricular Leadership 2 or 3 Rec teaching experience. Theory, research, and practice of providing instructional and curricular leadership in schools and other educational settings.

517 In-service Programs 3 Research, theory, and practice in staff development in K-12, higher education, and non-school settings; for administrators, teachers, and other staff.

518 Educational Technology 3 Rec T & L 445 or 446. Research and theory of communication related to instructional resources and current educational technology; problems of planning and administering programs.

520 Seminar in Curriculum and Instruction 2 or 3 Rec teaching experience. Contemporary issues, analyses and developments of educational programs.

521 Topics in Education V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, developments, issues, and/or applications in selected areas of education.

522 Topics in Education V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, developments, issues, and/or applications in selected areas of education.

530 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Topical issues in education responding to shifting demands and skills needed by parents, teachers, school administrators and community leaders.

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536 Introduction to Qualitative Research in Education 3 Introduction to the theory and methods of qualitative research; field relations, data collections, data analysis, hypothesis development, and theory generation.

537 Advanced Qualitative Research in Education 3 Prereq Ed Ad 536. Advanced theory and methods of qualitative research; theoretical foundations, data collection and analysis, and reporting.

538 Special Topics in Qualitative Research in Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Ed Ad 536.

540 Current Issues in 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 Prereq Ed Ad 560, 561. The organization, programs and professional issues related to selected student affairs programs and units.

563 Models of College Student Social Identity 3 Prereq Ed Ad 561. Critique and understand social identity models as they relate to teaching, advising, and working with diverse student populations.

564 Seminar in Student Affairs 3 Prereq graduate standing. Contemporary issues, analyses, and development of student affairs programs and institutions.

565 Master’s Practicum in Student Affairs 3 (0-9) Prereq graduate student with 15 hours of completed course work in education. Selected supervised experiences in professional student affairs settings which provide for the investigation/application of theory/methods gained through formal course work.

567 Organizational Leadership of Multicultural Change 3 Prereq graduate standing. Reflection on experience and examination of the theory of practice or organizational leadership in the context of diversity.
568 Finance and Budgeting in Higher Education 3 Prereq undergraduate macro and microeconomics 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 administrators. Development and function of community and technical colleges.

571 Undergraduate and Community/Technical College Teaching 3 Rec Ed Ad 570 or 572. Concepts, principles, issues, and procedures in undergraduate curriculum development; goal-oriented educational strategies and delivery systems.

572 The American College and University 3 History, philosophy, objectives, and issues of colleges and universities as social institutions.

573 Issues in Higher Education 3 Selected contemporary issues in higher education.

574 Finance and Budget in Higher Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Contemporary issues, analyses and developments of higher education programs and institutions.

575 Administrative Concepts for Physical Education, Sport and Athletics 3 Administration focusing on democratic 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 Graduate-level counterpart of SpMgt 477; additional requirements. Credit not allowed for both SpMgt 477 and Ed Ad 577.

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 Organizes, administers and leadership of universities, colleges, and community colleges.

580 School Organization and Administration 3 Rec teaching experience. Readings and discussions on the theories and practices of school organization and administration. Cooperative course taught jointly by WSU and UI (EdAd 509).

581 Politics in Education 3 Prereq graduate standing. Examining the intrapersonal, organizational politics and political dilemma, particularly as they pertain to marginalized groups.

582 Policy Formation and Analysis in Education 3 Political and organizational policy formation processes in educational organizations; policy analysis in education.

583 Community and Communications 3 Social, political, and economic relationships between education and the community; methods of public polling and campaign strategy techniques.

584 Human Resource Management 3 Human relations in education; problems involved and practical solutions considered.

585 Financial Management in Education 3 Economics and financing of education; financial planning, budget development, investment analysis, bonding, cost effectiveness; current trends in educational finance. Cooperative course taught jointly by WSU and UI (EdAd 535).

586 Management of Facility Planning 3 Principles and procedures in the development of educational specifications, conducting needs assessment, forecasting; selecting an architect.

587 Seminar in School Administration V 1-6 May be repeated for credit; cumulative maximum 6 hours. Interdisciplinary seminars; related studies; discussions in several areas by specialists.

588 The Law and Education 3 Fundamental legal principles within which public education functions; applicable school codes of Washington and other states; review important court cases.

589 Leadership Development Seminar 3 Improving knowledge and skills in strategic planning, decision making, leadership issues, conflict, motivation, staff development, productivity, and stress.

590 Internship 3 or 6 May be repeated for credit; cumulative maximum 12 hours. By interview only. Internship in professional positions. S, F grading.

594 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. Current concepts and practices 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.

Educational Psychology

EdPsy 322 Topics in Student Personnel Work 2 or 3 Educational psychology, theories of human behavior, and legal and ethical considerations related to student personnel work.

401 Classroom Assessment, Elementary 2 Prereq certified education major; T & L 301; c/ in T & L 310, 403, 413, 445, 490 (3 credits); and Sp Ed 420 or 421. Principles and practice of high-quality classroom assessment in the elementary school.

402 Classroom Assessment, Secondary 2 Prereq certified education major; T & L 301, 302, 303, and 317/318. Principles and practice of high-quality classroom assessment in secondary schools.

490 Instructional Practicum V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 8 hours. S, F grading.

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

502 Theoretical Foundations of Learning and Instruction 3 Historical and contemporary theories of learning and instruction: application of theory in counseling and teaching settings.

503 Advanced Educational Psychology 2 Theories of learning and development as applied to education.

504 Classroom-focused Research Methods 2 Methods, design, implementation, and application of results in classroom context.

505 Research Methods I 3 Research methods; literature review; design, implementation, and interpretation of results.

506 Educational Statistics 4 Descriptive statistics: central tendency, variability, correlations, and regression; introduction of tests of significance; reporting and interpreting educational research data. Cooperative course taught jointly by WSU and UI (EdAd 507).

509 Educational Measurements: Test Development and Assessment 2 or 3 Rec EdPsy 508. Theory and use of standardized educational measurement instruments; intelligence, aptitude, and achievement tests; measurement of outcomes.

510 Assessment of Learning 3 Prereq graduate standing. Assessment of student learning, school and district evaluation; particularly appropriate for school administrators.

519 Practicum in College Instruction 1 (0-3) May be repeated for credit; cumulative maximum 4 hours. By interview only. Supervised experience in college teaching. S, F grading.

521 Topics in Educational Psychology V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, developments, issues, and/or applications in selected areas of educational psychology.


566 Research Methods II 3 Prereq EdPsy 505, 565. Integration and application of research skills in writing proposals, dissertations, papers for publication; interpreting, critiquing, and synthesizing research studies.

569 Seminar in Quantitative Techniques in Education 2 or 3 May be repeated for credit; cumulative maximum 6 hours. Prereq EdPsy 565. Application of parametric and nonparametric statistics, data processing using computer packages in educational research.

570 Introduction to Program Evaluation 3 Prereq EdPsy 505. Introduction to strategies and techniques for evaluation of educational and social programs.

571 Advanced Program Evaluation 3 Prereq EdPsy 570. Advanced methods and techniques of program evaluation.

597 Educational Psychology Internship V 2-4 May be repeated for credit; cumulative maximum 8 hours. Supervised internship experience in educational psychology, measurement and evaluation. S, F grading.

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

700 Master’s Research, Thesis, and/or Examination Variable credit, S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit, S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit, S, F grading.

Sport Management

SpMgt
276 Introduction of Sport Management 3 Nature of sport management; scope of sport related business; related literature. Not open to seniors or to first-semester freshmen.

284 Introductory Principles of Coaching 2 Overview of coaching responsibilities and basic understanding in the sport sciences utilized in coaching.

290 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 1 Overview of policies and requirements; guidance through site selection and application process; communication skills for the business/sport environment. S, F grading.

491 Internship V 10-12 Prereq SpMgt 488, 490. 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.

498 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

266 Care and Prevention of Athletic Injuries 3 (2-3) Prereq MvSt 262 or c/. Administration of school sports health care program; prevention, treatment, and rehabilitation of sports injuries.

305 Nutrition Related to Fitness and Sport 3 Prereq FSNI 130 or 233. Identification of energy, macronutrient, and fluid requirements during exercise; evaluation of dietary regimens and ergogenic aids for pre and post competition, weight maintenance, and wellness. Cooperative course taught by UI (FCS 305), open to WSU students.

311 Strength Training 3 Prereq ExSci 264, MvSt 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 (H&S 391). S, F grading.

411 Advanced Strength Training 3 Prereq Ath T 311. Advanced methods as they apply to the enhancement of athletic performance, injury prevention, rehabilitation and general fitness. Cooperative course taught by WSU, open to UI students (PEP 411).

412 Strength Training Practicum, Level I 3 (1-6) Prereq admission to Strength Training program. Entry-level practical experience in the Varsity Weight Room. S, F grading.


414 Strength Training Practicum, Level III 3 (1-6) Prereq Ath T 413. Advanced-level practical experience in the Varsity Weight Room. S, F grading.

465 Medical Aspects of Athletic Injuries 1 Prereq Ath T 266. Role and function of various medical and paramedical specialists in the treatment of sport-related injuries/illnesses. S, F grading. Cooperative course taught by WSU, open to UI students (H&S 465).

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) May be repeated for credit; cumulative maximum 6 hours. Prereq 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) May be repeated for credit; cumulative maximum 6 hours. Prereq 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 studies.


262 Human Anatomy 4 (3-3) Comprehensive survey of the structure and organization of the human body; emphasis on skeletal muscle, 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; Biol 315 or MvSt 262; math proficiency requirement. Anatomical and mechanical influences on human movement.
380 Introduction to Introduction to Exercise Physiology 3 Prereq Biol 251. Introduction to exercise physiology as it relates to sport, physical training, and performance.

384 Lifeguard Instruction 1 (0-3) Prereq ARC Lifeguard training; CPR; first aid. Methods, materials, and resources; American Red Cross lifeguard instructor certificates awarded to those who qualify.

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.

390 Practicum in Coaching V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Combined maximum for MvtSt 300-level practicum courses 8 hours. By interview only. Supervised practicum. S, F grading.

392 Practicum in Physical Education V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Combined maximum for MvtSt 300-level practicum courses 8 hours. By interview only. Supervised practicum. S, F grading.

415 Assessment 3 (2-3) Prereq senior in KLS. Program evaluation of human techniques for curriculum pertaining to human movement.


475 Marginality and Movement 3 Understanding of the current status of women’s sports participation in the U.S. and of the woman participant herself.

481 Analysis of Human Movement 3 (2-3) Development of knowledge and skills which assist the physical education teacher in planning for and responding to student skill learning.

490 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

496 Special Topics 1 May be repeated for credit; cumulative maximum 4 hours. Physical education, leisure, recreation, dance, health sports.

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

Exercise Science

ExSci 264 Fitness 3 (2-3) Physiological, mechanical, and health-related basis of fitness practices.

370 Physical Assessment 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.

463 Physiology of Exercise 4 (3-3) Prereq Biol 315, ExSci 380, or MvtSt 262, Biol 251. Advanced undergraduate exercise physiology with emphasis on mechanisms regulating physiological responses to exercise across the life span.


480 Introduction to Cardiac Rehabilitation 3 Prereq ExSci 463, 470, 476. Principles and applications of exercise testing and prescription to cardiac rehabilitation situations and populations.

491 Internship 12 Prereq all required courses in ExSci major. Supervised practicum in agency, clinic, or business. S, F grading.

563 (Kin) Exercise and Immune Response 3 Rec ExSci 463. Influence of physical exercise on immune response and consequent impact on host susceptibility to disease and infection.

565 (Kin) Muscle Physiology and Exercise Biogenetics 3 Rec ExSci 463. Bioenergetic, stressed muscle metabolic, and neuroendocrine responses to exercise and training.

567 (Kin) Cardiopulmonary Exercise Physiology 3 Rec ExSci 463. Pulmonary, circulatory, thermoregulatory, fluid balance and physiological system integration responses to exercise and training.

568 (Kin) Clinical Assessment and Prescription 3 Prereq ExSci 463, 476, 567. Development of knowledge and skills in clinical testing analysis, and exercise prescription for clinical populations. Cooperative course taught by UI (PE 593), open to WSU students.

589 (Kin) Research Techniques 2 (1-3) or 3 (2-3) Application and use of research techniques and tools in physiology of exercise.

590 (Kin) Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Internship in educational, industrial, municipal or private sports or recreational setting; direct participation in tasks, research and reporting activities. S, F grading.

596 (Kin) Seminar 1 or 2 May be repeated for credit.

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

700 (Kin) Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 (Kin) Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Kinesiology

Kin

501 Trends and Issues in Kinesiology 3 May be repeated for credit; cumulative maximum 6 hours. Exploration of trends and issues in kinesiology.

551 Assessment and Evaluation of Motor Dysfunction 3 Principles of assessment/evaluation of motor dysfunction; tools and techniques; administration, interpretation, and translation into program plans. Cooperative course taught by WSU, open to UI students (PE 551).

552 Neurological Impairment and Motor Behavior 3 Neuropsychological 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).

553 Programming in Adapted Physical Activity 3 Intensive experiences in planning and implementing physical activity programs to include disabled individuals in urban, rural, integrated and segregated settings. 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 3 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.

564 Mechanical Analysis of Motor Activity 3 Prereq MvtSt 362. Fundamental laws of mechanics applied to motor activities. Cooperative course taught by WSU, open to UI students (PE 564).

566 Biomechanics 3 Prereq MvtSt 564. Biological and mechanical aspects of human movement. Cooperative course taught by WSU, open to UI students (PE 566).

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 3 The social significance of sports; sociology of sport research.

579 Psychology and Physical Activity 3 Current research findings in psychology pertinent to the teaching and coaching of physical activities.


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 552).

583 Teaching Strategies in Physical Activity 3 Research materials and methods related to effective teaching in physical education.

585 Curriculum Development in K-12 Physical Education 3 Principles of curriculum construction and the process of curricular development. Cooperative course taught jointly by WSU and UI (PE 544).


591 Motor Learning 3 Learning theory, learning models, and experimental evidence related to learning of perceptual-motor skills.

592 Perceptual-Motor Development 3 Physical growth and perceptual-motor development.
Department of Educational Leadership and Counseling Psychology

594 Educational Internship V 2-9 May be repeated for credit; cumulative maximum 9 hours. Internship in educational setting; direct participation in tasks, research, planning, activity controlling and reporting. S, F grading.

597 College Teaching: Physical Education 1 (0-3) May be repeated for credit; cumulative maximum 4 hours. By interview only. Supervised experience in college teaching. S, F grading.

598 Methods of Research 3 Application of the scientific approach to research in physical education, sport and leisure.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. 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 (BSCS), 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 programs leading to the BSEE and BSCpE are accredited by the Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology (ABET), while the program leading to the BSCS is accredited by the Computing Science Accreditation Commission of ABET.

Electrical Engineering

The curriculum in electrical engineering is designed to give the student fundamental knowledge in the areas of general interest to all electrical engineers. The course of study is therefore oriented toward the basic theory and concepts which prepare students for entry into any of the many activities open to members of the profession including research, design, development, operations, management, teaching, sales, and consulting. Laboratory experience is emphasized to provide familiarity with electrical, electronic and computing equipment and with experimental techniques. Modern laboratories are available for electrical circuits, electronics, power systems, electromagnetics, measurements, digital signal processing, wireless communications and computers. Students are exposed to a variety of up-to-date computing environments to aid in their studies.

The curriculum is designed so that the equivalent of the first three to four semesters may be transferred from community colleges with minimal difficulty. The additional basic material common to all branches of electrical engineering is concentrated in the junior year, and maximum flexibility is permitted in the senior year, allowing the student to develop a breadth of interest or to select an area of speciality. 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.

Computer Engineering

Computer engineering is a field of study that encompasses the fundamental principles, methods, and modern tools for the design and implementation of computing systems. Advances in technology are yielding smaller and higher-performance computer systems permeating into a wide range of applications, from communication systems to consumer products and common household appliances. The computer engineering program provides a balanced perspective of both hardware and software elements of computing systems, and of their relative design trade-offs and applications. Computer engineering builds upon fundamental courses in mathematics, science, and the engineering disciplines to achieve a sound knowledge foundation and to develop breadth. Laboratory experiences are emphasized to provide students with background on experimental design and simulation techniques. Since core course sequences are completed in the junior year, students are able to pursue their career objectives with opportunities to select from a broad spectrum of elective courses. These include a wide range of computer engineering topics such as software design, VLSI design, embedded systems, computer architecture, networking, and operating systems.

The program culminates with a two-semester senior project. The project involves industry cooperation and provides students with a major design experience and exposure to a broad range of issues, including technical subjects as well as economics, safety, and societal considerations.

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. Option area course sequences allow students to specialize in specific areas such as computer graphics and animation, computer systems software, software engineering, or computer engineering.

Certification

Students interested in majoring in any of the School’s Bachelor degree programs should apply for certification as early as possible in their studies after completion of the respective courses listed below. Applications for certification are accepted prior to December 1 and May 1 for certification effective the following spring and fall, respectively. Qualification for initial certification, as well as continuation of certified status, will be evaluated based on several criteria including academic integrity, overall GPA, and GPA in mathematics, science, and electrical engineering or computer science courses. Acceptance will be made after the current semester grades are available and students will be notified of the decision as soon as possible.

Students may apply for certification into the Bachelor of Science in Computer Science degree program after completion of Cpt S 121, 122, 223; EE 214; Math 171, 172, 216; Phil 201; Phys 201. Students may apply for certification into the Bachelor of Arts in Computer Science degree program after completion of Cpt S 121, 122, 223; Math 201, 202, 216; Phil 201. Math 171, 172 may be substituted for Math 201, 202.

Students may apply for certification into the Bachelor of Science in Computer Engineering degree program after completion of Bio S 102 or Chem 105; Cpt S 121, 122; EE 214; Math 171, 172, 216; Phys 201, 202.

Students may apply for certification into the Bachelor of Science in Electrical Engineering degree program after completion of Bio S 102 or Chem 105; Cpt S 121, 122; Math 171, 172, 273; Phys 201, 202.

Schedule of Studies

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 REQUIREMENTS (128 HOURS)

**Freshman Year**

#### First Semester
- **Chem 105 [P] (GER)** 4
- **E E 120** 2
- **Engl 101 [W] (GER)** 3
- **GenEd 110 or 111 [A] (GER)** 3
- **Math 171 [N] (GER)** 4

#### Second Semester
- **Cpt S 121** 4
- **GenEd 110 or 111 [A] (GER)** 3
- **Math 172** 4
- **Math 220** 2
- **Phys 201 [P] (GER)** 4

**Sophomore Year**

#### First Semester
- **Biological Science [B] (GER)** 3
- **Cpt S 122** 4
- **E E 214** 3
- **Math 220** 2
- **Math 273** 2

#### Second Semester
- **Cpt S 223** 3
- **E E 214** 3
- **GenEd 110 or 111 [A] (GER)** 3
- **Math 220** 2
- **Phys 201 [P] (GER)** 4

**Junior Year**

#### First Semester
- **Arts & Humanities [H,G] (GER)** 3
- **E E 311** 3
- **E E 321** 3
- **E E 331** 3
- **E E 352** 3

#### Second Semester
- **E E 341** 3
- **E E 351** 3
- **E E 361** 3
- **E E 362 [M]** 2
- **Engl 402 [W] or 403 [W] (GER)** 3
- **Engineering Science II** 3

**Senior Year**

#### First Semester
- **Cpt S 422 [M]** 3
- **Cpt S 450** 3
- **Cpt S 451 or 452** 3
- **Cpt S Option Course** 3

#### Second Semester
- **Cpt S 401** 3
- **Cpt S 460** 3

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### COMPUTER ENGINEERING REQUIREMENTS (128 HOURS)

**Freshman Year**

#### First Semester
- **Chem 105 [P] (GER)** 4
- **Cpt S 121 Prog Design** 4
- **Engl 101 [W] (GER)** 3
- **Math 171 [N] (GER)** 4

#### Second Semester
- **Cpt S 223** 3
- **E E 214** 3
- **GenEd 110 or 111 [A] (GER)** 3
- **Math 220** 2
- **Math 273** 2

**Sophomore Year**

#### First Semester
- **Cpt S 223** 3
- **E E 214** 3
- **GenEd 110 or 111 [A] (GER)** 3
- **Math 220** 2
- **Phys 201 [P] (GER)** 4

#### Second Semester
- **Cpt S 224** 2
- **E E 352** 3
- **Engl 402 [W] or 403 [W] (GER)** 3
- **Engineering Science II** 3

**Junior Year**

#### First Semester
- **Cpt S 355** 6
- **Cpt S Option Courses** 6
- **Cpt S 317** 3
- **Cpt S 322 [M]** 3
- **Cpt S 360** 4
- **Cpt S 380** 1

#### Second Semester
- **Cpt S 317** 3
- **Cpt S 322 [M]** 3
- **Cpt S 360** 4
- **Cpt S 380** 1
- **Cpt S Option Course** 3
- **Engl 402 [W] or 403 [W] (GER)** 3

**Senior Year**

#### First Semester
- **Cpt S 422 [M]** 3
- **Cpt S 450** 3
- **Cpt S 451 or 452** 3
- **Cpt S Option Course** 3
- **Intercultural Studies [I,G,K] (GER)** 3

#### Second Semester
- **Cpt S 401** 3
- **Cpt S 460** 3

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### BACHELOR OF SCIENCE, COMPUTER SCIENCE REQUIREMENTS (123 HOURS)

#### Freshman Year

First Semester:
- **Cpt S 121** 4
- **Engl 101 [W] (GER)** 3
- **Math 171 [N] (GER)** 4

Second Semester:
- **Cpt S 122** 4
- **Engl 101 [W] (GER)** 3
- **Math 171 [N] (GER)** 4
- **Phys 201 [P] (GER)** 4

Sophomore Year:

First Semester:
- **Cpt S 223** 3
- **E E 214** 3
- **GenEd 110 or 111 [A] (GER)** 3
- **Math 220** 2
- **Math 273** 2

Second Semester:
- **Cpt S 224** 2
- **E E 352** 3
- **Engl 402 [W] or 403 [W] (GER)** 3
- **Engineering Science II** 3

Junior Year:

First Semester:
- **Cpt S 355** 6
- **Cpt S Option Courses** 6
- **Cpt S 317** 3
- **Cpt S 322 [M]** 3
- **Cpt S 360** 4
- **Cpt S 380** 1

Second Semester:
- **Cpt S 317** 3
- **Cpt S 322 [M]** 3
- **Cpt S 360** 4
- **Cpt S 380** 1
- **Cpt S Option Course** 3
- **Engl 402 [W] or 403 [W] (GER)** 3

Senior Year:

First Semester:
- **Cpt S 422 [M]** 3
- **Cpt S 450** 3
- **Cpt S 451 or 452** 3
- **Cpt S Option Course** 3
- **Intercultural Studies [I,G,K] (GER)** 3

Second Semester:
- **Cpt S 401** 3
- **Cpt S 460** 3
Cpt S Option Courses 6
Tier III Humanities or Social Sciences Course (GER) 3

Computer Science Option Areas
The computer science degree program includes an elective group of 18 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 advisor.

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.

The 18-credits of option area courses are chosen by selecting one option area from the list below (each area provides at least 15 credits), and selecting either Math 315 or one Cpt S 300-400-level course excluding computer skills and literacy courses.

Communications: Cpt S 445, or 455; E E 261/262, 321, 341, 451.
Computer Engineering: Cpt S 455 or 466; E E 261/262, 324, 424.
Management Information Systems: Cpt S 451*, 455; MIS 375 or 472; two from Mgt 301, 401, 489.
Mathematics: Math 420, 421, 452, 485; two courses from: Math 401, 402, 415, 440, 441.
Networks and Distributed Systems: Cpt S 455, 464, and three from Cpt S 425, 427, 451*, 452*, and 466.
Scientific Computation: Cpt S 330, 442, 443; Math 340 or 440, 364 or 464.
*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 REQUIREMENTS (122 HOURS) ©FYDA
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
First Semester Hours
Cpt S 121 4
GenEd 110 [A] (GER) 3
Engl 101 [W] (GER) 3
Math 2011 3
Phil 201 [H] (GER) 3

Second Semester Hours
Cpt S 122 4
GenEd 111 [A] (GER) 3
Math 202 [N] (GER)3 3
Math 216 3
Soc 101 [S,D] (GER) 3

Sophomore Year
First Semester Hours
Cpt S 223 3
Lab Sciences [B,P] (GER)2 4
Math 212 4
Minor Elective1 3

Second Semester Hours
Cpt S 224 2
E E 214 3
Lab Sciences [B,P] (GER)2 4
Math Elective1 3
Minor Elective1 3

Junior Year
First Semester Hours
Advanced Cpt S Elective4 3
Cpt S 355 3
E E 314 3
Intercultural [J,G,K] (GER) 3
Lab Sciences [B,P] (GER)2 4

Second Semester Hours
Cpt S 322 [M] 3
Engl 402 [W] (GER) 3
Minor Electives6 6
Science elective B [F,R,Q] (GER)2 3

Senior Year
First Semester Hours
Advanced Cpt S Elective4 6
Arts & Humanities [H,G] or Social Science [S,K] (GER) 3
Cpt S 422 [M] 3
Minor Elective1 3

Second Semester Hours
Advanced Cpt S Elective4 6
Cpt S 401 [S] (GER) 3
Minor Elective1 3
Tier III Humanities or Social Sciences Course (GER) 3

1 Either math sequence below will satisfy the math requirement for this degree. Sequence B will allow a broader selection of advanced computer science electives.

2 Science electives must include a year-long sequence (two semester including a laboratory in each semester) and two additional science courses, one of which must have a laboratory component. Acceptable science courses are those designated [P], [B], or [R]; courses with a lab component have an (L) designation in WSU’s GER system. At least one from each of the [B] and [P] categories is required. WSU does not currently offer a yearlong biology sequence.

3 Elective credits must include a minor program. Completion of a minor is a graduation requirement. If a minor in a science or engineering discipline is contemplated, Math Sequence B should be taken (see note 1).

4 Advanced computer science electives must be chosen to contain advanced work in at least three separate computer science areas, in order to comply with CSAC/CSAB guidelines. Eligible areas and courses include: Theory: Cpt S 317, 450, 453 (453 requires Math 220); Scientific Computing: Cpt S 330, 430 (courses require Math 172); Programming Languages: Cpt S 355, 452; Hardware Systems: Cpt S 360, 465, 466, 468; Cpt S 342, 424, 445, 456, 468; Hardware and Multimedia: Cpt S 342, 443, 445, 446, Math 418 (Cpt S 442 requires Math 171); Cpt S 445 requires Math 171, 220, and 273; Math 418 requires Math 171, 172; Software Systems: Cpt S 425, 427, 451, 455, 456; Intelligent Systems: Cpt S 440, 434; Software Engineering: Cpt S 423. Selected offerings of Cpt S 483 could fit in one or more of the categories above.

Minors

Computer Engineering: 16 semester hours of computer related courses in electrical engineering are necessary to earn a minor, 9 of which must be 300-400-level. E E 214, 314, and 324 are required.

Computer Science: The minor in computer science consists of 20 credits which must include Cpt S 121, 122, 223, and three 300-400-level Cpt S courses excluding computer skills and literacy courses. All prerequisites for minor courses must be met. The minor program must be approved by the Computer Science Undergraduate Coordinator.

Electrical Engineering: 16 semester hours of courses in electrical engineering are necessary to earn a minor, 9 of which must be 300-400-level. Two courses (6 semester hours) in addition to E E 214, 261, 262, and 314 are required.

Information Technology: 16 semester hours which must include Cpt S 121, 122, and three more courses that may include Cpt S 223 and other 300-400-level Cpt S courses. Credit will not be granted for both Cpt S 330 and 430. All prerequisites for minor courses must be met. The minor program must be approved by the Computer Science Undergraduate Coordinator.

Transfer Students
Students planning to transfer from other institutions should carefully note the sequence of courses listed above. Transfers from community colleges should consult the booklet “Transfer Programs for Washington Community Colleges” or should write directly to the School of Electrical Engineering and Computer Science for specific information.

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 combinational logic circuits with exposure to modern methods and design tools; introduction to sequential logic circuits.

261 Electrical Circuits 1 3 Prereq Math 315 or c//; Phys 202; c// in E E 262. Application of fundamental concepts of electrical science in linear circuit analysis; mathematical models of electric components and circuits.

262 Electrical Circuits Laboratory 1 (0-3) Prereq E E 261 or c//. Electrical instruments; laboratory applications of electrical laws; transient and steady-state responses of electrical circuits.

304 Introduction to Electrical Circuits 2 Prereq Math 315 or c//. Basic DC and AC circuits.
311 Electronics I Prereq E E 214, 261 with grade of C or better; major or minor in E E. Fundamental device characteristics including diodes, MOSFETs and bipolar transistors; small- and large- signal characteristics and design of linear circuits.

312 Electronics Laboratory I 1 (0-3) Prereq admission to engineering consortium program, E E 321 or c/c/. Lab exercises in the implementation and analysis of electronic circuits.

314 Microprocessor Systems 3 (2-3) Prereq E E 214, Cpt S 122. Microprocessor system architecture, instruction sets, and interfacing; assembly language programming.

315 Microcomputers and Assembly Language 3 Prereq admission to engineering consortium program, six semester credits of programming. Study of microprocessor systems, including CPUs, memory, registers, bus structures, computer control, and assembly language programming.

316 Microprocessor Laboratory 1 (0-3) Prereq admission to engineering consortium program, E E 315 or c/c/. Lab exercises in microprocessor systems.

321 Electrical Circuits II 3 Prereq E E 261 with grade of C or better; major or minor in E E. State space analysis, Laplace transforms, network functions, frequency response, Fourier series, two-ports, energy and passivity.

322 Electrical Circuits Laboratory II 1 (0-3) Prereq admission to engineering consortium program; E E 321 or c/c/. Lab exercises in the time and frequency-domain analysis of electrical circuits.

324 Fundamentals of Digital Systems 4 (3-3) Prereq E E 214. Design and analysis of synchronous sequential machines; module and bit-slice devices; alternative architectures; system-level design; asynchronous sequential machines.

327 Electronics II 3 Prereq admission to engineering consortium program, E E 311. Analysis and design of electronic circuits, both analog and digital, discrete and integrated.

328 Electronics Laboratory II 1 (0-3) Prereq admission to engineering consortium program, E E 327 or c/c/. Lab exercises in the implementation and analysis of electronic circuits.

331 Electromagnetic Fields and Waves 3 Prereq Math 315; Phys 202; major or minor in E 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 I 3 (1-6) Prereq E E 311, 321, or c/c; major in E 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/c in E E 361, c/c in E E 341, c/c in E E 421, or E E 423. 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. Resume writing, investigation of job and internship opportunities; curriculum integration; professional ethics; continuity of design experience. S, F grading.

414 [M] Senior Design Prep 3 Prereq senior standing in engineering consortium program. Engineering project management and design; teamwork, client interaction, specifications, planning, ethics, costing, oral and written technical presentations.

415 Design Project Management 2 Prereq senior standing. Project scheduling/planning, technical writing, oral presentation skills, working in teams, TQC, TQM, market-driven organization.

416 [M] Electrical Engineering Design 3 (1-6) Prereq E E 415; Engl 402 or 403. Electrical engineering design of specific projects including design specification; written and oral presentations and reports.

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 433). Credit not granted for both E E 417 and 517.

424 Digital System Architecture 4 (3-3) Prereq E E 314. Modern developments in digital system design, parallel structures, pipelining, input/output, high speed circuits, laboratory experience in digital system design; emphasis on CPU architecture.

425 Computer Architecture and Design 3 Prereq E E 315; engineering consortium students only. Study of computer design at the architectural and gate levels, pipelining, RISC vs. CISC, cache systems, register-transfer level simulation.

426 Introduction to Electromagnetic Compatibility 3 Prereq E E 341, 351. Electromagnetic compatibility requirements and principles, nonideal component behavior, conducted and radiated emissions and susceptibility, crosstalk, shielding, system design. Credit not granted for both E E 426 and 526.

431 RF and Microwave Circuits and Systems 3 (3-3) Prereq E E 331, 351. Design and implementation of RF/microwave modules and systems for telecommunications; Microstrip, filters, mixers, amplifiers, frequency synthesizers and transceivers.

432 RF Engineering for Telecommunications 4 (3-3) Prereq E E 341, 351. System and propagation issues for wireless telecommunications; cellular, PCS, microwave, and satellite system analysis, design, measurement, and testing.

434 ASCI and Digital Systems Design 3 Prereq E E 314, 321, 324. Application Specific Integrated Circuit and Digital System Design methods, semicustom, full-custom, and field-programmable devices; digital system architecture, electronics, and tests.

441 Digital Control Systems 3 Prereq E E 341, 489. Linear difference equation, Z-transform, discretization, A/D and D/A conversion, sampled data system analysis, frequency domain design, state space design, quantization effects.

442 Robotics 3 Prereq E E 489 or M E 481 or c/c. Robots, kinematics, inverse kinematics, Jacobians, dynamics, sensors, actuators, position control, force control, hybrid control, trajectory generation.

445 Digital Image Processing 3 Same as Cpt S 445.


455 Introduction to Computer Networks 3 Same as Cpt S 455.

464 Digital Signal Processing 3 Prereq E E 341. Discrete and fast Fourier transforms; Z-transform; sampling; discrete convolution; digital filter design; effects of quantization.


466 VLSI Design 3 (2-3) Prereq E E 311, 314, 324. Very Large Scale Integrated circuit, system and physical design using CAD software: product specification, modeling, implementation, documentation and reporting.

472 Power Systems Laboratory II 2 (0-6) May be repeated for credit; cumulative maximum 4 hours. Prereq E E 362; c/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) Prereq E E 352. Principles of electrical measurements and techniques with individual transducer design, development and test problem; formal report.

476 Analog Integrated Circuits 3 Prereq E E 311; 351 or c/c in E E 489 or c/c in E E 477 for capstone design credit. Analysis and design of analog integrated circuits in CMOS and BiCMOS technologies; current mirrors, gain stages, operational amplifiers, frequency response, and compensation. Credit not granted for both E E 476 and 576.

477 [M] Analog Integrated Circuits Laboratory 2 Prereq c/c in E E 476. Laboratory applications of E E 476 including the computer-aided design of analog integrated circuits; emphasis on design documentation and reporting.

480 Microelectronic Fabrication 3 Prereq MSE 302 or by permission. Semiconductors, photolithography, diffusion, oxidation, thin film deposition, plasma and chemical etching, process integration, fabrication and testing of diodes and MOS capacitors. Credit not granted for both E E 478 and 578.

483 Topics in Electrical and Computer Engineering V 1-3 May be repeated for credit; cumulative maximum 3 hours. Current topics in electrical engineering and computer engineering.
486 Power Electronics 3 Prereq E E 311, 321. High power semiconductor devices; analysis and design of linear and switching power supplies, high frequency magnetics, controller design. Cooperative course taught jointly by WSU and UI (EE 424).

489 Introduction to Control Systems 3 Prereq E E 341. State variable models, system response, stability analysis, root locus analysis and design; frequency-response and state-space analysis and design.

491 Performance of Power Systems 3 Prereq E E 361, 362. Static and dynamic behavior of power systems, powerflow, and economic considerations.

493 Protection of Power Systems I 3 Prereq E E 361. Analysis and equipment fundamentals of power system protection; symmetrical components, fault calculations; fuses; and relays including burden calculations.

494 Protective Relay Labs 2 (0-6) Prereq E E 493 or co. Experiments and measurements of protective relay equipment under test, simulated fault and fault conditions.

495 Internship in Electrical Industry V 2-4 May be repeated for credit; cumulative maximum 8 hours. Prereq E E 341 or 361. For juniors and seniors in EE. Students work full time on engineering assignments in approved industries. S, F gradng.

496 Introduction to Semiconductor Device Theory 3 Prereq E E 311 or MSE 302. Equilibrium statistics of electrons and holes; carrier dynamics; p-n junctions, metal-semiconductor junctions, BJTs, MOSFETs, LEDs.

497 RF Mosfet Modeling 3 Prereq E E 496. Mosfet device operation, SPICE BSM, low end frequency small signal models, noise, parameter extraction, device simulation, DC and RF measurements.

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

501 Linear System Theory 3 Prereq E E 489. Dynamic systems from the state variable approach; observability, controllability, stability, and sensitivity of differential and nondifferential systems. Cooperative course taught jointly by WSU and UI (EE 572).

502 Linear Multivariable Control 3 Prereq E E 501. Optimal linear feedback control, optimal stochastic observers, LQG/LTR design methodology, modern Wiener-Hopf design, robust controllers. Cooperative course taught jointly by WSU and UI (EE 574).

504 Modern Optics 3 Prereq E E 341, 351, Stat 443. Diffraction theory; Fourier transforming and imaging properties of lenses, spatial filtering, holography, temporal and spatial coherence, imaging through random media.


507 Random Processes in Engineering 3 Prereq Stat 443. Functions of random variables; random sequences; stochastic processes; mean-square stochastic calculus; ergodicity; spectral density; linear transformations, filtering, dynamic systems. Cooperative course taught jointly by WSU and UI (EE 570).

508 Estimation Theory for Signal Processing, Communications, and Control 3 Prereq E E 501, 507, or equivalent. Principles of statistical estimation; LLS; Kalman filtering; smoothing; prediction; maximum-likelihood and Bayesian estimation.


511 Protection of Power Systems II 3 Prereq E E 491 or co/. Protection of electrical equipment as related to electric power systems with emphasis on digital algorithms. Cooperative course taught jointly by WSU and UI (EE 526).

512 Active Network Synthesis 3 Prereq E E 341. Devices and classical network synthesis, two-port network theory, filters, active filters.

514 Optoelectronics Lab I V 1 (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 Prereq 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 Prereq graduate standing. Graduate-level counterpart of E E 417; additional requirements. Credit not granted for both E E 417 and 517.

518 Advanced Electromagnetic Theory I 3 Prereq E E 351. Electromagnetic waves, electromagnetic theorems and concepts, solutions to the wave equation in rectangular, cylindrical and spherical coordinates. Cooperative course taught by WSU, open to UI students (EE 530).

519 Advanced Electromagnetic Theory II 3 Prereq E E 518. Exact solutions to canonical electromagnetic diffraction problems, high and low frequency limits, foundations of numerical solutions to electromagnetic scattering problems.

520 Plasma Engineering 3 Prereq E E 351 or Phys 342. Electromagnetics, kinetic theory, and fluid mechanics of plasmas in space, arcs, plasma processing, coronas, and fusion reactors.

521 Analysis of Power Systems 3 Prereq E E 491. Concepts and practices of modern power engineering, including steady-state and dynamic analysis, economic and control design.

522 High Voltage Engineering 3 Prereq E E 331. High voltage-high power phenomena; design and measurements associated with electrical transmission, current interruption, insulation, transformation, lightning, and corona.

524 Advanced 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 (EE 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), open to 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 538), open to WSU students.

541 Digital Control Systems II 3 Prereq E E 441. State space approach, SISO, optimal control, State estimators, stochastic systems, State estimation in the presence of noise.

543 Signal Theory 3 Prereq E E 341. Theory of signals; signal spaces; basis sets; signal representations; projection theorem; Fourier transform; optimum signal design.

544 Neural Computation 3 Same as Cpt S 544.

545 Data Compression 3 Prereq E E 507, 543. Source coding with a fidelity criterion; quantization theory; predictive, transform and subband coding; noiseless source codes.

548 Information Theory and Channel Coding 3 Prereq E E 451, 507. Information theory: entropy, mutual information, source and channel coding theorems, channel capacity, Gaussian channels; channel coding: block and convolutional codes.

551 Data Communication Systems 3 Prereq E E 341, 507. Digital communications; multi-amplitude phase signal constellation; probability of error performance; cutoff rate; Viterbi algorithm; trellis coded modulation.

554 Asynchronous Digital Systems 3 Prereq E E 324. Analysis and design of high speed asynchronous state machines, timing defect analysis, modular elements, arbiters, programmable sequencers, system level design. Cooperative course taught jointly by WSU and UI (EE 540).

555 Computer Communication Networks 3 Prereq Stat 443. Packet switching networks; multi-access and local-area networks; delay models in data networks; routing and flow control.

562 Fault Tolerant Computer Systems 3 Same as Cpt S 562.
564 Advanced Signal Processing 3 Prereq Stat 443. Signal processing and communication theory aspects of frequency domain analysis of continuous and discrete random signals.

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 (EE590).

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 RF Mosfet Modeling 3 Graduate-level counterpart of E E 497; additional requirements. Credit not granted for both E E 497 and 597.

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, IMPATTs, 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 I (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 c/. Central concepts of computer science; algorithms, computability, complexity, artificial intelligence in the context of current computational devices and software.

153 BASIC Programming 3 Comprehensive programming practice using contemporary instances of the BASIC programming language.

203 FORTRAN Programming 2 Prereq Math 171 or c/. Comprehensive programming practice using FORTRAN.

207 Introduction to the Internet 3 Prereq Cpt S 105 or 121. Skills and strategies for utilization of the resources of the Internet.

251 C Programming Language 2 Prereq Math 171 or c/. 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.

302 Unix System Administration 3 (2-3) Prereq Cpt S 121. Functions and responsibilities of Unix system administrators; disks, networking, accounting and policy.

306 Programming for Engineers 3 Prereq Math 220, 273, 315. Problem-solving methods, software development principles structured programming with engineering applications.

307 Programming for Engineers II 3 Prereq Cpt S 306. Continuation of Cpt S 306; advanced programming topics and data structures with engineering applications.

401 [T] Computers and Society 3 Prereq Cpt S 250 or 301; completion of one Tier I and three Tier II courses; completion of university writing portfolio. Ethical and societal issues related to computers and computer networks; computer crime, software theft, privacy, viruses, worms.

405 The Use of Computer Systems 3 Prereq junior or senior standing. For nonmajors. Computers, computer systems, and software packages for advanced students in other disciplines; hands-on use. No previous computer experience required.

Computer Science Courses

Special Notice: With the exception of the Computer Skills and Literacy courses, enrollment in 300–400-level computer science courses is restricted to certified majors or minors in computer science, computer engineering, or electrical engineering, and to juniors and seniors officially certified into other degree programs requiring these computer science courses.

Cpt S

120 Innovation in Design 2 Same as M E 120.

121 Program Design and Development 4 (3-3) Prereq Math 107. Formulation of problems and top-down design of programs in a modern structured language for their solution on a digital computer.

122 Data Structures 3 Prereq Cpt S 121 or equivalent. Advanced programming techniques: data structures, recursion, sorting and searching, and basics of algorithm analysis.

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.

317 Automata and Formal Languages 3 Prereq Cpt S 122, Math 216. Finite automata, regular sets, pushdown automata, context-free language, Turing machines and the halting problem.

322 [M] Software Engineering Principles I 3 Prereq Cpt S 224, Math 216, c/. In English 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 Math 121, 203, or 251; c/ in Math 315. Power and limitations of numerical solutions; design, analysis and implementation of numerical algorithms; visualization and rendering.

355 Programming Language Design 3 Prereq Cpt S 223, 224. Design concepts of high-level programming languages; survey of existing languages, experience using some languages.

360 Systems Programming 4 (3-3) Prereq Cpt S 223; E E 314. Implementation of systems 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 360, Math 216. Computer security concepts, models and mechanism; encryption technology, formal models, policy and ethical implications. Credit not granted for both Cpt S 427 and 527.

430 Numerical Analysis 3 Same as Math 448. Credit not granted for both Cpt S 430 and 530.

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School of Electrical Engineering and Computer Science
434 Neural Network Design and Application
3 Prereq Cpt S 122, Stat 360. Hands-on experience with neural network modeling of nonlinear phenomena; application to classification, forecasting, identification and control. Credit not granted for both Cpt S 434 and 534.

435 Concurrent and Real-Time Systems 3
Prereq Cpt S 322, 467; engineering consortium students only. Analysis, design, and programming of concurrent and real-time systems.

440 Introduction to Artificial Intelligence 3
Prereq Cpt S 122; Math 212 or 360. Basic issues of knowledge representation and automated problem solving; introduction to the theory and application of expert systems technology.

442 Computer Graphics 3
Prereq Cpt S 223, 224; Math 220. Raster operations; transformations and viewing; geometric modeling; visibility and shading; color. Cooperative course taught by WSU, open to UI students (CS 324). Credit not granted for both Cpt S 442 and 542.

444 Compiler Design 3
Prereq Cpt S 360. Concepts of lexical analyzers, syntactic analyzers, in- termediate code generation, storage, and object code generators. Cooperative course taught by UI (CS 581), open to WSU students (CS 584).

446 Animation Programming 3 (1-4)
Prereq Cpt S 122. Introduction to computer animation production, animation programming techniques, simulation, and dynamic visualization.

450 Design and Analysis of Algorithms 3
Prereq Cpt S 223, 317, Stat 360. Analysis of data structures and algorithms; computational complexity and design of efficient data-handling procedures.

451 Introduction to Database Systems 3
Prereq Cpt S 223, 224. Introduction to database concepts, data models, database languages, database design, implementation issues.

452 Compiler Design 3

453 Graph Theory 3
Same as Math 453. Credit not granted for both Cpt S 453 and 553.

455 Introduction to Computer Networks 3
Prereq Cpt S 360. Concepts and implementation of computer networks; architectures, protocol layers, internetworking and addressing case studies.

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).

467 System Software 3 (2-3)
Prereq E E 315; engineering consortium students only. Engineering and design of system software in C and assembly, including libraries, executors, and I/O; use of debugging and emulators.

480 Object-Oriented Windows Programming 3 (2-3)
Prereq admission to consortium program, six semester credits of HLL programming. Object-oriented software design and programming in a modern windowing environment.

483 Topics in Computer Science V 1-4
May be repeated for credit. Prereq Cpt S 322. Current topics in computer science or software engineering.

490 Work Study Internship V 1-9
May be repeated for credit; cumulative maximum 9 hours. Prereq Cpt S 224, E E 314, 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 Seminar 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 Algorithmics 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 solutions to software engineering problems. Cooperative course taught by UI (CS 581), open to WSU students.

522 Software Reuse 3
Prereq Cpt S 422. Basic principles of software reuse, compositional and generative reuse, with specific topics selected from current literature, reverse engineering.

523 Software Engineering Measurement 3
Prereq Cpt S 521. Measurement methodology 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 products; measurement of software products and the applications of 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 583), open to WSU students.

524 Software Specification and Analysis 3
Prereq Cpt S 422 or instructor's permission; Math 216. Formal specification, abstraction, and analysis of software using a formal specification language; case studies of design.

527 Computer Security 3
Graduate-level counterpart of Cpt S 427; additional requirements. Credit not granted for both Cpt S 427 and 527.

530 Numerical Analysis 3
Prereq graduate standing. Graduate-level counterpart of Cpt S 430; additional requirements. Credit not granted for both Cpt S 430 and 530.

531 Computational Linear Algebra 3
Same as Math 544.

532 Advanced Numerical Analysis 3
Same as Math 545.

533 Numerical Analysis of Elliptic PDEs 3
Same as Math 546.

534 Neural Network Design and Application 3
Prereq graduate standing. Graduate-level counterpart of Cpt S 434; additional requirements. Credit not granted for both Cpt S 434 and 534.

541 Artificial Intelligence 5
Prereq Cpt S 440. Intelligent computer programs; simulation of cognitive processes.

542 Computer Graphics 3
Prereq graduate standing. Graduate-level counterpart of Cpt S 442; additional requirements. Credit not granted for both Cpt S 442 and 542.

543 Multimedia Systems 3
Prereq Cpt S 455, 460. Survey of recent advances in multimedia systems: applications, authoring tools, information retrieval, network and operating system support, and data management.

544 Neural Computation 3
Prereq Math 315, Stat 443. Parallel processing inspired by natural neural systems; neural computer architecture, supervised and unsupervised learning, generalization, implementation, and application; neurophysiological basis.

546 Computer Animation 3
May be repeated for credit; cumulative maximum 9 hours. Advanced computer animation techniques; advanced specialization in building/design simulation, dynamic modeling and visualization, engineering animation.

548 Advanced Computer Graphics 3
Prereq Cpt S 442. Solid modeling, virtual realism, light and color models, advanced surface generation techniques.

549 Genetic Algorithms 3
Prereq Cpt S 223, Math 360. Basic concepts, fundamental theories, and techniques of genetic algorithms; applications.
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 Boeing Company in the Puget Sound area and to other high-tech firms around the country, at WSU Spokane, WSU Tri-Cities, and WSU Vancouver. Classes in the program are offered at times convenient for the working engineer. Engineering management students are engineers who bring a significant amount of experience with them into the academic arena from a variety of engineering and management backgrounds. The college also offers four certificates in Engineering Management topics.

Visit the Engineering Management Program at www.cea.wsu.edu/engrmgt.

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:

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<tr>
<th>Core Courses</th>
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<td>Stat 430</td>
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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) 353-0125.

Description of Courses

Engineering Management

E M

426 Constraints Management 3 Identifies factors that block improvements in any system; effective breakthrough solutions; continual systems improvements for manufacturing, administration, projects.

430 Applications of Constraints Management 3 Understanding and applying proved solutions developed by the Theory of Constraints in areas of production, project management, finance, and distribution.

460 Manufacturing and Operations Design and Strategy 3 Prereq junior standing. Concepts and techniques for design and managing manufacturing and services, operations intended to develop a world class organization.

480 Quality Control and Reliability Design 3 Prereq junior standing. Quality analysis including process modeling, product quality, statistical process control, process capability studies and reliability prediction models.

485 Quality Engineering Using Experimental Design 3 Prereq junior standing. The process of designing quality into products and processes using Taguchi techniques for robust and parameter design.

490 Design for Product and Service Realization/Manufacturability 3 Prereq junior standing. Tools and techniques used by engineers for the improvement of the design of products and services.

501 Management of Organizations 3 Exploration of issues related to individual behavior in work organizations, including motivation, leadership, team-building, and team management skills.


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 Graduate-level counterpart of E M 426; additional requirements. Credit not granted for both E M 426 and 526.

530 Applications of Constraints Management 3 Graduate-level counterpart of E M 430; additional requirements. Credit not granted for both E M 430 and 530.

540 Operations Research for Managers 3 Rec Math 273. Applying linear, integer, goal programming: network optimization; queueing 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 Integrated Supply Chain Management 3 How technical managers analyze and manage the flow of materials, services, and information for products from inception to final customer.
564 Project Management 3 Rec basic statistics course. Planning, organizing, scheduling and controlling major projects; human dimensions, PERT and CPM scheduling models, resource allocation, and cost controls.

565 Systems Engineering Management 3 Prereq graduate standing. Design manufacture, operation of complex system development for engineering managers; project planning, organizing, and controlling tools for engineering system constraints.

570 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 I V 1-3 May be repeated for credit; cumulative maximum in E M 595 and 596, 9 hours. A wide range of current high-interest engineering management topics.

596 Advanced Topics in Engineering Management II 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.

Department of English


The major in English provides students with a broad critical and cultural understanding of literature and literary studies, while at the same time emphasizing the writing and analytical skills that are vital to success in the university, in professional and graduate school, and in the workplace. The program of study is flexible and allows English majors to focus on particular areas of intellectual interest, to pursue electives, minors, and second majors in other departments, and to shape their academic careers in line with professional and personal interests. The curriculum is designed for (1) students who desire a broad education emphasizing language and literature, (2) students who wish to teach or to prepare for graduate studies in English, and (3) students who intend to use the background and skills learned in the major as a foundation for careers in writing, editing, law, or business. The curriculum provides majors the opportunity to complete their studies with a small discussion seminar or senior project in their area of emphasis.

Students who are preparing to teach English in the public schools of Washington should examine the summary of requirements for majors and minors listed in the Department of Teaching and Learning in this catalog, and they should confer with the College of Education concerning the requirements for certification.

The Department of English offers courses of study leading to the degrees of Bachelor of Arts, Master of Arts, and Doctor of Philosophy in English. The department participates in the interdepartmental program in American Studies leading to the degrees of Bachelor of Arts, Master of Arts, and Doctor of Philosophy in American Studies. Students interested in the Bachelor of Arts in this interdisciplinary field should consult the requirements listed under Program in American Studies. Students interested in interdisciplinary degrees in areas such as linguistics, humanities, and classical studies should consult the requirements within the Program in General Studies. Requirements for the Electronic Media and Culture Bachelor of Arts in Humanities, which the Department of English administers on the Pullman campus, are listed below.

Schedule of Studies

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

G. Kennedy (Pullman), and C. Goucher (Vancouver), A. Espinosa-Aguilar (Tri-Cities), 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 a 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 REQUIREMENTS
### REQUIRING

#### FYDA

### Freshman Year

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<tr>
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<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
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<td>Second Semester</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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<td>Elective</td>
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<td>Second Semester</td>
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<td>Engl 304</td>
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<td>Liberal Arts [H,G,S,K,I] (GER)</td>
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<td>Engl 301 or F A 332</td>
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<td>Electives</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<td>Second Semester</td>
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<tr>
<td>EMC Concentration^{3}</td>
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<tr>
<td>EMC Core^{2}</td>
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<td>Engl 356</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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#### Senior Year

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<tr>
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<td>Second Semester</td>
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<td>EMC Concentration^{3}</td>
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<tr>
<td>Senior Seminar, Senior Thesis, or Internship</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<td>3</td>
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<tr>
<td>Electives</td>
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</tbody>
</table>

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, F A 331, Psych 301.
3. Students are expected to complete an appropriate 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

Six 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 II** is designed for students preparing for graduate study in English and related fields. **Option III** is for students who need specific training in the teaching of language and literature at the secondary level; it is coordinated with the Department of Teaching and Learning. **Option IV** is for English majors planning to enter law school; it emphasizes analytical and verbal skills and breadth requirements in areas identified as requisite to success in the profession by law schools. **Option V** is for English majors planning for a career in business; it emphasizes analytical and communication skills, and a core of business, economics, and computer science courses required for most business careers. **Option VI** is for students interested in creative writing in various forms (poetry, fiction, nonfiction prose), in editing and publishing, and in careers drawing on related creative and professional skills.

Options I-IV in the major include a four-course upper-division concentration, which must include an appropriate senior seminar, senior project (the latter possible with an acceptable proposal and advisor available to direct), or internship, the whole making up a coherent area of study. Concentrations must be approved by advisor, may include one nondepartmental or 100-200-level course if appropriate, and must fall into one of the following categories: English Literature, American Literature, Literature and Criticism, World Literature/Humanities, Writers of Color/Ethnic Studies, Gender Identity and Literature, Literature and Cultural Studies, Language and Linguistics, or Writing and Rhetoric (Professional Writing, Creative Writing, or Rhetoric and Theory Emphasis). Some 300-400-level courses 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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Credits</th>
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<tbody>
<tr>
<td>First Semester</td>
<td></td>
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<tr>
<td>Hum 101 [H] or 103 [H] (GER)</td>
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</table>

### I. ENGLISH MAJOR: GENERAL REQUIREMENTS

### II. GRADUATE-STUDY PREPARATION REQUIREMENTS (120 HOURS)

#### Freshman Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Second 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>Biological Sciences [B] (GER)</td>
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<tr>
<td>Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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#### Sophomore Year

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<tr>
<th>Semester</th>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>Engl 305 [H] or 306 [H] (GER)</td>
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#### Junior Year

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<tr>
<th>Semester</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>American Writers of Color</td>
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<tr>
<td>Concentration Elective</td>
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<td>3</td>
</tr>
<tr>
<td>Engl 380, 381, or 382</td>
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<tr>
<td>English Literature Elective</td>
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<td>Electives</td>
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<td>3</td>
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<tr>
<td>Complete Writing Portfolio</td>
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#### Senior Year

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<th>Semester</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>Concentration Elective</td>
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#### Second Semester

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<tr>
<th>Semester</th>
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<th>Credits</th>
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<tr>
<td>Senior Seminar, Senior Thesis, or Internship</td>
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<tr>
<td>Electives</td>
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<td>6</td>
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</table>

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.

### Department of English

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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 Color² 3
- Concentration Elective 3
- Engl 380, 381, or 382² 3
- English Language Elective¹ 3
- Elective 3
- Complete Writing Portfolio

Second Semester
- Concentration Elective 3
- English Option Elective ³ 3
- Electives 9

Senior Year

First Semester
- Concentration Elective 3
- English Option Elective ³ 3
- Electives 9

Second Semester
- Senior Seminar, Senior Thesis, or Internship ³ 3
- Tier III Course [T] (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.

III. ENGLISH TEACHING REQUIREMENTS (120 HOURS) 

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
- ComSt 102 [W] (GER)³ 3
- Engl 383, 384, 385, or 386 3
- Engl 387, 388, or 389 3
- Grammar/Linguistics Elective² 3
- Tier III Course [T] (GER) 3

Junior Year

First Semester
- American Writers of Color¹ 3
- Concentration Elective ³ 3
- Engl 300 1
- Engl 380, 381, or 382² 3
- English Literature Elective¹ 3
- Elective 3
- Complete Writing Portfolio

Second Semester
- Concentration Elective ³ 3
- Engl 324 3
- Electives 9

Senior Year

First Semester
- Concentration Elective ³ 3
- Engl 323 3
- Electives 9

Second Semester
- Engl 324 3
- Senior Seminar, Senior Thesis, or Internship ³ 3
- Tier III Course [T] (GER) 3
- Elective 3

V. ENGLISH/BUSINESS REQUIREMENTS (120 HOURS) 

Freshman Year

Second Semester
- Economics Elective¹ 3
- Engl 380, 381, or 382³ 3
- English Language Elective¹ 3
- Phil 260 [H] (GER) 3
- Complete Writing Portfolio

Second Semester
- Concentration Electives 6
- Pol S Elective¹ 3
- Electives 6

Senior Year

First Semester
- Concentration Elective 3
- Electives 9

Second Semester
- Senior Seminar, Senior Thesis, or Internship ³ 3
- Tier III Course [T] (GER) 3
- Electives 9

¹ Pol S 101 [S], 300, 330, 404, or 405.
² One from Engl 311, 314, 321, 322, 341, 345, or 346.
³ Macroeconomics (Econ 102, 198, 416, 418, or 472; Acctg 230 may be substituted).
⁴ If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.
⁵ 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.
⁶ Approved capstone for concentration.

IV. ENGLISH/PRE-LAW REQUIREMENTS (120 HOURS) 

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
- Biological Sciences [B] (GER) 4
- Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER) 3
- GenEd 111 [A] (GER) 3
- Hist Elective [H] (GER) 3
- Social Sciences [S,K] (GER) 3

Second Semester
- Arts & Humanities [H,G], Intercultural [I,G,K],
- Social Sciences [S,K] (GER) 3
- Engl 302 [M] [W] (GER) 3
- Engl 305 [H] or 306 [H] (GER) 3
- Physical Sciences [P] (GER) 4
- Pol S Elective¹ 3

Second Semester
- Engl 383, 384, 385, or 386 3
- Engl 387, 388, or 389 3
- Intercultural [I,G,K] (GER) 3
- Phil 201 [H] (GER) 3
- Elective 3

Second Semester
- Concentration Electives 6
- Pol S Elective¹ 3
- Electives 6

Second Semester
- Senior Seminar, Senior Thesis, or Internship ³ 3
- Tier III Course [T] (GER) 3
- Electives 9

Approved capstone for concentration.
**Freshman Year**

**Second Semester**

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<tbody>
<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 Sciences [B] (GER)</td>
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<tr>
<td>Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER)</td>
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</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
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**Sophomore Year**

**First Semester**

<table>
<thead>
<tr>
<th>Elective</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Econ 102 [S] or 198 [S] (GER)</td>
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<tr>
<td>Engl 302 [M] [W] (GER)</td>
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<tr>
<td>Engl 305 [H] or 306 [IH] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Elective</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Concentration Elective</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Cpt S 105 or Cpt S 100 and 101</td>
<td>4</td>
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<tr>
<td>Engl 383, 384, 385, or 386</td>
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<tr>
<td>Engl 387, 388, or 389</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**

**First Semester**

<table>
<thead>
<tr>
<th>American Writers of Color</th>
<th>Hours</th>
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<tbody>
<tr>
<td>3</td>
<td></td>
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<tr>
<td>B Law 210</td>
<td>3</td>
</tr>
<tr>
<td>Concentration Elective</td>
<td>3</td>
</tr>
<tr>
<td>Engl 380, 381, or 382</td>
<td>3</td>
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<tr>
<td>MIS 250 or 350</td>
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<table>
<thead>
<tr>
<th>Complete Writing Portfolio</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Elective</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Concentration Elective</th>
<th>Hours</th>
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<tbody>
<tr>
<td>English Literature Elective</td>
<td>3</td>
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<tr>
<td>Mgt 301 or Dec S 340</td>
<td>3</td>
</tr>
<tr>
<td>Phil 260 [H] (GER)</td>
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<td>Elective</td>
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**Senior Year**

**First Semester**

<table>
<thead>
<tr>
<th>Concentration Elective</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Mkgr 360</td>
<td>3</td>
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<tr>
<td>Electives</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Engl 402 [M] [W] (GER)</th>
<th>Hours</th>
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<tr>
<td>3</td>
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<tr>
<td>Senior Seminar, Senior Thesis, or Internship</td>
<td>3</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Electives</td>
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**Jr Year**

<table>
<thead>
<tr>
<th>Creative Writing or Literature Elective</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 451 or 452</td>
<td>3</td>
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</table>

**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 writing or writing-related courses: Engl 255, 300; Engl 256, 354, 355, 401, or 458; 301 or 302; 402/403; 405 or 498.

**Professional Writing Certificate**

To earn the Professional Writing Certificate, students must complete the following five courses with a 3.0 g.p.a. or better: Anth 350, Engl 301, Engl 355, Engl 402, and Engl 498. Engl 498 must be taken only after the other four courses have been completed. The certificate can be earned through the Distance Degree Programs and/or on-campus offerings. The university undergraduate certificate fee will apply.

**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**

**Engl**

100 **Basic Writing** 3 Prereq writing placement exam. Designed to introduce students to writing and reading in the university. S, F grading.

101 [W] **Introductory Writing** 3 Prereq placement exam or Engl 100. Designed to develop students’ academic writing, critical thinking, rhetorical strategies, reading and library skills. Credit not granted for more than one: Engl 101, 105, and 198.

102 **Writing Tutorial** V 1 (0-3) to 3 (0-9). May be repeated for credit; cumulative maximum 5 hours. Prereq writing placement exam. Student-centered group tutorial focusing on writing improvement usually connected to the 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.

**VI. CREATIVE WRITING REQUIREMENTS**

(120 HOURS) ✔ FYDA

Requirements in this option involve 39-credit hours, approximately half in creative writing and related professional courses, the remainder in supporting literature courses approved by the advisor. In addition to these requirements, students are urged to elect GER courses in American and world cultures, history, and society to round out the liberal arts education that they will bring to careers in creative writing, editing, publishing, and related fields.

**Freshman Year**

**Second Year**

<table>
<thead>
<tr>
<th>Arts &amp; Humanities [H, G] or Social Sciences [S, K] (GER)</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3</td>
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<tr>
<td>Engl 251</td>
<td>3</td>
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<td>GenEd 111 [A] (GER)</td>
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**Sophomore Year**

**First Year**

<table>
<thead>
<tr>
<th>Arts &amp; Humanities [H, G], Intercultural [I, G, K], or Social Sciences [S, K] (GER)</th>
<th>Hours</th>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<tr>
<td>Engl 351, 352, or 353</td>
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</tr>
<tr>
<td>Elective (200-level lit. course recommended)</td>
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**Second Year**

<table>
<thead>
<tr>
<th>Art &amp; Humanities Elective</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 355, 357, or 402</td>
<td>3</td>
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<tr>
<td>English Literature Elective</td>
<td>3</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<tr>
<td>Elective</td>
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**Junior Year**

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<thead>
<tr>
<th>English Minor</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Complete Writing Portfolio</td>
<td>3</td>
</tr>
<tr>
<td>Literature Elective (300-400 level)</td>
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<tr>
<td>Electives</td>
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**Senior Year**

<table>
<thead>
<tr>
<th>English Minor</th>
<th>Hours</th>
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<tbody>
<tr>
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<td>3</td>
</tr>
<tr>
<td>Literature Elective (300-400 level)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
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</table>

**Professional Writing Minor**

The student must complete 16 hours in the following writing or writing-related courses: Engl 255, 300; Engl 256, 354, 355, 401, or 458; 301 or 302; 402/403; 405 or 498.
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’ research skills for writing across the disciplines.

202 Grammar in Context 1 Prereq concurrent writing course. May be repeated for credit; cumulative maximum 2 hours. Tutorial to assist students in mastering conventions of Standard Edited American English. S, F grading.

209 [H] Readings in English Literature 3 Selected works by diverse voices from different eras of American literature; importance of conventions, cultural contexts, for interpretation and understanding.

210 [H] Readings in American Literature 3 Selected works by diverse voices from different eras of American literature; importance of conventions, cultural contexts, for interpretation and understanding.

216 [S,D] American Cultures 3 Same as Am St 216.

220 [H,D] Introduction to Multicultural Literature 3 Same as 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. World literature topical 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 [W,M] Writing About Literature 3 Prereq Engl 101; one college-level literature course or C/. Rhetorical and problem-solving skills in writing analysis of literary texts; critical approaches, theories of interpretation, use of research.

303 Revision Workshop - ESL 3 Prereq [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 after 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.

326 Applied Grammar for Teachers 3 Application of traditional English grammar for K-12 teachers, with focus on edited, American, African American, vernacular, and Spanish-influenced Englishes.

332 [M] Topics in Poetry 3 May be repeated for credit; cumulative maximum 6 hours. Forms, history, development of poetry; the 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 interpretation, and influence.

337 Digital Animation: Story, Narration, and Production 3 (2-2) 3D digital animation for creative and professional presentations using Maya software, art skills, storytelling and team problem-solving techniques.

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 the 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, Jeffen, Chopin, Crane, Dreiser.

380 American Literature to 1855 3 Prereq Engl 302 or substitutions approved by advisor. American writing from Settlement and Revolution through the times of Irving, Poe, Emerson, Hawthorne, Fuller, Thoreau, and Melville.

381 American Literature 1855-1916 3 Prereq Engl 302 or substitutions approved by advisor. American writing in an era of expansion, social and literary ferment. Whitman, Dickinson, Frost, the literature of realism and naturalism.

382 Modern American Literature 3 Prereq Engl 302 or substitution approved by advisor. Major literary movements and alternate voices in American poetry, fiction, and drama from WWI to the present.

383 Chaucer and Medieval Literature 3 Prereq Engl 302 or substitution approved by advisor. Chaucer’s Canterbury Tales in the context of Medieval culture and literary tradition.

384 English Literature of the 16th Century 3 Prereq Engl 302 or substitution approved by advisor. Non-dramatic literature of the English Renaissance, including More, Wyatt, Sidney, Spenser, Raleigh, and Shakespeare, in age of Humanism and Reformation.
438 Milton and English Literature of the 17th Century 3 Prereq Engl 302 or substitution approved by advisor. Nondramatic literature from the Metaphysicals and Johnson through Milton, against background of scientific revolution, religious controversy, and civil war.

386 English Literature of the Restoration and 18th Century 3 Prereq Engl 302 or substitution approved by advisor. Neo-classical literature from 1660 to the Romantic era. Dryden, Swift, Pope, Johnson, Gray, Goldsmith, Burns, and others.

387 English Romantic Literature 3 Prereq Engl 302 or substitution approved by advisor. Major works by Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, and others during Romantic literary revolt, especially 1798-1832.

388 Victorian Literature 3 Prereq Engl 302 or substitution approved by advisor. Major works by Tennyson, Dickens, Browning, Swinburne, Wilde, and others in a dynamic age of change in Britain, 1832-1900.

389 Modern British Literature 3 Prereq Engl 302 or substitution approved by advisor. Fiction, drama, poetry in age of conflict, artistic experimentation; Joyce, Woolf, Lawrence, Murdoch, Shaw, Pinter, Yeats, Eliot, Auden, and others.

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 [W,M] 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] Women Writers in the American West 3 Prereq completion of one Tier I and three Tier II courses. Diversity of writings by women in the trans-Missouri West from the 1890s to the present.

410 [T] Cultural Criticism and Theory 3 Same as CAC 405.

415 [T] Traditions of Comedy and Tragedy 3 Prereq completion of one Tier I and three Tier II courses. Study of tragedy and comedy in the Age of Shakespeare.

419 [T] The Twentieth Century Novel 3 Prereq completion of one Tier I and three Tier II courses. The novel in English in the literary and cultural context of the modern age.

443 Problems in English Linguistics: Syntax and Phonology 3 May be repeated for credit; cumulative maximum 6 hours. Technical introductions to generative analysis of sentences and to sound systems of human languages. Credit not granted for both Engl 443 and 543.

446 Form and Theory in Creative Writing: Prose and Poetry 3 Prereq two college-level creative writing courses. Formal elements of fiction, creative nonfiction, poetry for creative writing students; analysis of contemporary applications of traditional and experimental techniques.

451 Advanced Creative Writing: Prose 3 May be repeated for credit; cumulative maximum 6 hours. Prereq 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 views of reality and imagination of its diverse peoples.

471 [T] Cultural Politics Since World War II 3 Same as Am St 471.

472 [T] Ecological Issues and American Nature Writing 3 Same as Am St 472.

492 [M] Advanced Topics in Literature, Criticism, and Theory 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 Engls 496 and 499.

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 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.

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 persuasive 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 and 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 Engl 443; additional requirements. Credit not granted for both Engl 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 advisor. The theory and practice of designing and teaching courses in literature.

592 Language Arts: Methods of Composition 3 Methods of composition and relevant research in language arts.

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 praxis.

598 Teaching Apprenticeship 1 May be repeated for credit. S, F grading.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Department of Entomology


Insects and other related arthropods are the dominant consumers in all terrestrial ecosystems. There are more kinds of insects than all the other species of animals and plants combined. This almost unimaginable diversity provides the most fertile resource for scientific inquiry within a number of areas of biology, including behavior, ecology, genetics, morphology, physiology, and systematics. In a practical sense, insects compete at all levels with humans in the production, processing, and use of food and fiber resources and constitute a major threat to human health in much of the world. A detailed understanding of insect biology is a prerequisite to developing rational, effective, and sustainable control measures. Similarly, an understanding of the ecological ramifications of such control measures, particularly pesticide use, is a legal and ethical requirement.

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 in the areas of 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. The department is committed to developing an integrated biological control approach 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.

Schedule of Studies

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, CropS 305; IPM 201, 452, 462; Pl P 429; SoilS 201; Stat 310 or 412 and crops courses in CropS and Hort.

ENTOMOLOGY REQUIREMENTS (120 HOURS) ♦FYDA

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 2 or 3
Intercultural [I,G,K] (GER) 3
Physical Sciences 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

Biol 321, 352, or 353 3 or 4
Entom 343, 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
Biol 120, 320, or 332 4
Entom 439 or 440 [M] 4
Stat 212 [N] (GER) or 412 3 or 4
Freshman Year

**FIRST SEMESTER**
- Biol 103 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) (105 preferred) 4
- Engl 101 [W], 201 [W] or 301 [W] (GER) 3
- Math 140 [N], 171 [N], or 202 [N] (GER) 3

**SECOND SEMESTER**
- Biol 104 [B] (GER) 4
- Chem 102 [P] or 106 [P] (GER) (106 preferred) 4
- ComSt [C] or Eng 201 [W], or 301[WI] (GER) 3
- GenEd 110 [A] (GER) 3
- Intercultural [I,G,K] (GER) 3

Sophomore Year

**FIRST SEMESTER**
- Chem 340 4
- Entom 343 or 344 (or program options) 4 or 5
- GenEd 111 [A] (GER) 3
- Phys 101 [P] or 102 [P] (GER) 4

**SECOND SEMESTER**
- AgEc 201 [S] or Econ 102 [S] (GER) 3
- Chem 341 2
- MBioS 301 4
- Phys 102 [P] or 202 [P] (GER) 4

Junior Year

**FIRST SEMESTER**
- Biol 321, 322, or 324 4
- Biol 352 3
- Entom 343 and 344 (or program options) 4 or 5
- Program Options (MBioS 303, MBioS 302 recommended) 4
- Complete Writing Portfolio

**SECOND SEMESTER**
- Biol 372 4

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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 342</td>
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<tr>
<td>Entom 439, 440 [M], or 550</td>
<td>4</td>
</tr>
<tr>
<td>Stat 212 [N] (GER) or 412</td>
<td>3 or 4</td>
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**SECOND YEAR**

**FIRST SEMESTER**
- Arts & Humanities [H,G] (GER) 3
- Biol 405 3
- Biol 418, Entom 448, or Entom 449 3 or 4
- MBioS 446 3
- Program Options 3 or 4

**SECOND SEMESTER**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Biol 353, MBioS 340, or 311 4
- Program Options 5 or 6
- Tier III Course [T] (GER) 3

**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 this major must 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**
- Biol 103 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4

**Sophomore Year**
- Biol 104 [B] or 120 [B] (GER) 4
- Chem 102 [P] or 106 [P] (GER) 3
- GenEd 111 [A] (GER) 3
- Math 140 [N] or Stat 212 [N] (GER) 4
- Psych 105 [S] (GER) 3

**Sophomore Year**
- Biol 320 4
- CropS 305 3
- PL P 429 3
- Complete Writing Portfolio

**JUNIOR YEAR**
- Biol 332 4
- Biol 372 [M] 4
- Entom 343, 344 4
- IPM 452 2
- Elective/Option Course 3

**Senior Year**
- One from: Entom 348, 441, 448 or 450 1-4
- Tier III Course [T] (GER) 3
- Elective/Option Courses 6

**Second Semester**
- IPM 462 [M] 3
- Elective/Option Courses 12-15

**WEEF SCIENCE REQUIREMENTS**

**JUNIOR YEAR**
- Arts & Humanities [H,G] (GER) 3
- Biol 320 4
- CropS302 3
- CropS 305 3
- PL P 429 3
- Complete Writing Portfolio

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Department of Entomology

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
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<tr>
<td>Biol 372 [M]</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Entom 340; or 343, 344</td>
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<td>3 or 4</td>
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<td>IPM 452</td>
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<td>Year 3, Summer Session: IPM 399</td>
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**Senior Year**

**First Semester**

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**Second Semester**

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<td>SoilS 301</td>
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<td>Elective/Option Courses</td>
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**TREE FRUIT INTEGRATED PEST MANAGEMENT REQUIREMENTS (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 fundamentals of agricultural science, tree fruit production, and orchard management (including pest management) through courses and orchard practicum experiences. Wenatchee Valley College, located in the heart of Washington's tree fruit industry, has teaching orchards and well-equipped facilities. The second half of the program is taken at Washington State University where courses provide students with an advanced knowledge of plant science, entomology and pest management, and fulfill remaining GEIs necessary for the B.S. degree.

**Freshman Year (Wenatchee Valley College)**

**Fall Quarter**

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<td>Agri 252</td>
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<td>Agri 261</td>
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<td>Chem 110</td>
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**Winter Quarter**

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<tr>
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<tr>
<td>Agri 262</td>
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<tr>
<td>Biol 122</td>
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<td>Engl 101</td>
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**Spring Quarter**

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<tr>
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<td>Agri 263</td>
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<td>Biol 123</td>
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<td>Chem 111</td>
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**Summer Quarter**

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<tr>
<td>Agri 296</td>
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**Sophomore Year (Wenatchee Valley College)**

**Fall Quarter**

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<td>Agri 264</td>
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<tr>
<td>Agri 296</td>
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<td>Math 201</td>
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**Spring Quarter**

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<td>Agri 265</td>
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<td>Ecom 202</td>
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<td>Comm 220</td>
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**Summer Quarter**

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<tr>
<td>Agri 296</td>
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**Junior Year (Washington State University)**

**Fall Semester**

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<td>Biol 320</td>
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<td>Chem 240</td>
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<td>CropS 305</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>IPM 452</td>
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**Spring Semester**

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<tbody>
<tr>
<td>Biol 356</td>
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<td>Biol 372 [M]</td>
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**Senior Year (Washington State University)**

**Fall Semester**

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<td>Biol 325</td>
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<td>CropS 360 [I] (GER)</td>
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**Second Semester**

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<tr>
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<tr>
<td>Hort 416</td>
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<td>Hort 421 [M]</td>
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<td>IPM 462 [M]</td>
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<td>Soil 441</td>
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</table>

**Description of Courses**

**Entomology**

101 [B] *Insects and People: A Perspective* 3 The world's most abundant animals and their extensive effects on people yesterday and today.

150 *Insects, Science, & World Cultures* 3 (2-3) Impact of insects and agriculture on human affairs with emphasis on cultures and countries around the world; especially useful for non-science majors and K-8 pre-service teachers.


343 [M] *General Entomology* 3 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/. 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.


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 Biol 150. Development of biological ideas and knowledge from antiquity to present with emphasis on major advances achieved through invertebrate models. Cooperative course taught by WSU, open to UI students (Ent 401).

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 crop cultivars 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 warm-blooded, 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. Credit not granted for both Entom 472 and 572. 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 Biol 511.

526 Population Analysis 1 Same as NATRS 526.

529 Principles of Population Dynamics 1 Same as NATRS 529.

539 Taxonomic Entomology 2 or 4 (2-6) Graduate-level counterpart of Entom 439; additional requirements. Credit not granted for both Entom 439 and 539.

540 Taxonomy of Immature Insects 2 or 4 (2-6) Graduate-level counterpart of Entom 440; additional requirements. Credit not granted for both Entom 440 and 540.

541 Insect Ecology 3 (2-3) Prereq Entom 343; 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 Biol 352, Chem 240; Entom 340 or 343 or Biol 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/JS51).

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.

567 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.

568 Systems in Integrated Crop Management 3 (2-3) Graduate-level counterpart of Entom 472; additional requirements. Credit not granted for both Entom 472 and 572. Cooperative course taught by UI (Ent 472), open to WSU students.

583 Physiological Interactions in Predator-Prey Relationships 1 Prereq Biol 102, Rec general ecology. Intricate physiological and behavioral adaptations that have evolved in predator-prey relationships.

590 Special Topics in Entomology V 1-4 May be repeated for credit; cumulative maximum 10 hours. Graduate-level counterpart of Entom 490; additional requirements. Credit not granted for both Entom 490 and 590.

593 Special Topics in Entomology 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). S, F grading.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Description of Courses

Integrated Pest Management

IPM

201 Introduction to Pest Management in a Quality Environment 2 Pest management to maximize plant protection and safeguard the quality of the environment.

399 Pest Management Internship V 1-4 Supervised individual practicum with IPM-oriented businesses, organizations, and governmental agencies; professionally related field interaction. S, F grading.

452 Pesticides and the Environment 2 Rec 12 hours Biol. Immediate and prolonged effects of pesticides on 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.
Program in Environmental Science and Regional Planning

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 flexibly designed in a unique, multi-optional interdisciplinary context. Environmental science majors can specialize in agricultural ecology, biological science, human or cultural ecology, environmental education, environmental quality control, hazardous waste management, natural resource management, physical science, systems and environmental land-use planning. Regional planning majors can specialize in a variety of areas including land-use planning, ecological planning, geographic assessment and planning, and environmental policy and planning. Environmental science majors specializing in environmental education may work toward senior high school teaching certificates with endorsements for the major and minors in physical and biological science.

The program is closely coordinated with the Environmental Research Center and other university research units. It is administratively supported by the Colleges of 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.)

Schedule of Studies

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 advisor to provide an individualized area of specialization. The program has identified nine optional areas of specialization: agricultural ecology, biological science, 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 advisor, 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.

ENVIRONMENTAL SCIENCE REQUIREMENTS (123 HOURS)

Freshman Year

<table>
<thead>
<tr>
<th>Course</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>ES/RP 101 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

Second 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>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
<td>4</td>
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</tbody>
</table>

Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 240</td>
<td>4</td>
</tr>
<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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</tbody>
</table>

Junior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 104 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 402 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Phys 102 [P] or 202 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Stat 212 [N] (GER) or 412</td>
<td>3 or 4</td>
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Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 372</td>
<td>4</td>
</tr>
<tr>
<td>ES/RP 310</td>
<td>4</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Option Courses</td>
<td>9</td>
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</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 404 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Option Courses</td>
<td>9</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES/RP 444</td>
<td>4</td>
</tr>
<tr>
<td>ES/RP 491</td>
<td>1</td>
</tr>
<tr>
<td>Option Courses</td>
<td>9</td>
</tr>
</tbody>
</table>

Notes:

1. Math 107 or concurrent enrollment is the prerequisite for Chem 105 and Math 140/171.
2. Recommend combining the American Diversity GER [D] with this requirement.
3. The remaining GERs should include paired introductory and 300-400-level courses in economics, agricultural economics, and either sociology or cultural anthropology. Consult advisor.

Minor 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 advisor.

Preparation for Graduate Study

Before applying for admission to the graduate programs, a student should have completed an undergraduate curriculum that included examination of a physical, biological, or social system in sufficient depth to serve as background for advanced investigation of one or more of these systems in an ecological context and a minimum 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 advisor. 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 Atmosphere 3 Same as C E 174.

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

301 Forest and Range Plant Resources 3 (2-3) Same as NATRS 301.

310 Modeling the Environment 4 (3-3) Construction and testing of computer simulation models of environmental systems. Cooperative course taught by WSU, open to UI students. (EnvS 210).

311 Natural Resource Economics 3 Same as Ag Ec 311.

325 Economic Analysis of Environmental Policies 3 Same as Ag Ec 325.


375 Aspects of Sustainable Development 3 Same as Econ 375.

385 GIS Primer 3 (2-2) Introduction to basic concepts and applications of geographic information systems (GIS), lab exercises on PC-based GIS packages. Cooperative course taught by UI (Geog 385), open to WSU students.

402 Human Health and the Environment 3 Prereq Biol 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 environmental media or anthropogenic changes in ecosystems. Credit not granted for both ES/RP 402 and 502.

403 Environmental Geology 3 Same as Geol 403.


406 Introduction to Radiological Science 2 Prereq one course each in biology, calculus, chemistry, and physics. Fundamentals of atomic physics; interactions of radiation with matter; radiation dosimetry and biology; radiocceology 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 Biol 411.

412 [M] Natural Resource Policy and Administration 3 (2-2) Same as NATRS 438.

414 Environmental Biophysics 2 Same as SoIS 414. Credit not granted for both ES/RP 414 and 514.

415 Environmental Biophysics Lab 1 0 (3-3) Same as SoIS 415.

416 Radiation Biology 4 (3-3) Prereq introductory radiological physics, or one course each in biology and radiological physics; Rec ES/RP 406. Effects of ionizing radiation at the molecular, cellular, organ and organism level. Credit not granted for both ES/RP 416 and 516.

418 Human Issues in International Development 3 Same as Anth 418.


420 Field and Laboratory Techniques in Environmental Science 2 May be repeated for credit; 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).


452 Environmental Microbiology 3 Same as MBiOs 452. Credit not granted for both ES/RP 452 and 552.

466 Environmental Psychology 3 Same as Psych 466.

470 Airphotos and Geomorphology 3 (2-3) Same as Geol 474.

471 Meteorology 3 Same as C E 471. Credit not granted for both ES/RP 471 and 571.

472 Economic Development and Underdevelopment 3 Same as Econ 472.

473 Engineering Risk Assessment for Hazardous Waste Evaluations 3 Prereq senior standing; Rec stat course. Quantitative and qualitative approaches to assessing risks to public health and environment from chemical contaminants; toxicology, exposure assessment, risk characterization, and environmental modeling; credital reviews of specific toxics and actual waste site studies. Cooperative courses taught by UI (Chem 480), open to WSU students.

480 Advanced Resource Economics 3 Same as Ag Ec 480.

481 Economics of Environmental Issues 3 Same as Econ 481.

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


490 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

491 Senior Seminar 1 Prereq senior in ES/RP.

492 Special Topics 1-3 May be repeated for credit; cumulative maximum 3 hours.
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 xenobiotics with natural systems.

534 Industrial Ecology: Theory and Practice 3 Complex relationships and interactions among industrial activities, the environment, and society and the need for a sustainable system.

535 Resolving Environmental Conflicts 4 (3-3) Same as ES/RP 435; Graduate-level counterpart of ES/RP 435; additional requirements. Credit not granted for both ES/RP 435 and 535.

544 Environmental Assessment 4 Graduate-level counterpart of ES/RP 444; additional requirements. Credit not granted for both ES/RP 444 and 544. Cooperative course taught by WSU, open to UI students (Geog 544).

545 Hazardous Waste Management 3 Graduate-level counterpart of ES/RP 445; additional requirements. Credit not granted for both ES/RP 445 and 545. Cooperative course taught by WSU, open to UI students. (Envrs 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. (Envrs 550)

551 Energy Production and the Environment 2 Graduate-level counterpart of ES/RP 451; additional requirements. Credit not granted for both ES/RP 451 and 551.

552 Environmental Microbiology 3 Same as MBioS 552. Credit not granted for both ES/RP 452 and 552.

555 Environmental Planning 3 State, local and federal approaches to environmental planning and their interactions in private and public land use and development decisions.

556 Insecticides: Toxicology and Mode of Action 1 Same as Entom 556.

557 Herbicides: Toxicology and Mode of Action 1 Same as Entom 557.

558 Pesticide Topics 1 Same as Entom 558.

560 Watershed Management 3 Same as NATRS 560.

567 Advanced Applications in GIS 4 (1-6) GIS concepts using ARC/INFO geographic information systems.

571 Meteorology 3 Same as C E 571. Credit not granted for both ES/RP 471 and 571.

573 Engineering Risk Assessment for Hazardous Waste Evaluations 3 Graduate-level counterpart of ES/RP 473; additional requirements. Credit not granted for both ES/RP 473 and 573. Cooperative course taught by UI (ChE 580), open to WSU students.

575 Geographic Information Systems 3 Prereq Geol 385. Computerized management of data organized on regional geographic bases; preparation overlay, coding, and manipulation of data for regional planners and land managers. Cooperative course taught by UI (GeoGe 475S), 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 V 1-4 May be repeated for credit; cumulative maximum 4 hours.

593 Seminar in Environmental Science and Regional Planning 1 May be repeated for credit, cumulative maximum 8 hours.

594 Environmental and Natural Resources Issues and Ethics 2 or 3 Same as NATRS 594.

595 Graduate Internship V 2-5 By interview only. Practical work experience in appropriate agencies for graduate career students. 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.
sors, J. Dollhausen, 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 does not offer a certification program in art education.

**Schedule of Studies**

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 FINE ARTS (BFA) REQUIREMENTS (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**

- Biological Sciences [B] (GER) 4
- Engl 101 [W] (GER) 3
- F A 102 3
- F A 110 3
- GenEd 110 [A] (GER) 3

**Second Semester**

- Arts & Humanities [H,G] (GER) 3
- Communications Proficiency [C,W] (GER) 3
- F A 103 3
- F A 111 3
- GenEd 111 [A] (GER) 3

**Sophomore Year**

**First Semester**

- 300-level F A Elective 3
- F A 201 3
- F A 320 3
- Intercultural [I,G,K] (GER) 3
- Physical Sciences [P] (GER) 4

**Second Semester**

- 300-level F A Elective 3
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- F A 202 3
- F A 350 3
- Math Proficiency [N] (GER) 3

**Junior Year**

**First Semester**

- 300-400-level F A Elective 3
- F A 303 3
- F A 312 3
- Science Elective [B, P, Q] (GER) 4
- Social Sciences [S,K] (GER) 3
- Complete Writing Portfolio 3

**Second Semester**

- 300-400-level F A Electives 6
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- F A 304 3

**Senior Year**

**First Semester**

- 300-400-level F A Electives 6
- F A [M] 3
- F A 498 2
- Tier III Course [T] (GER) 3

**Second Semester**

- 300-400-level F A Electives 6
- F A [M] 3
- F A 493 2
- Elective 3

**BACHELOR OF ARTS IN FINE ARTS REQUIREMENTS (120 HOURS)**

For the degree Bachelor of Arts in Fine Arts a total of at least 48 hours of fine arts is required; 30 of these hours must be in 300-400-level courses. Students may declare 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**

- Biological Sciences [B] (GER) 4
- Engl 101 [W] (GER) 3
- F A 102 3
- F A 110 3
- GenEd 110 [A] (GER) 3

**Second Semester**

- Arts & Humanities [H,G] (GER) 3
- Communications Proficiency [C,W] (GER) 3
- F A 103 3
- F A 111 3
- GenEd 111 [A] (GER) 3

**Sophomore Year**

**First Semester**

- Hours
- F A 201 3
- F A 320 3
- Intercultural [I,G,K] (GER) 3
- Physical Sciences [P] (GER) 4

**Second Semester**

- Hours
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- F A 202 3
- F A 350 3
- Elective 3

**Junior Year**

**First Semester**

- Hours
- F A 303 3
- F A 340 or 351 3
- Science Elective [B, P, Q] (GER) 4
- Social Sciences [S,K] (GER) 3
- Elective 3

**Second Semester**

- Hours
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- F A 304 3
- Elective 3

**Senior Year**

**First Semester**

- Hours
- 300-400-level F A Elective 3
- 300-400-level Electives 6
- F A [M] 3
- Tier III Course [T] (GER) 3

**Second Semester**

- Hours
- 300-400-level F A Elective 3
- 300-400-level Electives 6
- F A [M] 3
- Communications Proficiency [C,W] (GER) 3

**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. 9 hours from F A 102, 103, 110, 111, 320, 350;
2. 3 hours from F A 201 or 202;
3. 6 additional hours in major emphasis;
4. 2.0 cumulative g.p.a. in F A courses;
5. slide portfolio and exhibit presentation of original art work.

Bachelor of Arts in Fine Arts certification requirements:
1. 9 hours from F A 102, 103, 110, 111, 320, 350;
2. 3 hours from F A 201 or 202;
3. 2.0 cumulative g.p.a. in F A courses.

Communications Proficiency [C,W] (GER) 3
F A 103 3
F A 111 3
GenEd 111 [A] (GER) 3

Department of Fine Arts
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
F A
101 [H] Introduction to Art 3 For nonmajors. Appreciation of various visual art forms; emphasis on contemporary period.
201 [H] World Art History 3 Historical survey of art and architecture from prehistory through 1450.
202 [H] World Art History 3 Historical survey of art and architecture from 1450 to the present.
301 [G] Arts of Native North America 3 Prereq GenEd 110, 111. Diversity of visual forms, traditional and contemporary, within changing historical and cultural contexts.
302 [G] The Arts of Asia 3 Prereq GenEd 110, 111. Art and architecture of India, China, and Japan, within their historical, religious, and cultural contexts.
303 [H] Modern Art-19th Century 3 Prereq F A 201, 202. Modern art in the early modern period from around the globe.
308 [H,M] Women Artists I, Middle Ages-1900 3 Survey of women artists from Middle Ages to the beginnings of modern art.
310 [H,M] Women Artists II, Twentieth Century 3 Survey of women artists from the beginnings of modern art through the twentieth century.

403 [M] Modern Theories of Art 3 May be repeated for credit; cumulative maximum 6 hours. Selected topics in 19th and 20th century theories of art.
404 [M] Advanced Non-western Art History 3 May be repeated for credit; cumulative maximum 6 hours. Prereq F A 201, 202. Different topics related to the arts in Africa the Americas, Oceania, and Asia.
405 [M] Contemporary Art: Theory and Practice 3 Contemporary theories of art and how those theories are developed.
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.

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
F A
102 Art I 3 (0-6) Introduction to studio practice and composition of form in two-dimensional space.
103 Art II 3 (0-6) Introduction to studio practice and composition of form in three-dimensional space.

Drawing
F A
110 Drawing 3 (0-6) Composition in pictorial space, visualization of ideas, drawing from life.
111 Figure Drawing 3 (0-6) Prereq F A 102, 103, 110.
312 Advanced Drawing 3 (0-6) May be repeated for credit. Prereq F A 110 or 111. Advanced projects using drawing media and process.
313 Figure Drawing 3 (0-6) May be repeated for credit. Prereq F A 111.
510 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.
511 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.
512 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Painting
F A
320 Beginning Painting 3 (0-6) Prereq F A 102, 103, 110. Basic painting; introduction to composition and color structure.
321 Intermediate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 320.
322 Transparent Watercolor 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 103, 110.
423 Advanced Painting 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 321, major in F A.
520 Graduate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.
521 Graduate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.
522 Graduate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Electronic Imaging
F A
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.
332 Introduction to Electronic Imaging 3 (0-6) Prereq F A 102, 103, 110, 331. Principles and processes of electronic image processing, image/text design and designing for the internet.
337 Digital Animation: Story, Narration, and Production 3 (2-2) Same as Engl 337.
433 Digital Print Design 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.
434 Multimedia and Web Design 3 Emphasis on creating multimedia and worldwide web projects; may include dynamic HTML, CGI scripting, digital video, animation and multimedia authoring.

500 Electronic Imaging Internship V 1-12 May be repeated for credit. Prereq 6 credits in F A 433 and 434, major in F A. Experience in work-related electronic imaging environments for practical application and experience. S, F grading.

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.

531 Graduate Electronic Imaging 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Advanced research in projects relating to electronic tools.

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
F A
340 Ceramics 3 (0-6) Prereq F A 102, 103, 110. Handbuilding processes; the potter's wheel; glazing; firing.
341 Intermediate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 340.
442 Advanced Ceramics 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 341.
540 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

541 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

542 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Sculpture
F A
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 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 351.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>550</td>
<td>Graduate Sculpture</td>
<td>3 (0-6)</td>
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<tr>
<td>551</td>
<td>Graduate Sculpture</td>
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<td>May be repeated for credit; cumulative maximum 9 hours.</td>
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<tr>
<td>552</td>
<td>Graduate Sculpture</td>
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**Printmaking**

<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>F A</td>
<td>Introduction to Printmaking</td>
<td>3 (0-6)</td>
<td>May be repeated for credit; cumulative maximum 9 hours. Prereq F A 102, 110. Introduction to the fundamentals of printmaking, incorporating drawing, painting and collage. Fall semester, Lithography and Monotype; Spring semester, Screenprinting.</td>
</tr>
<tr>
<td>471</td>
<td>Digital and Photo Processes for Printmaking</td>
<td>V 3 (0-6) or 6 (0-12)</td>
<td>May be repeated for credit. Six credits only with permission of instructor. Prereq F A 110. Survey of digital and photo processes for printmaking.</td>
</tr>
<tr>
<td>570</td>
<td>Graduate Printmaking</td>
<td>3 (0-6)</td>
<td>May be repeated for credit; cumulative maximum 9 hours.</td>
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<tr>
<td>571</td>
<td>Graduate Printmaking</td>
<td>3 (0-6)</td>
<td>May be repeated for credit; cumulative maximum 9 hours.</td>
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<tr>
<td>572</td>
<td>Graduate Printmaking</td>
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**Photography**

<table>
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<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>F A</td>
<td>Introduction to Photography</td>
<td>3</td>
<td>An experience with cameras and associate materials and techniques; photography in a historical and aesthetic context.</td>
</tr>
<tr>
<td>381</td>
<td>Beginning Photography</td>
<td>3 (0-6)</td>
<td>Prereq F A 102, 103, 380. Camera and black/white film used in conjunction with studio and darkroom techniques; composition and aesthetic concepts introduced.</td>
</tr>
<tr>
<td>382</td>
<td>Intermediate Photography</td>
<td>3 (0-6)</td>
<td>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.</td>
</tr>
<tr>
<td>385</td>
<td>Digital Imaging/Color Photography</td>
<td>3 (0-6)</td>
<td>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.</td>
</tr>
<tr>
<td>483</td>
<td>Advanced Photography</td>
<td>V 3 (0-6) or 6 (0-12)</td>
<td>May be repeated for credit. Six credits only with permission of instructor. Prereq F A 382, major in F A. Advanced black/white darkroom and studio; research of historic and contemporary trends; discussion of personal direction; portfolio.</td>
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<tr>
<td>580</td>
<td>Graduate Photography</td>
<td>3 (0-6)</td>
<td>May be repeated for credit; cumulative maximum 9 hours.</td>
</tr>
<tr>
<td>581</td>
<td>Graduate Photography</td>
<td>3 (0-6)</td>
<td>May be repeated for credit; cumulative maximum 9 hours.</td>
</tr>
<tr>
<td>582</td>
<td>Graduate Photography</td>
<td>3 (0-6)</td>
<td>May be repeated for credit; cumulative maximum 9 hours.</td>
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**Art Education**

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<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>F A</td>
<td>Elementary School Art Education</td>
<td>2 (1-2)</td>
<td>Theory and methods for the study and making of art including practice using art media active expression.</td>
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</tbody>
</table>

**Gallery Procedures**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>F A</td>
<td>Gallery Procedures with Museum of Art</td>
<td>3 (0-6) or 6 (0-12)</td>
<td>May be repeated credit; cumulative maximum 9 hours. By interview only. Introduction to art museums and galleries, including practicum in exhibition preparation, installation art handling, collections.</td>
</tr>
<tr>
<td>385</td>
<td>Digital Imaging/Color Photography</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>386</td>
<td>Special Topics—Drawing</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>387</td>
<td>Special Topics—Painting</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>388</td>
<td>Special Topics—Electronic Imaging</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>389</td>
<td>Special Topics—Ceramics</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>390</td>
<td>Special Topics—Sculpture</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>391</td>
<td>Special Topics—Printmaking</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>392</td>
<td>Special Topics—Black and White Photography</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>393</td>
<td>Special Topics—Color Photography</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>394</td>
<td>Special Topics—Color Photography</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>395</td>
<td>Special Topics—Color Photography</td>
<td>V 1-6</td>
<td>May be repeated for credit.</td>
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**Special Topics, Seminars, and Thesis**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>F A</td>
<td>Contemorary Issues Seminar</td>
<td>2</td>
<td>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.</td>
</tr>
<tr>
<td>396</td>
<td>Special Problems</td>
<td>V 1-4</td>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>397</td>
<td>Graduate Seminar</td>
<td>V 1-2</td>
<td>May be repeated for credit; cumulative maximum 6 hours. Topics in contemporary issues, theory, and criticism.</td>
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<tr>
<td>398</td>
<td>Special Projects or Independent Study</td>
<td>Variable credit.</td>
<td>S, F grading.</td>
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<tr>
<td>399</td>
<td>Master's Research, Thesis, and/or Examination</td>
<td>Variable credit.</td>
<td>S, F grading.</td>
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**Study Abroad**

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<th>Prerequisites</th>
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<tr>
<td>F A</td>
<td>Topics—Study Abroad</td>
<td>3</td>
<td>May be repeated for credit; cumulative maximum 6 hours.</td>
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<tr>
<td>300</td>
<td>Topics—Study Abroad</td>
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<td>Topics—Study Abroad</td>
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<td>314</td>
<td>Topics—Study Abroad</td>
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<td>315</td>
<td>Topics—Study Abroad</td>
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<tr>
<td>316</td>
<td>Topics—Study Abroad</td>
<td>3</td>
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</table>

**Department of Food Science and Human Nutrition**

**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 is approved by The American Dietetics Association (ADA) Commission on Accreditation for Dietetic Education. 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 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 and/or healthcare team in hospitals; schools, colleges, and university food service; restaurants; and in government and private agencies.

The Coordinated Program in 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 American Dietetic Association Commission on Accreditation of Dietetic Education. This provides the student with eligibility for membership in the ADA 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. Students beginning post-secondary enrollment must complete one American Dietetic Association Commission on Dietetic Education (CPD) course in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

Other Opportunities

The FSHN department offers minors in food science, foods and nutrition, and foodservice management. In addition to undergraduate studies, the department offers courses of study leading to the degrees of Master of Science in Human Nutrition (thesis and non-thesis option), Doctor of Philosophy (Food Science) and Doctor of Philosophy (Nutrition).

Schedule of Studies

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 REQUIREMENTS (120 HOURS) ▶FYDA

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.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<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>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
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<td></td>
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<tr>
<td>Math 101 [W] (GER)</td>
<td>3</td>
<td></td>
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<tr>
<td>Math 102 [W] (GER)</td>
<td>3</td>
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<tr>
<td>Biol 116 [B] (GER)</td>
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<td>FSHN 170</td>
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<td>FSHN 111 [A] (GER)</td>
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<table>
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<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>Food Production Course</td>
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<tr>
<td>Phys 101 [P] (GER)</td>
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<tr>
<td>FSHN 200</td>
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<tr>
<td>MBlso 302</td>
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<td>MBlso 303</td>
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<tr>
<td>Ag Ec 201 [S] (GER)</td>
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<tr>
<td>Chem 240</td>
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<td></td>
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<tr>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
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<tr>
<td>Food Production Course</td>
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<tr>
<td>Phys 101 [P] (GER)</td>
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<td>FSHN 314 or FSHN 233</td>
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<tr>
<td>FSHN 200</td>
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<tr>
<td>FSHN 417</td>
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<tr>
<td>FSHN Commodity Course</td>
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<tr>
<td>Stat 212 [N] (GER)</td>
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<table>
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<tr>
<th>Second Semester</th>
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<tr>
<td>Arts and Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<td>FSHN 422 or 425</td>
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<td>FSHN Commodity Course</td>
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<tr>
<td>FSHN 433</td>
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<td>FSHN 434</td>
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<td>Intercultural Studies [I,G,K] (GER)</td>
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<td>Engl 402 [W] (GER)</td>
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<tr>
<td>FSHN 460</td>
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<tr>
<td>FSHN 461 [M]</td>
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<td>FSHN Commodity Course</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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<tr>
<td>FSHN 422 or 425</td>
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<tr>
<td>FSHN 462</td>
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<tr>
<td>FSHN 470</td>
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<tr>
<td>Elective</td>
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Suggested electives for areas of interest:

Business/Marketing: Acctg 350, 360, B Law 210, Cpt S 405, Mgt 301, Psych 306.
Commodities: Cereal: CropS 101, 201, 303; Dairy: A S 101; Fruit/vegetable: Hort 201, 311, 313, 320, 321, 418, 420; Meat: A S 101, 360; Wine (enology): Hort 313, 418, MBlso 450.
Internships, 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.

HUMAN NUTRITION GENERAL DIETETICS REQUIREMENTS (120 HOURS) ▶FYDA

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<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>FSHN 201</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Second Semester</td>
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<td>MBlso 101 [B] (GER)</td>
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<td>Second Semester</td>
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<td>H A 359</td>
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<tr>
<td>Electives</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<td>FSHN 331</td>
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<td>H D 204 or 300-level H D course</td>
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<td>Electives</td>
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<tr>
<td>FSHN 410</td>
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<td>FSHN 420</td>
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<tr>
<td>FSHN 436</td>
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## Coordinated Program in Dietetics (CPD) Requirements (133 Hours)

Application for admission to the CPD is ordinarily made during the fall semester of the junior year. Application deadline is February 1. Transfer students should consult the director for advice on applying and planning.

### freshman year

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<tr>
<th>First Semester</th>
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<td>Chem 101 [P] or 105 [P] (GER)</td>
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### Second Semester

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<td>MBioS 101 [B] (GER)</td>
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<td>Soc 101 [S,D] (GER)</td>
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### sophomore year

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### Third Semester

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<td>MBioS 303</td>
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### Junior Year

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<td>FSHN 420</td>
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<td>FSHN 436</td>
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### Complete Writing Portfolio

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<td>FSHN 430</td>
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<td>FSHN 435</td>
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<td>FSHN 437</td>
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<td>FSHN 480</td>
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### Senior Year

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<td>FSHN 476</td>
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### Second Semester

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<td>FSHN 439</td>
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<td>FSHN 440</td>
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<tr>
<td>FSHN 478</td>
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</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 99164-6376, phone (509) 335-3843, or email FSHN@wsu.edu.

### 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: 17 semester hours, 8 of which must in 300-400-level courses. FSHN 120, 130, 380, 480, and H A 358.

#### Foods and Nutrition: 20 or 21 semester hours, 8 of which must be in 300-400-level courses. FSNH 120, 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 advisors 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 advisers 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 are encouraged to talk with the advisor no later than the end of the junior year so a selection of courses can be planned which schedules appropriate prerequisites to graduate courses and an introduction to research projects.
403 Food Security  Prereq junior standing. Examination of people's access to and use of food from multidisciplinary perspectives, emphasizing critical thinking and problem solving.

404 Food Product Development  Prereq senior standing; MBioS 303. Development of food products from concept to marketplace. Cooperative course taught by WSU, open to UI students (FST 407).

406 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 experience; development of application process; participation in community affairs; public policy and research in dietetics.

411 Global Nutrition 2 History of food and hunger and the global nature of our food systems. Cooperative course taught by UI (FCS 411), open to WSU students.

416 Food Microbiology 2 Prereq introductory microbiology. Purpose for enumeration, detection and identification of microorganisms in food products; physical, chemical and environmental factors influencing growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms in food and their control. Cooperative course taught by UI (FST and MMBB 416), open to WSU students.

417 Food Microbiology Laboratory 2 (0-6) Prereq c//. In FSHN 416. Methods of enumeration, detection and identification of spoilage and pathogenic microorganisms in foods. Cooperative course taught by UI (FST and MMBB 417), open to WSU students.


426 [M] Community Nutrition 3 Prereq FSHN 330, 331; Rec FSHN 436. Needs assessment, planning, and evaluation in community nutrition programs. Cooperative course taught jointly by WSU and UI (FCS 473).

427 Nutritional Assessment 1 (0-3) Rec FSHN 233, senior standing. Basic skills and concepts for determining nutritional status of adult and pediatric patients using dietary intake, dietary standards, anthropometric and biochemical measures.

429 (301) Dairy Products 4 (3-3) Prereq MBioS 101 or 301; org chem; biochemistry. Dairy Chemistry, Microbiology, sanitation, product development and processing from cow to consumer. Credit not granted for both FSHN 429 and 529. Cooperative course taught by WSU, open to UI students (FST 429/529).

430 Human Nutrition, Intermediary Metabolism 3 Prereq Biol 251, FSHN 330, MBioS 303. 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, planning, implementing, and evaluating nutrition education programs and materials.

437 Medical Nutrition Therapy Laboratory 1 (0-3) Prereq c// in FSHN 435. Nutritional care planning; modified diets; nutritional assessment and diet analysis in clinical care settings.

438 Readings in Food and Nutrition 2 Reports, discussions and reviews of recent scientific literature and developments in foods and food systems management. Credit not granted for both FSHN 438 and 538.

439 Current Topics in Nutrition 2 Prereq FSHN 430. Analysis of scientific, popular and legislative articles pertaining to topics of current interest in nutrition. Credit not granted for both FSHN 439 and 539.

440 Advanced Medical Nutrition Therapy 3 By interview only. Advanced nutrition principles applied to pathological conditions in humans and principles of participation in delivery of nutritional care.

444 [T] Applied Nutrition in Health Science 3 Prereq biology, chemistry, sociology/psychology; completion of one Tier I and three Tier II courses. Application of current nutrition topics to community and clinical settings, integrating social and dietary analysis in clinical care settings.

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 properties, reactions, and interactions of chemical components of foods. Cooperative course taught by WSU, open to UI students (FST 461).

462 Food Analysis 4 (2-6) Prereq microbiology, organic chemistry. Introductory food analysis; methods common to many food commodities. Cooperative course taught by WSU, open to UI students (FST 462).

464 Food Toxicology 3 Prereq MMBB 300 or 380. General Principles of Toxicologic evaluation of chemicals which intentionally or unintentionally enter the food chain; toxicology of food additives, colors, preservatives, drugs, pesticides and natural toxins in foods and risk characterization. Credit not granted for both FSHN 464 and 564. Cooperative course taught by UI (FST 464/564), open to WSU students.

465 Wine Microbiology and Processing 3 Prereq MBioS 302 and 303. Technical principles related to the processing and fermentation of wines with an emphasis on microbiology. Credit not granted for both FSHN 465 and 565. Cooperative course taught by WSU, open to UI students (FST 465/565).

470 Advanced Food Technology 3 Prereq FSHN 416, 433 or c/. Physical principles of food preservation and recent advances in food technology. Credit not granted for both FSHN 470 and 570. Cooperative course taught by WSU, open to UI students (FST 470).

475 Current Topics in Food Systems Management 2 Prereq by interview only. Analysis of scientific popular and legislative articles pertaining to topics of current interest in food systems.

476 Advanced Food Systems Management 3 (2-3) Prereq by interview only. Advanced principles of food systems related to food service management, community nutrition resources and public health nutrition; includes clinical conferencing related to FSHN 477.

477 Supervised Practice in Dietetics I 8 (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 FCS 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 advisor and industrial supervisor. 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 1-3 May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of FSHN 401; additional requirements. Credit not granted for both FSHN 401 and 501.

504 Advanced Human Nutrition 4 Prereq graduate standing. Scientific basis of human nutrient requirements, dietary allowances and assessment techniques. Cooperative course taught by WSU, open to UI students (FCS 514).

508 Seminar Written 2 May be repeated for credit. Planning, writing, reporting, reviewing and evaluating current food-related research.

509 Seminar Oral 1 May be repeated for credit. Development of skills and communication tools and techniques for oral presentations of current food science and human nutrition research.

510 Advanced Food Chemistry 3 Rec biochemistry, food chemistry. Chemical, physical, and toxicological properties of water, vitamins, pigments, synthetic colors, minerals, miscellaneous food additives, and natural toxins. Cooperative course taught by WSU, open to UI students (FST 510).
511 Food Carbohydrates, and Lipids 3 Rec biochemistry, food chemistry. Occurrence, structure, chemical and physical properties; 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 FSHN 426 or 436; statistics course. The application of behavioral theories and qualitative/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.

526 Advanced Community Nutrition 3 Prereq 300-400-level nutrition course. Components of community nutrition programs-needs assessment, planning, intervention, evaluation; application of concepts to case studies. Cooperative course taught by WSU, open to UI students (FCS 526).

529 Dairy Products 4 (3-3) Graduate-level counterpart of FSHN 429; additional requirements. Credit not granted for both FSHN 429 and 529. Cooperative course taught by WSU, open to UI students (FST 529).

530 Prenatal, Infant and Child Nutrition 2 Prereq graduate standing. Nutrition of the mother and fetus during pregnancy and of the child from infancy through childhood.

531 Nutrition and Aging 2 Rec 300-400-level nutrition course; by interview only. Assessment, evaluation, and treatment of nutritional problems of the aged.

533 Pathophysiology of Human Nutrition 3 Prereq FSHN 435. Protein, fat, carbohydrate and other nutrient pathophysiology in the development and treatment of major human diseases.

538 Readings in Foods and Nutrition 2 Graduate-level counterpart of FSHN 438; additional requirements. Credit not granted for both FSHN 438 and 538.

540 Advanced Clinical Practice 3 (0-9) Prereq FSHN 435, 437; instructor's permission. Application of diet therapy principles to development of nutrition interventions and care plans in a clinical practice setting.

561 Sports Nutrition 3 Prereq by interview only. Macronutrient and selected micronutrient utilization during exercise and restoration after feeding, dietary surveys of athletes, dietary ergogenic aids and discussion of the origins of dietary recommendations for athletes. Cooperative course taught by UI (FCS 561), open to WSU students.

564 Food Toxicology 3 Graduate-level counterpart of FSHN 464; additional requirements. Credit not granted for both FSHN 464 and 564. Cooperative course taught by UI (FST 464/564), open to WSU students.

565 Wine Microbiology and Processing 3 Graduate-level counterpart of FSHN 465; additional requirements. Credit not granted for both FSHN 465 and 565. Cooperative course taught by WSU, open to UI students (FST 465/565).

570 Advanced Food Technology 3 Graduate-level counterpart of FSHN 470; additional requirements. Credit not granted for both FSHN 470 and 570. Cooperative course taught by WSU, open to UI students (FST 570).

575 Supervised Practice V 2-18 May be repeated for credit; cumulative maximum 18 hours. 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 Food Process Engineering Design 3 Same as BySys E 582.

598 Foods/Nutrition Practicum V 1 (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.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit, S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit, S, F grading.

Nutrition

500 Seminar in Nutrition 1 May be repeated for credit; cumulative maximum 5 hours. Seminar on current research issues in nutrition.

505 Experimental Nutrition 3 (1-6) Same as A S 505.

507 Advanced Nutrition Metabolism 3 Same as A S 507.

508 Seminar-Written 2 Same as FSHN 508.

513 Mineral and Vitamin Metabolism 4 Same as A S 513.

520 Research Methods in Behavioral Nutrition 3 Same as FSHN 520.

521 Research Techniques in Nutrition 3 (1-6) Same as FSHN 521.

526 Advanced Community Nutrition 3 Same as FSHN 526.

531 Nutrition and Aging 2 Same as FSHN 531.

533 Pathophysiology of Human Nutrition 3 Same as FSHN 533.

598 Advanced Topics in Nutrition 1 or 2 May be repeated for credit. Recent research in nutrition.

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

800 Doctoral Research, Dissertation, and/or Examination Variable credit, S, F grading.

Department of Foreign Languages and Literatures

Associate Professor and Department Chair, E. Gonzalez; Professor, Elwood Hartman; Associate Professors, Z. Dong, J. Grenier-Winther, R. Halverson, B. Ingemanson, A. M. Rodriguez-Vivaldi; Assistant Professors, B. Hyner, C. Lupke, F. Manzo-Robledo, D. Pulido; Professors Emeritus, 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 or more in a study abroad program, ideally a program that offers an internship in the student's professional field.

Recognizing the need for students to reinforce in a practical way knowledge gained in the classroom, the department sponsors a wide variety of supplementary activities. The Maison Francaise, a living group where only French is spoken and where conversational activities are supervised by a resident native speaker, is open to students of sophomore standing and above. Visiting lecturers, language tables, foreign film showings, and other cultural events supplement the classroom experience.

The department offers courses of study leading to the degrees of Bachelor of Arts in Foreign Languages and Literatures (French, German, Russian, and Spanish) and Master of Arts in Foreign Languages and Literatures (Spanish).

Schedule of Studies

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 34 hours beyond the 203 level (or the equivalent level in competence) in the major language is required for a Bachelor of Arts degree in Foreign Languages and Literatures. 101, 102, and 203 do not count toward the major. Students who place into 102 and receive a B or better qualify for an addi-
FRENCH, GERMAN, SPANISH
REQUIREMENTS (120 HOURS)

Students may earn some equivalent credit in approved study abroad programs.

Freshman Year
First Semester  Hours
Engl 101 (if necessary) [W] (GER) 3
Fren, Ger, or Span 101 (if necessary), or higher (102, 203, or 204) 4
GenEd 110 [A] (GER) 3
One from For L 101, 110, 120, or 130 3
Elective 3

Second Semester  Hours
Biological Lab Science [B] (GER) 4
Fren, Ger, Span 102 or higher (203 or 204) 4
Fren, Ger, Span 105 1
GenEd 111 [A] (GER) 3
One from Fren, Ger, Span 110, 111, 120, 121, 130, or 131 3

Sophomore Year
First Semester  Hours
Fren, Ger, Span 203 or higher (204) 4
Fren, Ger, Span 205 1
Math 103 (if necessary) 3
Physical Lab Science [P] (GER) 4
Social Sciences [S, K] (GER) 3

Second Semester  Hours
Arts & Humanities [H,G] (GER) 3
Communication Proficiency [C,W] (GER) 3
Fren, Ger, Span 204 4
Fren, Ger, Span 205 1
Math Proficiency (Math 210 rec) [N] (GER) 3

Junior Year
First Semester  Hours
Fren, Ger, Span 306 3

Fren, Ger, Span 307 3
One from: Fren, Ger, Span 310, 311, 320, 321, 350, 351, or 361 3
Intercultural Studies [I, G, K] (GER) 3
Elective (For L 340 if FL teaching major) 3
Complete Writing Portfolio

Second Semester  Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K, or Social Sciences [S,K]] (GER) 3
Fren, Ger, Span 305 1
Fren, Ger, Span 308 [M] 3
One from: Fren, Ger, Span 310, 311, 320, 350, 351, or 361 3
Science Elective [B], [P], or [Q] (GER) 4

Senior Year
First Semester  Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K, or Social Sciences [S,K]] (GER) 3
Fren, Ger, Span 407 1
One from: Fren, Ger, Span 450, 451, 452 [M] 3
Elective (For L 440 if FL teaching major) 6

Second Semester  Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K, or Social Sciences [S,K]] (GER) 3
Fren, Ger, Span 305 1
Fren, Ger, Span 408 [M] 3
One from: Fren, Ger, Span 450, 451, or 452 [M] 3
Tier III Course [T] (GER) 3
Elective 3

Rus 305 1
Electives (For L 440 if FL teaching major) 6

RUSSIAN AREA STUDIES REQUIREMENTS (120 HOURS)

Freshman Year
First Semester  Hours
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
One from For L 101, 110, 120, 130 3
Rus 101 or higher (102, 203, 204) 4
Elective 3

Second Semester  Hours
Biological Lab Science [B] (GER) 4
GenEd 111 [A] (GER) 3
One from Rus 120, 121, 130 3
Rus 102 or higher (203, 204) 4

Sophomore Year
First Semester  Hours
Math 103 (if necessary) 3
Physical Lab Science [P] (GER) 4
Rus 203 or higher (204) 4
Social Sciences [S,K] (GER) 3

Second Semester  Hours
Arts & Humanities [H,G] (GER) 3
Communication Proficiency [C,W] (GER) 3
Math Proficiency (Math 210 rec) [N] (GER) 3
One from: Rus 120, 121, 130 3

Rus 204 4

Junior Year
First Semester  Hours
Intercultural Studies [I,G,K] (GER) 3
One from: Rus 410 or 430 3
Electives (For L 340 if FL teaching major) 6
Complete Writing Portfolio

Second Semester  Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K, or Social Sciences [S,K]] (GER) 3
Rus 305 1
Science Elective [B], [P], or [Q] (GER) 4
Elective 3

Senior Year
First Semester  Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K, or Social Sciences [S,K]] (GER) 3
One from: Econ 416, 1 Bus 380, Hist 461, 462, 463, 465, 466, Pol S 333, or 412 3
Rus 305 1
Electives (For L 440 if FL teaching major) 6

Second Semester  Hours
Arts & Humanities [H,G], Intercultural Studies [I,G,K, or Social Sciences [S,K]] (GER) 3
One from: Econ 416, 1 Bus 380, Hist 461, 462, 463, 465, 466, Pol S 333, or 412 3
Rus 361 3
Tier III Course [T] (GER) 3
Elective 3

1 Electives must be represented by a competence in a second foreign language up to and including 204; an approved university minor or a teaching minor; or a second major in another field.

2 Electives must be represented by a competence in a second foreign language up to and including 204; an approved university minor or a teaching minor; or a second major in another field.

Minimal Requirements for Each Minor

To fulfill requirements for a minor in Chinese, French, German, Russian, or Spanish, a student must complete a minimum of 16 hours of course work in one language area. 9 hours must be in courses other than 101-204, of which 6 must be at the 300-400 level in the target language, and at least 3 of the target language hours must be taken at WSU. No course in which a C- or below has been earned will be counted. 300-400 level courses taken pass, fail may not be included for credit toward the minor. No course may be repeated for credit toward the minor. No course may count for both the major and the minor. 105, 205, and 305 may not count toward the minor.

Minor in Chinese

The minor in Chinese requires Chin 101, 102, 203, 204 (or equivalent in fluency or Advanced Placement credits, as determined by department) plus 9 hours. Three of these 9 hours must be in one course on Chinese film, culture or literature taught in English. Six hours must be at the 300-400 level, 3 of which must be taken at WSU.
Minor in Film Studies
A minimum of 18 credits is required. 9 credits must be chosen from Engl 150, For L 110, Soc 372, or Theat 150. An additional 9 credits are chosen from CAC 338, 379, 404, Com 471, Engl 337, 339, Fren 110, 310, Ger 110, 310, Phil 210, Pol S 381, Rus 410, SHS 489, Span 110, 111, 310, 311, Theat 462, W St 321.

Minor in French Area Studies
Both options (French or Francophone Studies) in the minor require a minimum of 21 hours, chosen according to the following schedule of studies.
6 hours of language courses from: Fren 306, 307, 308, 361, 407, or 408; plus 3 hours of Fren 320; plus 3 hours from Fren 110, 120, 130 (French option) or Fren 110, 121, 130 (Francophone option); 9 additional hours from: Anth 350, 450, 456, Arch 324, 325, CAC 227*, 438*, Drama 365, 366, FA A 201, 202, 303, 304, Hist 312*, 446, 447, 448, 449, 450, 461, Mus 360, 361, Phil 220, 305, 310, 325, 420, Pol S 432, 447, 472.
*Students choosing Francophone Area Studies Option must take these courses.

Minor in German Area Studies
The minor in German Area Studies requires 21 hours, at least 9 of which must be 300-400-level including Ger 306, 307, 308, 310, 320, 350, 361, 407, 408, 450, 451, or 452; 3 hours from Ger 110, 120, 130 (Hist 468); 6 hours 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 Latin American Area Studies
The minor in Latin American Area Studies requires 21 hours, 9 hours of which must be at the 300-400-level. At least 8 hours must be in Spanish language courses. The additional hours 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, 445; Span 111, 121, 131, 311, 321, 351, 361, 450, 451, 452.

Minor in Russian Area Studies
The minor in Russian Area Studies requires 21 hours, at least 9 of which must be 300-400-level. At least 8 hours must be in Russian language courses. Two of the following film/literature/culture courses: Rus 120, 121, 130, 410, 430. Two of the following area studies courses: Econ 416, 1 Bus 380, Hist 461, 462, 463, 465, 466, Pol S 333, 412. Except for Russian language courses, all courses are taught in English.

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
101 [G] Introduction to the World of Languages 3 Taught in English. Explore the nature, history, evolution, acquisition, and use of language with examples from major foreign language groups.
110 [H] Introduction to Foreign Film 3 Taught in English. An introduction to the study of international film-its stories, cultures, and cinematic features.
130 [H] Introduction to Foreign Literature 3 Taught in English. An introduction to the study of international literature-its stories, cultures, and literary devices.

Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

221 Pre-Study/Internship Abroad Orientation 1 Prereq SA orientation. Taught in English. Orientation and practical information for students preparing to study or intern abroad. S, F grading.

280 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

300 Studies in Foreign Languages V 1-4 May be repeated for credit. Languages not currently part of the curriculum may be offered on demand. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (FL 300).

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.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

400 Special Topics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq GenEd 110 or 111. Interdisciplinary study of foreign languages, literature, or culture.
410 (422) [T] Issues in Foreign Film and Literature 3 Taught in English. 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.

440 (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.

450 Descriptive Linguistics 3 Same as Anth 450.

473 Teaching Foreign Language in the Elementary School 3 Same as T & L 473.

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.

480 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

495 Cooperative Education Internship V 2-6 May be repeated for credit; cumulative maximum 6 hours. Off-campus cooperative education internship with business, industry, or government unit. S, F grading.

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

540 (554) Research and Methods of Teaching Foreign Languages 3 Prereq graduate standing. Survey of current methodology and its research support with emphasis on practical application in the classroom.

542 Research and Methods in Teaching Foreign Culture Courses 3 Prereq graduate standing. Survey of current theory on teaching foreign culture courses with emphasis on practical application and design of activities.

597 Seminar in Scholarly Methodology 2 Bibliography and formal aspects of scholarly writing; general introduction to critical thinking.

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

Chinese

Chin

101 First Semester 4 (3-2) Fundamentals of speaking, listening, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 101).

102 Second Semester 4 (3-2) Prereq Chin 101 with a grade of C or better. Continuation of Chin 101. Not open to native speakers except with permission. Cooperative course taught by WSU, open to UI students (Chin 102).

105 Elementary Conversation 1 Elementary-level conversation practice in small groups with a native or near-native speaker, not open to native speakers except with permission. May be repeated for credit; cumulative maximum 2 hours. S, F grading.

111 (360) [G] Asian Film 3 Taught in English. Asian film from a cultural perspective. Cooperative course jointly taught by WSU and UI (Chin 360).

121 Asian Culture 3 Taught in English. Introduction to East Asian culture (primarily China, Japan, and Korea).


180 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite(s)</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
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<td>Elementary Greek</td>
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<tr>
<td>341</td>
<td>Elementary Greek</td>
<td>PreReq Chin 203 with a grade of C or better.</td>
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<tr>
<td>280</td>
<td>Special Topics: Study Abroad V</td>
<td>PreReq Chin 203 with a grade of C or better.</td>
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<td>180</td>
<td>Special Topics: Study Abroad V</td>
<td>PreReq Chin 203 with a grade of C or better.</td>
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<tr>
<td>103</td>
<td>Latin and Greek for Sciences</td>
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<td>102</td>
<td>Selections from Latin Prose and Poetry</td>
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<tr>
<td>205</td>
<td>Intermediate Conversation I</td>
<td>PreReq Chin 202 or equiv.</td>
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<tr>
<td>305</td>
<td>Intermediate Conversation II</td>
<td>PreReq Chin 204.</td>
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<tr>
<td>307</td>
<td>Intermediate Chinese</td>
<td>PreReq Chin 204.</td>
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<tr>
<td>365</td>
<td>Survey of Latin Literature</td>
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<tr>
<td>366</td>
<td>Survey of Latin Literature</td>
<td>PreReq Chin 102 with a grade of C or better.</td>
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<tr>
<td>369</td>
<td>Latin Language Lab</td>
<td>PreReq Chin 201.</td>
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<td>380</td>
<td>Special Topics: Study Abroad V</td>
<td>PreReq Chin 201.</td>
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<td>465</td>
<td>Latin Literature of the Augustan Age</td>
<td>PreReq Chin 404.</td>
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<tr>
<td>466</td>
<td>Latin Literature of the Augustan Age</td>
<td>PreReq Chin 404.</td>
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<tr>
<td>461</td>
<td>Latin Literature of the Republic</td>
<td>PreReq Chin 404.</td>
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<td>462</td>
<td>Latin Literature of the Silver Age</td>
<td>PreReq Chin 404.</td>
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<td>460</td>
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<td>PreReq Chin 404.</td>
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<td>463</td>
<td>Latin Language Lab</td>
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<td>464</td>
<td>Latin Language of the Republic</td>
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<td>465</td>
<td>Latin Language of the Silver Age</td>
<td>PreReq Chin 201.</td>
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<td>203</td>
<td>Third Semester</td>
<td>PreReq Chin 102 with a grade of C or better.</td>
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<td>304</td>
<td>Fourth Semester</td>
<td>PreReq Chin 201.</td>
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<td>203</td>
<td>Third Semester</td>
<td>PreReq Chin 201.</td>
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<td>304</td>
<td>Fourth Semester</td>
<td>PreReq Chin 201.</td>
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<td>203</td>
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<td>PreReq Chin 201.</td>
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<tr>
<td>304</td>
<td>Fourth Semester</td>
<td>PreReq Chin 201.</td>
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</table>

**French**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite(s)</th>
<th>Description</th>
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<tbody>
<tr>
<td>101</td>
<td>First Semester</td>
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<tr>
<td>102</td>
<td>Second Semester</td>
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<tr>
<td>104</td>
<td>Intensive French: Foundations of Language and Culture</td>
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<td>105</td>
<td>Elementary Conversation</td>
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<td>341</td>
<td>Elementary Greek</td>
<td>PreReq 341.</td>
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<tr>
<td>342</td>
<td>Elementary Greek</td>
<td>PreReq 341.</td>
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<td>349</td>
<td>Greek Language Lab</td>
<td>PreReq 349.</td>
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<tr>
<td>110</td>
<td>[H] French/Francophone Film</td>
<td>PreReq 306.</td>
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</tbody>
</table>

**Latin and Greek for Sciences**

*From early Latin to the Middle Ages. Cooperative course taught by UI (Latn 365), open to WSU students.*

**Latin Language Lab**

*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.**

**Special Topics: Study Abroad**

*V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading. Cooperative course taught by UI (Latn 404), open to WSU students.**

**Intermediate Greek**

*Readings in classical Greek prose and poetry. Cooperative course taught by UI (Latn 441), open to WSU students.*

**Intermediate Greek**

*Readings in classical Greek prose and poetry. Cooperative course taught by UI (Latn 442), open to WSU students.*

**Latin Literature of the Augustan Age**

*Cooperative course taught by UI (Latn 461), open to WSU students.*

**Latin Literature of the Silver Age**

*Cooperative course taught by UI (FL/LA 465), open to WSU students.*

**Latin Literature of the Silver Age**

*Cooperative course taught by UI (FL/LA 466), open to WSU students.*

**Survey of Latin Literature**

*From early Latin to the Middle Ages. Cooperative course taught by UI (Latn 366), open to WSU students.*
130 [H] Masterpieces of German Literature 3 Prereq Fren 306. Selected readings and analyses of contemporary French-speaking authors (African, Canadian, Caribbean). Taught in French.

361 (310) French for the Professions 3 Prereq Fren 204. Communication in French for professional purposes; telephone and meeting role-plays, letter-and resume-writing, discussions of current events in the Francophone world.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

407 Advanced Speaking and Listening 3 Prereq Fren 307. Systematic development of speaking and listening proficiency at the advanced level.


430 (450) [T] Topics in French/Francophone Literature 3 Prereq completion of one Tier I course and three Tier II literature or humanities courses. Taught in English. In-depth reading and discussion of a select group of French literary works of a particular theme, genre, or author.

450 (425) Seminar in French Studies - Themes 3 Prereq Fren 306 or higher. Seminar on important themes in French studies. Taught in French.

451 (427) Seminar in French Studies - Authors 3 Prereq Fren 306 or higher. Seminar on important authors in French studies. Taught in French.

452 (424) Seminar in French Studies - Genres 3 Prereq Fren 306 or higher. Seminar on important genres in French studies. Taught in French.

480 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

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

German

101 First Semester 4 (3-2) Fundamentals of speaking, listening, reading, and writing. Not open to native speakers except with permission.

102 Second Semester 4 (3-2) Prereq Ger 101 with a grade of C or better. Continued development of basic skills in speaking, listening, reading, and writing. Not open to native speakers except with permission.

105 Elementary Conversation 1 Elementary-level conversation practice in small groups with a native/near-native speaker; not open to native speakers except with permission. May be repeated for credit; cumulative maximum 2 hours. S, F grading.

110 [H] German Film 3 Taught in English. Introduction to German film.

120 (315) [H] Germanic Culture 3 Taught in English. The cultural development of the Germanic peoples to 1750.

121 (317) [S] Contemporary German Culture 3 Taught in English. Current social, political, economic, and cultural trends in Germany.

130 [H] Masterpieces of German Literature in Translation 3 Taught in English. Introduction to German literature.

180 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

203 Third Semester 4 (3-2) Prereq Ger 102 with a grade of C or better. Further development of speaking, listening, reading, and writing skills. Not open to native speakers except with permission.

204 (304) Fourth Semester 4 (3-2) Prereq Ger 203 with a grade of C or better. Continued practice in spoken and written language; selected texts in a cultural context. Not open to native speakers except with permission.

205 Intermediate Conversation 1 1 Prereq Ger 102 or equiv. May be repeated for credit; cumulative maximum 2 hours. Intermediate-level conversation practice in small groups with a native/near-native speaker. Not open to native speakers except with permission.

206 Intermediate Conversation II 1 1 Prereq Ger 102 or equiv. May be repeated for credit; cumulative maximum 2 hours. Prereq Ger 204. Conversation practice in small groups with a native/near native speaker. Not open to native speakers except with permission. S, F grading.

207 Intermediate Reading and Translation 3 Prereq Ger 204. Vocabulary building, contrastive English-German expressions, development of skills to increase reading speed and fluency.

208 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

305 Intermediate Conversation II 1 1 Prereq Ger 204. Conversation practice in small groups with a native/near native speaker. Not open to native speakers except with permission. S, F grading.

306 Intermediate Reading and Translation 3 Prereq Ger 204. Vocabulary building, contrastive English-German expressions, development of skills to increase reading speed and fluency.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

390 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

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 with a grade of C or better. Continued development of basic skills in speaking, listening, reading, and writing. Not open to native speakers except with permission. Cooperative course taught by UI (Japn 102), open to WSU students.

203 Third Semester 5 (4-3) Prereq Japn 102 with a grade of C or better. Continued practice in spoken and written language; selected texts in a cultural context. Cooperative course taught by UI (Japn 203), open to WSU students.

204 (304) Fourth Semester 4 Prereq Japn 203 with a grade of C or better. Continued practice in spoken and written language; selected texts in a cultural context. Cooperative course taught by UI (Japn 204), open to WSU students.

450 (425) [M] Seminar in German Studies - Genres 3 Prereq Ger 306 or higher. Seminar on important genres in German studies. Taught in German.

451 (427) [M] Seminar in German Studies - Authors 3 Prereq Ger 306 or higher. Seminar on important authors in German studies. Taught in German.

452 (424) [M] Seminar in German Studies - Genres 3 Prereq Ger 306 or higher. Seminar on important genres in German studies. Taught in German.

480 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

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

Italian

Ital

101 First Semester—Study Abroad V 3-6 Introductory Italian. (Siena and Macerata). Not open to native speakers except with permission.

102 Second Semester—Study Abroad V 3-6 Prereq Ital 101. Continuation of Ital 101. (Siena and Macerata). Not open to native speakers except with permission.

180 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

480 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

498 Special Problems V 1-4 May be repeated for credit. S, F grading.
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<th>Course Code</th>
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<td>203</td>
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<td>308</td>
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<td>361</td>
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<td>Special Topics: Study Abroad</td>
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<td>400</td>
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<td>412</td>
<td>Government and Politics of the Former Soviet Union</td>
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<td>420</td>
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<td>461</td>
<td>Medieval Russia</td>
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<td>462</td>
<td>History of Imperial Russia</td>
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<td>463</td>
<td>History of the Soviet Union</td>
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<td>465</td>
<td>East-Central Europe</td>
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<tr>
<td>466</td>
<td>History of the Cold War, 1944-present</td>
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<td>480</td>
<td>Special Topics: Study Abroad</td>
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<td>499</td>
<td>Special Problems</td>
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<td>120</td>
<td>[H] Peninsular Spanish Culture</td>
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<td>121</td>
<td>[G] Latin American Culture</td>
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<tr>
<td>130</td>
<td>[H] Masterpieces of Peninsular Spanish Literature in Translation</td>
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<td>180</td>
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<td>320</td>
<td>Peninsular Spanish Culture</td>
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<tr>
<td>321</td>
<td>Latin American Culture</td>
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</table>

**Notes:**
- Courses may be repeated for credit; cumulative maximum 2 hours. Intermediate-level conversation practice in small groups with a native/near-native speaker and active review of grammar. Not open to native speakers except with permission.
- Cooperative course taught by WSU, open to UI students (Russ 203).
- Courses may be repeated for credit; cumulative maximum 6 credits. S, F grading.
- Courses may be repeated for credit; cumulative maximum 6 credits. S, F grading.
- Cooperative course taught by WSU, open to UI students (Russ 305). S, F grading.
350 (320) Introduction to Peninsular Spanish Literature 3 Prereq Span 306. Reading and discussion of outstanding literary works of Spain. Taught in Spanish.

351 Introduction to Latin American Literature 3 Prereq Span 306. Introduction to literary analysis and the history of literature in Latin America. Taught in Spanish.

361 (310) Spanish for the Professions 3 Prereq Span 204. Communication in Spanish for professional purposes; telephone and meeting role-plays, letter-writing, television, discussions of current events in the Spanish-speaking world.

362 (309) Topics in Professional Language 3 Prereq Span 204. Specialized language training; may include Spanish for health professionals, law enforcement personnel, veterinarians, etc.

380 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

407 Advanced Speaking and Listening 3 Prereq Span 307. Systematic development of speaking and listening proficiency at the advanced level.


450 (425) Seminar in Spanish Studies - Themes 3 Prereq Span 306 or higher. Seminar on important themes in Spanish studies. Taught in Spanish.

451 (427) Seminar in Spanish Studies - Authors 3 Prereq Span 306 or higher. Seminar on important authors in Spanish studies. Taught in Spanish.

452 (424) Seminar in Spanish Studies - Genres 3 Prereq Span 306 or higher. Seminar on important genres in Spanish studies. Taught in Spanish.

480 Special Topics: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 credits. S, F grading.

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

520 Medieval Literature 3 Selected works.

521 Cervantes 3 Quijote 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 or Writing Assessment Coordinator. Assigned tutorials in the 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 special 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.

Schedule of Studies

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

T. Bowen-Baldwin, 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 which fulfills an academic or career goal and includes prerequisites consistent with the 300-400-level major course work. In addition, each student will satisfy the General Education Requirements and any additional requirements of the College of Sciences.

Plan A—Primary/Secondary Concentration

Primary concentration: a minimum of 24 semester credits, including at least 15 300-400-level credits, must be completed in biological sciences, in mathematics or in a single physical science with a minimum 2.00 primary concentration g.p.a. Students who complete one of the above primary concentrations will receive a Bachelor of Science degree with a primary concentration in general biological sciences (Gen B), general mathematics (Gen M) or general physical sciences (Gen P).

Secondary concentration: a minimum of 15 semester credits, including at least 6 300-400-level
credits, must be completed in another academic department, program or area published in the catalog with a minimum 2.0 minor concentration 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. 9 credits in each department or program area is required 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 primary 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. 9 credits in each department or program is required 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 physical sciences (Gen P) include physical science-based engineering courses. Students who complete a Plan C curriculum receive a Bachelor of Science degree with a primary 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 Mathemastics (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

#### REQUIREMENTS (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**

<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>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Semester**

| Biological Sciences [B] (GER) | 4 |
| Clas 101 or 341 | 4 |
| Communication Proficiency [C, W] (GER) | 3 |
| F A 201 [H] (GER) | 3 |
| GenEd 111 [A] (GER) | 3 |

**Sophomore Year**

| First Semester | Hours |
| Clas Language Elective<sup>1</sup> | 4 |
| Hum 101 [H] (GER) | 3 |
| Physical Sciences [P] (GER) | 4 |
| Social Sciences [S, K] (GER) | 3 |

| Second Semester | Hours |
| Clas Language Elective<sup>1</sup> | 4 |
| Hist 341 [H] (GER) | 3 |
| Hum 103 [H] (GER) | 3 |
| Phil 290 [H] (GER) | 3 |
| Approved 300-400-level Elective<sup>2</sup> | 3 |

**Junior Year**

| First Semester | Hours |
| Clas Language Elective<sup>1</sup> | 4 |
| Hist 340 [H] (GER) | 3 |
| Approved 300-400-level Elective<sup>2</sup> | 3 |
| 300-400-level Electives | 6 |
| Complete Writing Portfolio | |

| Second Semester | Hours |
| Intercultural [L, G, K] (GER) | 3 |
| Approved 300-400-level Electives<sup>2</sup> | 6 |
| 300-400-level Electives | 6 |

**Senior Year**

| First Semester | Hours |
| Approved 300-400-level Electives<sup>2</sup> | 6 |
| 300-400-level Electives | 6 |
| Electives | 3 |

| Second Semester | Hours |
| Tier III Course [T] (GER) | 3 |
| Electives | 11 |

<sup>1</sup> Students must complete a second year (or its equivalent) of Greek or Latin language, which may be completed at the University of Idaho.

<sup>2</sup> 18 hours from: Anth 336, Engl 308, F A 202, F A 301, Hist 381, Hist 440, Pol 3 437.

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.

### Humanities and Social Sciences

**T. Bowen-Baldwin, Coordinator**

This division of general studies is for students whose primary interest in the humanities or social sciences requires interdisciplinary programs and course selections which are not possible within single academic programs or established curricula. Students who wish to earn a Bachelor of Arts in Humanities or a Bachelor of Arts in Social Sciences will devise an approved, coherent program of study with the coordinator which fulfills an academic or career goal and includes prerequisites consistent with the 300-400-level major course work. In addition, each student will satisfy the General Education Requirements and any additional requirements of the College of Liberal Arts.

**Plan A—Primary/Secondary Concentration**

Primary concentration: a minimum of 24 semester credits, including at least 15 300-400-level credits, must be completed in a single humanities or social sciences department or published program with a minimum 2.00 primary concentration g.p.a. The primary concentration (Gen H or Gen S) and the degree will depend on the primary concentration.

Secondary concentration: a minimum of 15 semester credits, including at least 6 300-400-level credits, must be completed in another academic department, program or area published in the catalog with a minimum 2.00 g.p.a.

**Plan B—Three Related Areas in Humanities**

A combination of humanities courses of at least 39 credits involving three or more academic departments or programs, with a minimum of 9 credits in each of the three areas including at least 21 300-400-level credits with at least a 2.00 g.p.a. in these courses. Students will major in general humanities (Gen H) and will receive a Bachelor of Arts in Humanities.

**Plan C—Three Related Areas in Social Sciences**

A combination of social sciences courses of at least 39 credits involving three or more academic departments or programs, with a minimum of 9 credits in each of the three areas including at least 21 300-400-level credits with at least a 2.0 g.p.a. in these courses. Students will major in general social sciences (Gen S) and will receive a Bachelor of Arts in Social Sciences.

### 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.
International Area Studies

E. Gonzalez, 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 Humanities with a focus in International Area Studies will devise an approved, coherent program of study with the coordinator and a designated advisor who is a specialist in the student’s area of interest. The program of study must fulfill an academic or career goal, include prerequisites consistent with the 300-400 level major coursework, satisfy the GER requirements and any additional requirements for the College of Liberal Arts, and include language proficiency appropriate to the cultural area. The area studies major will consist of a minimum of 40 credits. No course in which C- or lower is earned will be counted toward the major. More details are available on the websites of WSU, the General Studies program, and the Foreign Languages Department, at www.forlang.wsu.edu.

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 the requirement for completion of the degree, the student’s committee will meet to discuss and evaluate the project. All General Education Requirements of the university and the 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 advisor together select.

**GENERAL STUDIES LINGUISTICS REQUIREMENTS (120 HOURS)**

**Freshman Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
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</tbody>
</table>

**Second 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>Biological Sciences [B] (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>Linguistics Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Sophomore Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linguistics Elective</td>
<td>3</td>
</tr>
<tr>
<td>Math, Cpt S, or Stat Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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</tbody>
</table>

**Second 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>Linguistics Elective</td>
<td>6</td>
</tr>
<tr>
<td>Phil Elective</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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</tbody>
</table>

**Junior 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] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Linguistics Elective</td>
<td>3</td>
</tr>
<tr>
<td>300-level Foreign Language Elective</td>
<td>3</td>
</tr>
<tr>
<td>Emphasis Elective</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Linguistics Elective</td>
<td>3</td>
</tr>
<tr>
<td>300-level Foreign Language Elective</td>
<td>3</td>
</tr>
<tr>
<td>Emphasis Elective</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>Linguistics Elective</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

1 Students must take 21 hours or more, including at least one historical course: Anth 350, 450, 499; Engl 256, 354, 458, 499.

Students must take 3-12 hours depending upon special emphasis: Cpt S 121, 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 advisor 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.

**GENERAL STUDIES RELIGIOUS STUDIES REQUIREMENTS (120 HOURS)**

**Freshman Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>For L Elective</td>
<td>4</td>
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</table>

**Second 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>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>For L Elective</td>
<td>4</td>
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</tbody>
</table>

**Sophomore Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anth 303</td>
<td>3</td>
</tr>
</tbody>
</table>
JUNIOR & SENIOR YEAR—CHOOSE ONE OF THE OPTIONS LISTED BELOW


Non-Western Religions: Hist 273, Phil 314, 315, 407; six courses from: Anth 330, Hist 270, 275, 308, 370, 373, 374, 390, 408; Hum 103.


Minor in Global Studies

The Global Studies minor is designed to provide an interdisciplinary, global perspective on the arts, humanities, social sciences, and sciences. The minor is flexible and designed to complement majors from across the university, allowing students the opportunity to reach beyond their majors, or to take courses related to their majors outside of the context of the United States. The minor requires 18 credit hours. Students should consult an Academic Advisor to determine their course selections.

Certificate in American Indian Studies

T. Schenck, Coordinator

The certificate in American Indian Studies requires 18 semester hours which shall include a required core (9 hours) and 9 hours of electives. Of the credits must be taken at WSU, and 9 hours must be at the 300-400 level. A minimum of 12 credits must be taken for a letter grade. A grade of C or better must be earned in each of the required and recommended courses in order to qualify for the certificate. Any student enrolled in a degree-seeking study is eligible to enroll in the certificate program. Other students must meet the existing admissions standards for non-degree-seeking students. The university undergraduate certificate fee will apply.

Students must complete Anth 320, CAC 171, and Hist 308. The remaining 9 hours is chosen from the following elective courses: Anth 327, Anth 331, Anth 333, Anth 435, CAC 372, CAC 373, CAC 379, CAC 470, CAC 475, FA 301, Mus 265. Other courses in American Indian studies may be added to the elective pool as they become available; consult the certificate coordinator.

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 in Education. The endorsement granted in the student's major and minor must include the endorsement granted in their teaching major and minor.

Schedule of Studies

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 GCRs 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 GCRs.

Candidates for a B.A. 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 REQUIREMENTS (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) 2

**Sophomore Year**

**First Semester**

- Geol 210 [P] (GER) 3
- Geol 350 [M] 4
- Geol 351 1
- Math 172, Cpt S 121, or Stat 412 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 [T] (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) Introduces physical geology for non-science majors; emphasis on western U.S. Credit not granted for more than one of Geol 101, 102, 180.

**102 [P] Physical Geology** 4 (3-3) For science majors and honors students. Modern concepts of earth science; mineral rock, resource, and map study. Field trip required. Credit not granted for more than one of Geol 101, 102, 180.

**103 The Solar System** 3 Overview of the results of modern planetary exploration, geological processes, and environments on planets and moons in our solar system. Field trip required.

**150 [Q] Conflict and Debate in Geological Sciences** 3 (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) Pre-requires 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 Pre-requires Geol 210. Significant geologic features, processes, and geologic history of the national parks. Field trip optional.

**206 Field Petrology** 3 (2-3) Pre-requires Geol 101 or 102. Hand sample analysis, petrogenesis and field relationships of rocks. Field trip required.

**210 [P] Earth's History and Evolution** 4 (3-3) Re: Bidol 102. Introduction to earth's history and evolution through observations, data collection and analysis, readings and writing exercises. Two field trips required.

**221 Field Trip 1 (0-3) May be repeated for credit.** Pre-requires 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) Pre-requires Geol 105; Geol 350 or c//; Math 107 or c//; Phys 101 or 201. Basic mathematical tools and physical principles for geologic problem solving. Field trip required.

**300 Vertebrate Palaeontology and Evolution** 3 Pre-requires Geol 210. Vertebrate evolution with focus on dinosaurs including origins, physiology, behavior, and relationships.

**308 [M] Geology Field Camp** 6 (0-18) Pre-requires junior standing: Geol 340, 350. Detailed geologic mapping of an area; practice in methods of geologic field work. Cooperative course taught jointly by WSU and UI (Geol 401).

**310 Invertebrate Paleontology** 3 (2-3) Pre-requires Geol 210. Morphology, classification, evolution, and paleoecology of fossil invertebrate organisms.

**315 Water and the Earth** 3 (2-3) Pre-requires Chem 106 and Geol 101 or 102; Math 140, 171, or c//; Phys 102 or 202. Global hydrologic cycle, including rivers and weathering, groundwater, rainfall, and the atmosphere, oceans, human impacts. Field research required.

**320 Sedimentary Petrology and Sedimentation** 3 (2-3) Pre-requires Geol 210, 351. Sedimentary rock composition and origins applying fundamental principles of sedimentology. Field trip required.

**322 [P] Geology of the Pacific Northwest** 3 Pre-requires either Geol 101 or 102. Physical geology of the Pacific Northwest, focusing on geological processes important in its evolution. Field trip required. Credit not granted for both Geol 322 and 323.

**323 [P] Geology of the Pacific Northwest** 4 (3-3) Pre-requires 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) Pre-requires Geol 101 or 102; Geol 101 or 102. Composition, physical properties, structure, crystallography, identification, and origin of minerals. Field trip required.

**351 Optical Mineralogy** 1 Pre-requires c// in Geol 350 or by permission. Elements of optical crystallography as applied to identification of minerals.

**356 Igneous Petrology** 3 (2-3) Pre-requires Geol 351. Origin, evolution, and eruption of magma; emphasizes mineralogy, textures, chemical composition, and physical form of igneous rock. Field trip required.

**362 Metamorphic Petrology** 2 (1-3) Pre-requires 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 Pre-requires junior standing. Global earth system: ocean, earth, atmosphere, biosphere, and cryosphere; human impact on the climate system; climate change data predictions; debates.

**403 Environmental Geology** 3 Pre-requires either Geol 101 or 102. Geological hazards and geologic problems associated with human activities. Optional field trip.

**405 Geophysics** 4 (3-3) Pre-requires 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.
Department of Geology


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 435), 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 and mapping 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, asthenosphere, and mantle; emphasis on deformation processes and constraints derived from investigation of active tectonics using geophysics, seismology, geodesy, and structural geology. Credit not granted for both Geol 459 and 559. Cooperative course taught jointly by WSU and UI (Geol 459/559).

470 Introduction to Economic Geology 3 (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 Geology 3 (2-3) Prereq C E 317 or Geol 315 or BSysE 351; and Math 140 or 172 or c//. Introduction to groundwater occurrence, movement, quality, and resource management, emphasizing physical and biogeochemical principles. Field trip required.

476 Exploration Methods 3 Prereq Geol 470. Design of 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.


483 Radiogenic Isotopes and Geochronology 3 Chem 105 and 106 or equivalent; Geol 480 or by permission. Radiogenic isotopes and their uses as chronometers (radiometric dating) and as tracers of earth evolution and differentiation. Cooperative course taught jointly, open to UI students (Geol 483).

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 scientists on geological research. S, F grading.

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

505 Geophysics 4 (3-3) 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 Paleocology 3 Ecological dynamics as applied to the paleontological record; preservation constraints; animal-sediment interactions; organisms' role in the relative time scale. Field trip required. Cooperative course taught by UI (Geol 515), open to WSU students.

520 Advanced Topics in Sedimentary Rocks 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq Geol 320. Modern aspects of sedimentary rocks. Cooperative course taught by WSU, open to UI students (Geol 520). Field trip required.

521 Clastic Depositional Systems 3 (2-3) Prereq Geol 320. Clastic sedimentary environments; architectural elements and facies analysis. Cooperative course taught by WSU, open to UI students (Geol 528). Field trip required.

523 Advanced Topics in Stratigraphy 3 May be repeated for credit. Prereq Geol 421. Cooperative course taught by WSU, open to UI students (Geol 523).

525 Carbonate Depositional Systems 3 (2-3) Prereq Geol 320. Modern carbonate environments and processes; ancient carbonate rock sequences; carbonate platform-to-basin transition; diagenesis of carbonate rocks. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 529).

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.

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 Prerequisite Phys 102, Math 171. 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, textural interpretation, sample preparation, photomicrography, fluid inclusion analysis. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 551).

552 X-ray Analysis in Geology 3 (2-3) Generation and use of X-rays for geological research; electron microprobe/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 3 (2-3) Prereq Chem 331, Geol 582; or by interview only. Application of solution chemistry to hydrothermal solutions; Eh-pH, log f(O2), pO2, activity - activity diagrams; estimation techniques; water structure; metal complexation; solubility, transport and deposition; 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.

559 Geodynamics 3 Graduate-level counterpart of Geol 439; additional requirements. Credit not granted for both Geol 459 and 559. Cooperative course taught jointly by WSU and UI (Geol 559). Field trip required.

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 and environmental impact of metallic ores of hydrothermal origin; selected readings and presentations. Field trip required. Cooperative course taught by UI (Geol 577), open to WSU students.

563 Igneous Petrogenesis 3 (2-3) Prereq Geol 356. Chemical and petrologic techniques used to interpret the origin and evolution of igneous rocks. Cooperative course taught by WSU, open to UI students (Geol 563).
576 Volcanology 3 (2-3) Prereq Geol 356. Eruption mechanisms, volcanic processes and landforms, and volcanic deposits. Field trips required. Cooperative course taught by UI (Geol 567), open to WSU students.

569 Field Methods in Hydrogeology 2 (1-3) Prereq Geol 475; Geol 577 or 579. Theory and practice of acquisition of hydrogeologic data, emphasizing design and execution of field 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, isotopic applications.

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.

576 Fundamentals of Modeling Hydrogeologic Systems 3 Prereq Hydr 583, Math 275, or permission of instructor. Development and application of models representing physical systems, with emphasis on groundwater flow; basic equations of potential flow; properties assignment; parameter sensitivity; dimensional analysis. Cooperative course taught by UI (Hydr 576), open to WSU students.

577 Advanced Groundwater Hydraulics 3 Same as C.E. 577.

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. Thermo dynamic 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 stable isotope geochemistry in the geological sciences. Cooperative course taught by WSU, open to UI students (Geol 584).

588 Isotope Geology 3 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 593), 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. F, S 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 Departments 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.

Schedule of Studies

Students beginning post-secondary enroll...
### SOCIAL STUDIES EDUCATION REQUIREMENTS (142 HOURS)

Social Studies is a major for students who plan to earn both a B.A. and a primary teaching endorsement in the multidisciplinary fields of History and the Social Sciences: Anthropology, Economics, Geography, Political Science, Psychology, Sociology. Social Studies majors who wish to earn a teaching credential must apply to Teacher Education Student Services in the College of Education. They should consult with an advisor in History.

The Social Studies Education major consists of 63 hours: Lower-division (30 hours) to include Hist 101, 102, 110, 111; one from Hist 230, 231, 270, 272, 273, 275; one from 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, Crm J 320; 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

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<th>First Semester</th>
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<td>Anth 101 [S] or Hist 101 [H] (GER)</td>
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### Sophomore Year

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### HISTORY EDUCATION REQUIREMENTS (139 HOURS)

Students who wish to earn a teaching credential must apply to Teacher Education Student Services in the College of Education. They should consult with an advisor in History.

The History Education major consists of 42 hours: 36 hours of Hist, including 6 hours of U.S., 6 hours of European, and 9 hours of Non-Western/Global, of which 21 hours must be 300-400 level and must include Hist 300, 422, and 469; 3 additional hours from CAC 111, 131, 151, 171, Hist 150, W St 200; plus Hist 480. Hist courses and courses crosslisted with Hist do not count as GERs.

Students must have one year of a foreign language at the college level or two years at the high school level.

A supporting endorsement (18-21 hours) is recommended. It should be selected in consultation with an advisor.

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<td>Econ 101 [S], Econ 102 [S], Pol S 101 [S], or Psych 105 [S] (GER)2</td>
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<tr>
<td>Engl 201 [W], 301 [W], or 302 [W] (GER)3</td>
<td>3 or 4</td>
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<tr>
<td>Hist 101 [H] (GER)</td>
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<tr>
<td>Hist 110 [S] (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>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Hist 102 [H] (GER)</td>
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<tr>
<td>Hist 111 [S] (GER)</td>
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<tr>
<td>Hist 230 [K], 231 [K], 270 [K], 272 [I], 273 [G], or 275 [K] (GER)</td>
<td>3</td>
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<td>T &amp; L 300</td>
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</table>
Complete Writing Portfolio by taking appropriate courses or special examina-
tions. Opportunities are provided for removing deficiencies in several fields of specialization in history. Adequate
preparation for graduate study in history (approximately 12 hours) and who have
necessary in the above schedule of studies.

### Description of Courses

#### History

101 [H] Classical and Christian Europe 3

Greece and Rome, birth of Christianity and Islam, Middle Ages, Renaissance, Reformation, religious wars, Louis XIV.

102 [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.

110 [S] American History to 1877 3

Social, economic, cultural history of British mainland colonies/United States to 1877.

111 [S] American History Since 1877 3

Social, economic, cultural history of United States, 1877 to present.

150 [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.

198 [S] History Honors 3

Open only to students in the Honors College.

201 [K] Asian/Pacific American History 3

Same as CAC 211.

205 [H,D] African American History 3

Same as CAC 235.

216 [S,D] American Cultures 3

Same as Am St 216.

230 [K] Latin America, The Colonial Period 3

Overview of the most significant events, social and ethnic groups, practices, and institutions of colonial Latin America.

231 [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.

255 [S,D] Chicana/o History 3

Same as CAC 255.

270 [K] India: History and Culture 3

Development of civilization; and contemporary societies of India and South Asia.

272 [J] Introduction to Middle Eastern History 3

History of the Middle East from Muhammad to the present; political and religious development and the impact of empires.

273 [G] Foundations of Islamic Civilization 3

Main ideas and institutions that have characterized Islamic civilization since its founding, presented thematically.

275 [K] Introduction to East Asian Culture 3

Civilizations of China and Japan.

280 [S,D] Race and Law in American History 3

Same as CAC 280.

298 [S,D] History of Women in American Society 3

The roles of women—social, economic, political—in American history from colonial times to the present.

299 Model United Nations 1

May be repeated for credit; cumulative maximum 8 hours. Provides students with background of United Nations and prepares them to participate in the Model U.N. conference during spring semester in New York. Cooperative course taught by UI (3200/ 400), open to WSU students.

300 [M] Writing about History 3

Prereq: Engl 101. Historical topics, use of sources, analytical thought, and precision in language.
414 The Era of the American Revolution  The origins of the American Revolution, the War of Independence, and the emergence of re-publican government and society.

415 Jeffersonian-Jacksonian America  Social and political history of the United States from 1789 to 1845; Jeffersonian and Jacksonian eras. Credit not granted for both Hist 415 and 515.

416 Civil War and Reconstruction  The Civil War as a problem in historical causation and so-cial, political, and economic impact of the war. Credit not granted for both Hist 416 and 516.

417 Rise of Modern America  Response to in-dustrialism in the Gilded Age and the reform movements of Populism and Progressivism. Credit not granted for both Hist 417 and 517.

418 United States, 1914-1945  America through World War I, cultural tensions of the Twenties, and the crises of Depression and WWII. Credit not granted for both Hist 418 and 518.

419 United States, 1945-Present  International and domestic impact of the Cold War, era of McCarthyism, American aspirations, tensions and conflicts in the post-industrial era. Credit not granted for both Hist 419 and 519.

420 American Constitutional History  Prereq Hist 110 or Pol S 101. Credit not granted for both Hist 420 and 520.

421 The American West  Multicultural explora-tion of the frontier experience and western America; environment, economic develop-ment, gender, class and race emphasized. Credit not granted for both Hist 421 and 521.

422 History of the Pacific Northwest 3 Fullfills the teaching certification requirement in state history and government in Washington and other Pacific Northwest states. Credit not granted for both Hist 422 and 522.

423 Radicals, Reformers, and Romantics: The Impact 3 Changing thought and its impact in the United States from colonial times to the present. Credit not granted for both Hist 423 and 523.

425 [T] The City in History 3 Prereq completion of one Tier I and three Tier II courses. Description and comparison of the city through history in Eu-rope and one or more non-Western cultures. Credit not granted for both Hist 425 and 525.

427 [M] Public History: Theory and Methodology 3 An introduction to the broad range of non-traditional careers in history. Credit not granted for both Hist 427 and 527.

430 [M] History of Mexico 3 War of independence, 19th century Mexico and the liberal-conservative struggle; modern Mexico since the Revolution of 1910. Credit not granted for both Hist 430 and 530.

432 20th Century Latin America 3 Contemporary developments, policies and trends in the Latin American states. Credit not granted for both Hist 432 and 532.

433 History of Cuba and the Caribbean 3 His-torical development of the Caribbean, with emphasis on Cuba, from the Spanish arrival to Castro's revolution. Credit not granted for both Hist 433 and 533.

434 History of Central America 3 Social and po-itical development in Central America; reasons for dictatorships and radical social changes. Credit not granted for both Hist 434 and 534.

435 [T] European Expansion Overseas, 1400-1800 3 Prereq completion of one Tier I and three Tier II courses. The factors underlying European overseas expansion before 1800 and its impact on indigenous societies and world trading patterns.

436 [T] Imperialism in the Modern World 3 Prereq completion of one Tier I and three Tier II courses. History of imperialism (colonial, eco-nomic, territorial, cultural) since 1800 as a global phenomenon.

437 Topics in History—Study Abroad 3

438 Topics in History—Study Abroad 3

439 Topics in History—Study Abroad 3

444 [T] The Renaissance 3 Prereq completion of one Tier I and three Tier II courses. Political, cul-tural, and religious history of Europe, 1300-1500.

450 [M] Europe Since 1815 3 The consolidation of industrial society and the nation-state in nineteenth-century Europe. Credit not granted for both Hist 450 and 550.

453 Conservatism, Liberalism, and Social-ism: Europe, 1815-1870 3 The consolidation of industrial society and the nation-state in nineteenth-century Europe. Credit not granted for both Hist 453 and 553.

454 Nationalism and National Conflict: Eu-rope, 1870-1914 3 The rise of Europe to world power and the crises of the European or-der. Credit not granted for both Hist 454 and 554.

455 From the Tudor Revolution to the Glori-ous Revolution 3 England in the age of the Protestant Reformation. Credit not granted for both Hist 455 and 555.

459 Modern Britain 3 Britain and the Empire from the Napoleonic wars to the present. Credit not granted for both Hist 459 and 559.

461 Medieval Russia 1147-1700 3 Political, eco-nomic, social, and cultural developments in Russia from the foundation of Moscow (1147) through the accession of Peter I (1700).

462 History of Imperial Russia 3 History and culture of Imperial Russia from Peter the Great to the 1905 revolution. Credit not granted for both Hist 462 and 562.

465 East-Central Europe 3 History, government, and culture of the countries between Germany and the Soviet Union; emphasis on the 20th century. Credit not granted for both Hist 465 and 565.

466 [T] History of the Cold War, 1944-present 3 Prereq completion of one Tier I and three Tier II courses. Exploration of the 50 year ‘cold’ conflict between the U.S. and USSR and its political, social, economic, and cultural consequences for the world.

467 Modern France 3 The history of France from the revolution of 1789 to the present.

468 Hitler and Nazi Germany 3 Origins and rise of Nazism; state, society and culture in the Third Reich; Nazi racial ideology; world war; the Holocaust. Credit not granted for both Hist 468 and 568.

469 [M] Seminar in History 3 May be repeated for credit. Prereg Hist 300.


472 [M] The Middle East Since World War I 3 Developments in the Middle East since World War I, including nationalism, fundamentalism, and revolution. Credit not granted for both Hist 472 and 572.

473 [T] The Middle East and the West 3 Prereq completion of one Tier I and three Tier II courses. To develop an understanding of the east-west tensions in the context of historical relations between the Middle East and West Europe since the rise of Islam.

476 Revolutionary China, 1800 to Present 3 Nature and effects of revolution on China from 1800 to present. Credit not granted for both Hist 476 and 576.

477 Modern Japanese History 3 The development of state and society in Japan from 1800 to present. Credit not granted for both Hist 477 and 577.

480 Methods of Teaching Social Studies 3 Prereq certification; by interview only. Methods, resources, selection of content, past and present issues in social studies education.

483 [T] Technology and Social Change to 1950 3 Prereq completion of one Tier I and three Tier II courses. The emergence of modern technological society with emphasis on the period 1750-1950.

486 [M] United States Foreign Relations 3 Same as Pol S 427.

488 Classical Political Thought 3 Same as Pol S 437.

489 [M] Recent Political Thought 3 Same as Pol S 438.

490 Politics of Developing Nations 3 Same as Pol S 435. Credit not granted for both Hist 490 and 590.

491 [T] History of World Trade 3 Prereq completion of one Tier I and three Tier II courses. The evolution of the institutions, conditions, and consequences of world trade after 1000.

492 [T] Cultural Appetites: Food in World History 3 Prereq completion of one Tier I and three Tier II courses. What food selection and preparation reveals about cultural integration among the world from the medieval era to the present.

493 [T] Space, Place, and Power in History: Historical Geography in Global Perspective 3 Prereq completion of one Tier I and three Tier II courses. Introduction to the discipline of historical geography; geographical and spatial approaches to European, North American, and Asian history.

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

497 Seminar 3 May be repeated for credit; cumulative maximum 6 hours.

498 History Internship V 1-12 May be repeated for credit; cumulative maximum 12 hours. Prereq major or minor in Hist. Participation as intern in public or private sectors. Credit not granted for both Hist 498 and 598.

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

510 Field Course in American History 3 May be repeated for credit. Readings and interpretive problems of American history.

511 American Diplomatic History 1776-1914 3 Graduate-level counterpart of Hist 411; additional requirements. Credit not granted for both Hist 411 and 511.

512 American Diplomatic History in the 20th Century 3 Graduate-level counterpart of Hist 412; additional requirements. Credit not granted for both Hist 412 and 512.

513 Theory and Method in American Studies 3 Same as Engl 513. May be repeated for credit.

515 Jeffersonian-Jacksonian America 3 Graduate-level counterpart of Hist 415; additional requirements. Credit not granted for both Hist 415 and 515.

516 Civil War and Reconstruction 3 Graduate-level counterpart of Hist 416; additional requirements. Credit not granted for both Hist 416 and 516.

517 Rise of Modern America 3 Graduate-level counterpart of Hist 417; additional requirements. Credit not granted for both Hist 417 and 517.

518 United States, 1914-1945 3 Graduate-level counterpart of Hist 418; additional requirements. Credit not granted for both Hist 418 and 518.

519 United States, 1945-Present 3 Graduate-level counterpart of Hist 419; additional requirements. Credit not granted for both Hist 419 and 519.

520 American Constitutional History 3 Graduate-level counterpart of Hist 420; additional requirements. Credit not granted for both Hist 420 and 520.

521 The American West 3 Graduate-level counterpart of Hist 421; additional requirements. Credit not granted for both Hist 421 and 521.

522 History of the Pacific Northwest 3 Graduate-level counterpart of Hist 422; additional requirements. Credit not granted for both Hist 422 and 522.

523 Radicals, Reformers, and Romantics: The Impact 3 Graduate-level counterpart of Hist 423; additional requirements. Credit not granted for both Hist 423 and 523.

525 Seminar in American History 3 May be repeated for credit.

527 Public History: Theory and Methodology 3 Graduate-level counterpart of Hist 427; additional requirements. Credit not granted for both Hist 427 and 527.

528 Seminar in Public History 3 May be repeated for credit; cumulative maximum 6 hours. The development of skills at the graduate level to be used in nontraditional careers for historians.

529 Interpreting History through Material Culture 3 Historical interpretation to work on major historic preservation and museum projects.

530 History of Mexico 3 Prereq graduate standing. Graduate-level counterpart of Hist 430; additional requirements. Credit not granted for both Hist 430 and 530.

532 20th Century Latin America 3 Prereq graduate standing. Graduate-level counterpart of Hist 432; additional requirements. Credit not granted for both Hist 432 and 532.

533 History of Cuba and the Caribbean 3 Prereq graduate standing. Graduate-level counterpart of Hist 433; additional requirements. Credit not granted for both Hist 433 and 533.

534 History of Central America 3 Prereq graduate standing. Graduate-level counterpart of Hist 434; additional requirements. Credit not granted for both Hist 434 and 534.

535 Field Course in Latin American History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in Latin American history.

540 Seminar in European History 3 May be repeated for credit.

547 Europe in the French Revolutionary and Napoleonic Era, 1789 to 1815 3 Graduate-level counterpart of Hist 447; additional requirements. Credit not granted for both Hist 447 and 547.

549 Europe and Two World Wars, 1914-1945 3 Graduate-level counterpart of Hist 449; additional requirements. Credit not granted for both Hist 449 and 549.

550 Europe Since 1945 3 Graduate-level counterpart of Hist 450; additional requirements. Credit not granted for both Hist 450 and 550.

553 Conservatism, Liberalism, and Socialism: Europe, 1815-1870 3 Graduate-level counterpart of Hist 453; additional requirements. Credit not granted for both Hist 453 and 553.

554 Nationalism and National Conflict: Europe, 1870-1914 3 Graduate-level counterpart of Hist 454; additional requirements. Credit not granted for both Hist 454 and 554.

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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>562</td>
<td>History of Imperial Russia</td>
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<td>563</td>
<td>History of the Soviet Union</td>
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<td>565</td>
<td>East-Central Europe</td>
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<td>567</td>
<td>Modern France</td>
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<td>568</td>
<td>Hitler and Nazi Germany</td>
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<td>569</td>
<td>Field Course in Modern European History</td>
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<td>570</td>
<td>Field Course in Comparative History</td>
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<td>571</td>
<td>Topics in World History</td>
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<td>572</td>
<td>Middle East Since World War I</td>
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<td>573</td>
<td>Field Course in Women's History</td>
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<td>574</td>
<td>Revolutionary China, 1800 to Present</td>
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<td>575</td>
<td>Field Course in Asian History</td>
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<td>580</td>
<td>Historiography</td>
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<td>581</td>
<td>American Historiography</td>
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<tr>
<td>590</td>
<td>Politics of Developing Nations</td>
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<td>595</td>
<td>The Teaching of History in College V 1 or 2</td>
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<td>596</td>
<td>Topics in American Studies</td>
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<td>597</td>
<td>Seminar in History 2 or 3</td>
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<td>598</td>
<td>History Internship V 1-12</td>
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<td>600</td>
<td>Special Projects or Independent Study</td>
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<td>700</td>
<td>Master's Research, Thesis, and/or Examination</td>
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<tr>
<td>702</td>
<td>Master's Special Problems, Directed Study, and/or Examination</td>
</tr>
<tr>
<td>800</td>
<td>Doctoral Research, Dissertation, and/or Examination</td>
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</tbody>
</table>

**Honors College**

M. F. Wack, Dean.

The mission of the Honors College is to offer students of high ability and initiative an enriched, four-year core curriculum that satisfies university graduation requirements. 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.

Students who are not admitted to the University Honors College as incoming first year students may apply at the end of their first semester. For continued enrollment in the University Honors College, students must maintain an overall B+ average (3.2). Students in the UHC are not required to complete the General Education Requirements for graduation. Students who satisfactorily complete all UHC requirements and a cumulative grade point average of 3.2 will receive a University Honors Certificate of Completion provided they have completed a minimum of 14 graded credits of honors courses taken in residence.

The mathematics requirement for students in the University Honors College can be met in a number of ways (see footnote 1). Courses offered through the University Honors College are only open to students enrolled in the program.

**Honors College Requirements**

A bachelor's degree earned through the University Honors College requires approximately the same number of total semester hours as required by the General Education Program. To see how the Honors curriculum fits into any major or degree program at WSU, please consult WSU's online catalog at [www.registrar.wsu.edu/](http://www.registrar.wsu.edu/).

The University Honors College regards fluency in another language as an important skill of an educated individual and encourages all students to undertake the study of a foreign language. The UHC accommodates students, other than foreign language majors, who wish to pursue foreign languages by allowing them to alter slightly their Honors requirements. Those students who complete the equivalent of four semesters of a single foreign language at WSU will complete two social science classes instead of three. All students other than foreign language majors who pursue study of a foreign language beyond the fourth semester, and all students who study abroad, will be recognized at the UHC graduation with a University Honors College Certificate of Completion with International Emphasis. This option is available under special circumstances to foreign language majors who must petition the program for special consideration.

University Honors College students are required to complete the courses specified in the following schedule of studies. 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**

- Math requirement
- Freshman or Sophomore Year
  - Choose three:
    - Anth 198, CAC 198, Econ 198, Hist 198, Pol S 198, Psych 198, Soc 198
  - Both required for non-science majors:
    - Biol 298 (spring only)
    - Ph S 298 (fall only)
- Sophomore or Junior Year
  - Choose one:
    - U H 300, Hum 198, Phil 198
- 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 or U H 410 Domain of the Sciences

**Timing Optional with Student:**

Optional: U H 430 (Education Abroad Practicum and Research)

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1 Students who qualify for Calculus II (Math 172) on the basis of the math placement test receive credit for
Math 171 and thereby fulfill this requirement. Other students take the math required by their major. Honors accept: Math 140, 171, 202, 205, 206, 210, 212, and 251 and 252 combined. For any questions concerning the math requirement, check with a University Honors College advisor.

Science majors taking biological science and physical science laboratory courses for their majors fulfill this requirement with those courses.

Three credits required except for some majors which require 2 credits and 1 credit of departmental 499. Please check with an Honors advisor.

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 Chemical Principles Honors II 4 (3-3)
Econ 198 Economics Honors 3
Eng 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 3 (3-4)
Phys 206 Physics Honors II S 3 (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.

300 (260) Honors Seminar 2 May be repeated for credit; cumulative maximum 6 hours. 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.

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. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

451 Honors Interdisciplinary Thesis/Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. In-depth reading and writing project based upon original research and work supervised by faculty members from two or more departments. S, F grading. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

452 Honors Community Service 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. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

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. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

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. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

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. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

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. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

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

Department of Horticulture

Horticulture

Courses in horticulture are designed to give instruction in enology and viticulture, fruit, vegetable, and ornamental production, handling, utilization, and management. Emphasis is on developing an understanding of plant growth and development fundamental to crop management. A production and management emphasis is designed to prepare students to be professionals in production, handling and processing, marketing, consulting, government, management, 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 physics.

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 degrees of Bachelor of Science in Horticulture, Bachelor of Landscape Architecture, Master of Science in Horticulture, Master of Science in Landscape Architecture, and Doctor of Philosophy.

Schedule of Studies

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.

Students in horticulture may focus on environmen-
tal horticulture, fruits and vegetables, or tree fruit management.
At least 40 of the total hours required for the bachelor’s degree in these programs must be in 300-
400-level courses.

ENVIRONMENTAL HORTICULTURE
REQUIREMENTS
(133 HOURS)  

Freshman Year
First Semester
Arts & Humanities [H, G] (GER) 3
Biol 120 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Eng 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Second Semester
Chem 102 [P] or 106 [P] (GER) 4
ComSt 102 [C] or H D 205 [C] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Hort 201 4
L A 264 3

Sophomore Year
First Semester
Chem 240 or 340 3 or 4
Hort 231 3
Hort 334 3
Intercultural [I, G, K] (GER) 3
Soils 201 3
Second Semester
Ag Ec 201 [S] or Econ 102 [S] (GER) 3
Arts & Humanities [H, G] or Social Sciences [S, K] (GER) 3
Hort 232 3
Hort 251 4
Math Proficiency [N] (GER) 3
Summer Session—Hort 399 3

Junior Year
First Semester
Business’ or Science Emphasis1 6
Biol 320 4
Hort 331 3
Hort 356 1
PL P 429 3
Complete Writing Portfolio
Second Semester
Business’ or Science Emphasis1 6
Cpt S Elective 3 or 4
Entom 340 3
Soils 441 3
Senior Year
First Semester
Business’ or Science Emphasis1 3
Hort 310 or 313 3
Hort 320 3
Hort 321 1
Hort 418 [M] 3
Hort 438 3
Second Semester
Business’ or Science Emphasis1 3
Hort 416 3
Hort 425 [M] 3
Hort 439 3
IPM Elective 2 or 3
Tier III Course [T] (GER) 3

1 Business emphasis—Acctg 230 and 6 additional credits in Agricultural Economics and/or Business
Administration are required.
2 Science emphasis—Chem 105, 106, 340, and 342;
MBioS 150 or 301; MBioS 303; and Stat 412 or Math
171 are required.

FRUIT AND VEGETABLE HORTICULTURE
REQUIREMENTS
(121 HOURS)  

Freshman Year
First Semester
Biol 120 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Second Semester
Chem 102 [P] or 106 [P] (GER) 4
ComSt 102 [C] or H D 205 [C] (GER) 3
Cpt S Elective
GenEd 111 [A] (GER) 3
Hort 201 4

Sophomore Year
First Semester
Arts & Humanities [H, G] (GER) 3
Chem 240 4
Hort 334 3
Hort 310 & 311; 313; or 320 & 321 3 or 4
Soils 201 3
Second Semester
Ag Ec 201 [S] or Econ 102 [S] (GER) 3
Arts & Humanities [H, G] or Social Science [S, K] (GER) 3
Biol 320 4
Hort 251 4
Math Proficiency [N] (GER) 3

Junior Year
First Semester
Hort 310 & 311; 313; or 320 & 321 3 or 4
Hort 356 1
Hort Elective
Intercultural [I, G, K] (GER) 3
PL P 429 3
Complete Writing Portfolio
Second Semester
Biol 150 or MBioS 301 3
Entom 340 3
Environmental Hort Elective
Soils 441 3
Elective 3
Summer Session—Hort 399 3

Senior Year
First Semester
Hort 418 [M] 3
Hort 310 & 311; 313; or 320 & 321 3 or 4
Tier III Course [T] (GER) 3
Elective 3
Second Semester
Hort 416 3
Hort 425 [M] 3
IPM Elective 2 or 3
Hort 425 [M] 3
Electives 6

TREE FRUIT MANAGEMENT
REQUIREMENTS
The Tree Fruit Management option in the Horticulture B.S. degree is an integrated, cooperative program be-
tween 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 pro-
duction and management through courses, orchard practicum experiences and internships. Wenatchee Val-
ley 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 ei-
ther Washington State University Pullman, or at the
WSU Wenatchee Learning Center, with support of
the Tree Fruit Research and Extension Center. In
both locations, courses, laboratories and research expe-
rience provide students with an advanced knowledge of
the science, technology and management of tree fruit
production systems. Additional courses are taken to in-
crease the breadth of knowledge about the diversity of
horticultural crops and awareness of current issues in
horticultural science. The courses offered at the
Wenatchee Learning Center are taught via distance
delivery technologies.

Freshman Year (Wenatchee Valley College)

Fall Quarter
Agri 153 4
Agri 161 5
Chem 110 (WSU [P] GER) 5
Engl 101 (WSU [P] GER) 5

Winter Quarter
Agri 152 4
Agri 162 5
Biol 122 (WSU [B] GER) 5
CIS 115 5

Spring Quarter
Agri 154 2
Agri 163 5
Chem 111 (WSU [P] GER) 5
Math 201 (WSU [N] GER) 5

Summer Quarter
Agri 115 5
Agri 155 2

Sophomore Year (Wenatchee Valley
College)

Fall Quarter
Agri 242 4
Agri 264 5
Agri 292 4
Spch 220 (WSU [C] GER) 5

Winter Quarter
Agri 218 4
Agri 265 5
Econ 202 (WSU [S] GER) 5
Foreign Language Elective 5
### Spring Quarter
- **Agri 243** 4
- **Agri 266** 5
- **Agri 292** 4
- **Spch 220 (WSU [C] GER)** 5

### Summer Quarter
- **Agri 267** 5
- **Agri 292** 4
- **Foreign Language Elective** 5

### Junior Year (Washington State University)

#### Fall Semester
- **Chem 240** 4
- **GenEd 110 [A] (GER)** 3
- **Hort 499** 4
- **Hort Elective** 3 or 4
- **Complete Writing Portfolio**

#### Spring Semester
- **Arts & Humanities [H,G] (GER)** 3
- **Biol 150 or MBioS 301** 3 or 4
- **GenEd 111 [A] (GER)** 3
- **Hort 251** 4
- **Intercultural [I,G,K] (GER)** 3

#### Senior Year (Washington State University)

#### Fall Semester
- **Biol 320** 4
- **Hort 356** 1
- **Hort AG Elective** 3 or 4
- **Mgt Elective** 3
- **Social Sciences [S,K] (GER)** 3

#### Second Semester
- **Hort 416** 3
- **Hort 421 [M]** 3
- **Hort 425 [M]** 3
- **SoilS 441** 3
- **Tier III Course [T] (GER)** 3

### VITICULTURE AND ENOLOGY REQUIREMENTS

(123 HOURS) [FYDA]

#### Freshman Year

#### First Semester
- **Biol 120 [B] (GER)** 4
- **Chem 101 [P] or 105 [P] (GER)** 4
- **Engl 101 [W] (GER)** 3
- **GenEd 110 [A] or 111 [A] (GER)** 3

#### Second Semester
- **Chem 102 [P] or 106 [P] (GER)** 4
- **ComSt 102 [C] or H D 205 [C] (GER)** 3
- **Cpt S Elective**
- **GenEd 110 [A] or 111 [A] (GER)** 3
- **Hort 201** 4

#### Sophomore Year

#### First Semester
- **Arts & Humanities [H,G] (GER)** 3
- **Chem 240** 4
- **Hort 234** 3
- **Hort 313** 3
- **SoilS 201** 3

#### Second Semester

### Junior Year

#### First Semester
- **First Semester**
  - **Hours**
  - **First Semester**
  - **Hort 356** 1
  - **Intercultural [L,G,K] (GER)** 3
  - **MBioS 303** 3
  - **Pl P 429** 3

#### Second Semester
- **Entom 340** 3
- **FHSN 465 or Hort 435** 3
- **Hort 413** 3
- **Hort Elective [T] (GER)** 3
- **Elective** 3

### Senior Year

#### First Semester
- **FHSN 495** 2
- **Hort 418 [M]** 3
- **Hort Elective** 3
- **Tier III Course [T] (GER)** 3
- **Elective** 3

#### Second Semester
- **FHSN 465 or Hort 435** 3
- **Hort 409** 1
- **Hort 416** 3
- **Hort 425 [M]** 3
- **Elective** 3

### Minor in Horticulture

A minimum of 16 hours in Hort is required, of which at least 8 hours must be in 300-400-level courses excluding Hort 356, 399, and 499. Hort 201 and 334 or 251 are required. All pass, fail enrollments must be approved by the department chair.

### Preparation for Graduate Study

Students who are pursuing undergraduate majors in the plant sciences, including horticulture, crop science, plant pathology, environmental science, genetics, plant physiology and biochemistry may be well prepared for graduate study in horticulture.

Undergraduate students who are pursuing studies at other institutions, or through other curricula at this institution, and who contemplate graduate work in horticulture should take as many courses in the basic physical and biological sciences as possible.

### Landscape Architecture

Landscape architecture is the professional art and science of planning and designing land elements so that the activities of people are in harmony with their environment. The practice ranges in scale from the design of residential and garden landscapes to planning and design of complex projects such as cities and regions.

The curriculum is accredited by the American Society of Landscape Architects (ASLA). It stresses a broadly based course of study emphasizing residential, community, and urban design; site, regional and land use planning, and professional practice methods.

The curriculum is divided into two parts: pre-landscape architecture and landscape architecture. The opportunity exists to participate in special studies, professional work experiences and foreign study.

### Schedule of Studies

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 the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

### Pre-Landscape Architecture

Pre-landscape 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 advisor. 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.

### Freshman Year

#### First Semester
- **Arts & Humanities [H,G] or Social Sciences [S,K] (GER)** 3
- **Biol 120 [B] (GER)** 4
- **Engl 101 [W] (GER)** 3
- **GenEd 110 [A] (GER)** 3
- **Math Proficiency [N] (GER)** 3

#### Second Semester
- **Chem 101 [P] (GER)** 4
- **Communication [C,W] (GER)** 3
- **FA 101 [H], 201 [H], or 202 [H] (GER)** 3
- **GenEd 111 [A] (GER)** 3
- **L A 202** 3

### Sophomore Year

#### First Semester
- **Hort 231** 3
- **Intercultural [L,G,K] (GER)** 3
- **L A 101** 3
- **L A 260** 3
- **L A 262** 3

#### Second Semester
- **Graphics Elective** 3
- **Hort 232** 3
- **L A 102** 3
- **L A 263** 3
LANDSCAPE ARCHITECTURE REQUIREMENTS
(154 HOURS) \(\forall\) FYDA (5-YEAR AGREEMENT)

The professional five-year course of study is divided into two segments. These are pre-landscape architecture (listed above) and the third- through fifth-year professional landscape architecture program (BLA). Completion of the five-year program totaling 154 credits leads to the degree of Bachelor of Landscape Architecture and allows the graduate to enter the profession. At least three additional years of professional experience and successful completion of the landscape architectural license examination are necessary for registration as a licensed landscape architect in most states.

To be admitted to the major of L.A., the student should have completed the pre-LA curriculum and submitted an application. Application forms and instructions are available from the Admissions Office and the Department of Horticulture and Landscape Architecture Office. Applications to the professional program must be submitted prior to April 1. Due to limitations of space, faculty, and budget, admission can be granted to only the most qualified students based on experience, demonstrated abilities, motivation, and academic performance. The following courses (or approved equivalents) must be completed with a grade of C or better for students to be admitted an application. Application forms and instructions are available from the Admissions Office and the Department of Horticulture and Landscape Architecture Office.

Junior Year

First Semester
L.A. 485 4
L.A. 462 3
L.A. 362 4
L.A. 366 4
SoilS 201 [B] (GER) 3
Complete Writing Portfolio 1

Second Semester
AgFM 346 3
Social Sciences [S, K] (GER) 3
L.A. 363 4
L.A. 367 3
SoilS 374 3

Fourth Year

First Semester
L.A. 425 3
L.A. 450 [M] 3
L.A. 460 5
L.A. 480 2
Electives 1 3

Second Semester
L.A. 467 4
L.A. 470 4
L.A. 475 2
Social Sciences [S, K] (GER) 3
Elective 1 3

Senior Year

First Semester
L.A. 485 4
Electives 1 9

Second Semester
L.A. 486 [M] 4
Tier III Course [T] (GER) 3
Electives 1 6

1 Students will select two specialization options of 9 credits each from the following: Business, Horticulture/Plant Science, Natural Resources/Ecology, Urban Design, Public Policy/Planning, Computer Applications, Self-Directed.

Description of Courses

Horticulture

Hort 101 Horticulture and Society 3 (2-3) Principles and practices of gardening for personal, economic, environmental and social benefits; 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 Biol 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 Biol 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 Biol 120 or Hort 201. Continuation of Hort 231.

251 Plant Propagation 4 (2-6) Prereq Biol 103, 120, or Hort 101, or 201. Principles and methods of multiplying herbaceous and woody plants and their handling up to useable size. Field trip required.

304 Growth and Development of Crop Plants I 2 Prereq Biol 104 or 120. Understanding anatomical structure of plants, internal 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 304.

310 Pomology 3 Prereq biological or plant science course. Science and management of deciduous tree-fruit production. Cooperative course taught by WSU, open to UI students (PlSc 461).

311 Pomology Laboratory 1 (0-3) Prereq Hort I or Hort 310. Cultural practices in deciduous tree-fruit production. Field trip required.

313 Viticulture and Small Fruits 3 Prereq biological science, botany, 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 1 Same as CropS 317.

319 Introductory Plant Physiology Laboratory 1 (0-3) Same as Biol 319.

320 Olericulture 3 Prereq Hort 201 or plant science course; SoilS 201. Science, business, and art of vegetable crop production: culture, fertility, growth, physiology, handling, marketing; garden, commercial, greenhouse, tropical, specialty vegetables. Cooperative course taught by WSU, open to UI students (PlSc 320).

321 Olericulture Laboratory 1 (0-3) Prereq c// in Hort 320. Production principles and practices of vegetable crops; plant characteristics, cultivars, nutrition, growth, and development. Field trip required. Cooperative course taught by WSU, open to UI students (PlSc 321).

325 Plant Biotechnology 3 Same as Biol 325.

331 Landscape Plant Installation and Management 3 (2-3) Prereq Hort 231, 232. Principles and practices for installation and management of interior and exterior landscapes; specifications, site preparation transplanting, growth control, problem diagnosis.

332 Interior Plantscaping 2 Prereq biological or plant science course or by permission. Design, selection, installation, management, and maintenance of plants within buildings; effects of interior plants on people and the environment.

333 Interior Plantscaping Laboratory 1 (0-3) Prereq c// in Hort 332. Identification, cultural requirements, and pest problems of common interior plants; integration of business practices with design and maintenance considerations. Field trip required.

334 Controlled Environments for Horticultural Production 3 Prereq Hort 201. Principles and practices for modifying environmental factors for horticultural production in controlled environments; methods for environmental measurements. Field trip required. Cooperative course taught by WSU, open to UI students (PlSc 234).

340 Nursery Management 3 (2-3) Management of commercial nurseries from plant propagation through sale of plants. Field trip required. Cooperative course taught by UI (PlSc 340), open to WSU students.

356 Preparation for Entering the Horticulture Profession 1 Prereq junior in Hort. Resume writing; job applications; interviewing; investigation of job opportunities; contact with employers; internship reports; practice in oral communication.

399 Professional Work Experience V 1-4 May be repeated for credit, cumulative maximum 8 hours. Prereq basic horticulture. By interview only. Planned and supervised work experience. S, F grading.

405 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Prereq Biol 320, MBioS 301, 303. Genetic, molecular, cellular and evolutionary aspects of plant reproductive strategies and their manipulations. Credit not granted for both Hort 405 and 505.

409 Seminar in Viticulture and Enology 1 Current topics and recent developments in the field of viticulture and enology.

413 Advanced Viticulture 3 Prereq Biol 120, Hort 313, or equivalent. Wine and juice grape production in eastern Washington; wine and fruit physiology, climate and soils, and fruit quality.
416 Advanced Horticultural Crop Physiology 3 (2-3) Prereq Biol 320. Physiological processes related to growth, development, and productivity of horticultural crops; advances in recombinant DNA technology; the impact on horticultural practices. Credit not granted for both Hort 416 and 518.


418 [M] Post-harvest Biology and Technology 3 (2-3) Prereq Hort 201; Biol 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 UI (PlSc 418). Credit not granted for both Hort 418 and 518.

420 Potato Physiology and Production Technology 2 (1-3) Prereq Biol 320. Plant and tuber physiology; physical, chemical, physiological and technological 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 (PlSc 420).

421 [M] Fruit Crops Management 3 Prereq woozy horticultural crop production, a plant physiology course. Management strategies for optimizing the productivity and resource utilization efficiency of woody fruit tree, vine, and ornamental crops. Credit not granted for both Hort 421 and 521.

425 [M] Future World Trends and Horticultural Impact 3 Prereq junior standing. Use scientific, business, government, and popular information to explore world trends; evaluate information; investigate impact of major trends in horticulture.

433 Chemistry and Biochemistry of Fruit and Wine 3 Prereq Biol 320; MBioS 302, 303; Analytical Chem. rec. Study of the chemistry and biochemistry of fruits. Biochemistry and physiology of individual fruit compounds, aspects of processing including winemaking. Credit not granted for both Hort 433 and 535.

438 Ornamental Plant Production I 3 (2-3) Prereq Hort 234. Fall and winter production practices of greenhouse and nursery crops. Field trip required. Cooperative course taught by WSU, open to UI students (PlSc 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 (PlSc 431).

444 Plant Breeding I 2 Same as CropS 444.

445 Plant Breeding II 2 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 (PlSc 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 Biol 320. Current topics and research techniques in horticulture.

505 Genetic and Molecular Aspects of Plant Reproduction 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.

513 Advanced Viticulture 3 Graduate-level counterpart of Hort 413; additional requirements. Credit not granted for both Hort 413 and 513.

515 Seminar in Plant Physiology 1 May be repeated for credit; cumulative maximum 4. A cross-discipline seminar, including botany, crop and soil sciences, horticulture, plant pathology, and plant physiology.

516 Advanced Horticultural Crop Physiology 3 Graduate-level counterpart of Hort 416; additional requirements. Credit not granted for both Hort 416 and 516.

518 Post-Harvest Biology and Technology 3 (2-3) Prereq graduate standing. Graduate-level counterpart of Hort 418; additional requirements. Credit not granted for both Hort 418 and 518. Cooperative course taught by WSU, open to UI students. Cooperative course taught by WSU, open to UI students (PlSc 518).

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).

535 Chemistry and Biochemistry of Fruit and Wine 3 Graduate-level counterpart of Hort 435; additional requirements. Credit not granted for both Hort 435 and 535.

538 Ornamental Plant Production I 3 (2-3) Graduate-level counterpart of Hort 438; additional requirements. Credit not granted for both Hort 438 and 538. Cooperative course taught by WSU, open to UI students (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 MBioS 530.

590 Potato Science 3 Graduate-level counterpart of Hort 490; additional requirements. Credit not granted for both Hort 490 and 590. Cooperative course taught by UI (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, LandCAD, Photoshop, to gain 2- and 3-D design, analysis, drafting, rendering, and web format skills.

**202 [HI] 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 (L Acr 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 L A 262. Basic design and graphic techniques related to solving of elementary design problems.

**264 Basic Landscape Design 3** For nonmajors. Design theory and principles; site design factors; design process application; construction criteria; graphic construction communication; landform; circulation systems; plant uses.
299 Professional Work Experience: Contracting and Maintenance 1 or 2 Prereq major in pre-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 planning 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, 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, landmark 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 L 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 architectural 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 (L A 358).

485 [M] Senior Creative Project I 4 (0-8) Prereq L A 425. Individually developed studio or scholarly project conducted with faculty advisor; collection, analysis, and interpretation of project information.

486 [M] Senior Creative Project II 4 (0-8) Prereq L A 485. Individually developed studio or scholarly project conducted with faculty advisor; synthesis of information, solution development, and documentation.

491 Topics in Design 3 Prereq 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 I 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.

School of Hospitality Business Management

Director, W. T. Umbreit; Taco Bell Distinguished Professor, W. Maynard; Ivar Haglund Distinguished Professor, D. Rutherford; Associate Professors, K. Kendall, M. C. Paxson, M. Stewart; Assistant Professors, J. Antonakis, D. Gursuy, H. J. Kim, N. Swanger, Interim Director Swiss Center, M. Vieregge; Culinary Educator, G. Fritz; Director External Relations and Placement, A. Luoma; Lecturer, M. O’Fallon; Professors Emeriti, P. Diaz, L. Kreck, D. Smith.

The school provides instruction at WSU Pullman and also to qualified transfer students in Brig, Switzerland. It provides specialized study of the major organizational and administrative problems of the hotel and restaurant industry. The school prepares 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 (PreHA) 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 Arch 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 g.p.a. in the major.

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.

Schedule of Studies

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 GES requirements in another area, such as in the humanities, social sciences, or the Tier III course. Students complete Honors Requirements in place of GERS. All students majoring in hotel and restaurant administration must see their advisor 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 or 205; 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, or hotel courses must be taken in residence at WSU; and 3) The last 30 hours of course work must be taken at WSU.

The director of the school 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 REQUIREMENTS (120 HOURS) ❖FYDA

**Freshman Year**

**First Semester**
- Econ 101 or 102 [S] [S] (GER) 3
- Engl 101 [W] (GER) 3
- FSHN 120 3
- GenEd 110 [A] (GER) 3
- H A 181 3

**Second Semester**
- Econ 101 or 102 [S] [S] (GER) 3
- H A 182 3
- Oral Com [C] (GER) 3
- Math 201 3
- MIS 250 3
- Tier I Science [Q] (GER) 3

**Sophomore Year**

**First Semester**
- Acctg 230 3
- Biological Sciences [B] (GER) 3 or 4
- GenEd 111 [A] (GER) 3
- H A 258 or 280 2 or 3
- Math 202 [N] or 205 [N] (GER) 3

**Second Semester**
- Acctg 231 3
- Arts & Humanities [H,G] (GER) 3
- B Law 210 3
- Dec S 215 4
- H A 258 or 280 2 or 3

**Junior Year**

**First Semester**
- Engl 402 [W] or 403 [W] (GER) 3
- Fin 325 3
- H A 358 3
- H A Elective 3
- Mgt 301 3
- or Semester Abroad In Switzerland

**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 (RcMgt/Rec 181).

182 **Introduction to Industry Experience** 1 Preparation for work in hospitality/business organizations; resume writing, interview skills, use of Career Services, career dress.

201 **Quantity Food Production** 3 Principles of menu writing, sanitation and food preparation applied to management of quantity food production and service.

235 **Principles of Tourism** 3 Underlying principles and practices in domestic tourism. Cooperative course taught by WSU, open to UI students (RcMgt/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.

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

280 **Lodging Systems and Procedures** 3 Management functions relating to the planning and operational policies of various hotel departments.

284 **Managed Services** 3 Management systems of the segment of the hospitality industry relating to contract and self-operated management companies.

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 performance must be documented. Two supervised reports required. S, F grading.

350 **Beverage Management** 3 Prereq junior standing; must be 21 years of age. Beverage operations; detailed study of wines and spirits; consideration of social impacts such as trends in consumption.

356 **Food and Beverage Systems Design and Analysis** 3 Prereq FSHN 120; 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 S 105. Problems encountered in the management of food and beverage operations such as control and forecasting.

358 **Foodservice Systems and Control** 3 Prereq Acctg 230, FSHN 120, H A 258, 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.

381 [M] Hospitality Management and Organization 3 Prereq H A 181. Advanced management methods and concepts utilized in the administration of hospitality service industries. Cooperative course taught by WSU; open to UI students (RRT 381/Rec 382).

382 Multi-Unit Management 3 Prereq 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 tourism; effects 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, setting, 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.

480 [M] Marketing Strategy and Development 3 Prereq Mktg 305. Theory and practice; problems in guest relations, special sales efforts, intramuscular promotion, research.

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

491 Operational Analysis 3 Prereq Acctg 231; Dec S 215; Fin 325. Using management tools in analyzing operational effectiveness of hotel and restaurant organizations.

493 Service Applications in E-Commerce 3 Prereq junior standing. Design and management of the service delivery processes in e-commerce businesses.

494 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 educational internship with a business, government or nonprofit organization. S, F grading.

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

535 International Tourism Strategy and Planning 3 Tourism components; social, economic, and cultural effects on societies; the management of tourism businesses.

580 Hospitality Services Marketing 3 Prereq Mktg 505. Services marketing concepts and principles applied to hospitality organizations; strategies to market services and control quality.

581 Services Management 3 Prereq 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 sciences teacher in junior high or senior high school.

In addition to the teaching certifications, the department offers four specialty areas: early childhood, adolescence, aging, and family studies. Students choosing these specializations are prepared to work in a wide range of careers working with children, adolescents, older adults, and/or families in a variety of professional settings. These may include positions in foster parent programs, adoption agencies, childcare or Head Start programs, teens, juvenile justice programs, nursing homes or other community-based programs for the elderly, and family services agencies. Students completing a human development degree are required to complete a certified minor or approved certificate of study in another department. A minor or certificate of study should be selected in consultation with a human development faculty advisor, preferably by the end of the third semester. The Bachelor of Arts degree in Human Development requires a cumulative G.P.A. of 2.5 or better in all HD courses and other courses accepted for the HD 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.

The human development degree provides preparation for graduate work leading to teaching, research, counseling, or administrative positions in social service, resource management, or family therapy.

The department also offers a Master of Arts degree in Human Development. Areas of focus are early childhood, parent-child relations, youth-at-risk, applied developmental science, and community collaborative research. This degree prepares graduates for leadership positions in human service professions, entrance to doctoral programs, and research/teaching careers in higher education. More information is available from the graduate school.

The outline below describes a course of study leading to a degree of Bachelor of Arts in Human Development.

Additionally, two minors are offered; one in general human development and one in early childhood (see description below).

Schedule of Studies

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 REQUIREMENTS (120 HOURS) ☑ FYDA

Freshman Year

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<tr>
<th>Course</th>
<th>Hours</th>
<th>Notes</th>
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<tr>
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<td>Engl 101 [W] (GER)</td>
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<td></td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
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<td></td>
</tr>
<tr>
<td>Social Sciences [S, K] (GER)</td>
<td>3</td>
<td></td>
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<tr>
<td>Science [B, P, Q] (GER)</td>
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Second Semester

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<tr>
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Sophomore Year

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<td>H D Elective</td>
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<td>Intercultural [L, G, K] (GER)</td>
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Math Proficiency [N] (GER) 3

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<td>H D 310</td>
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<td>Minor Elective</td>
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<td>Physical [P] Sciences (GER) 3 or 4</td>
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**Junior Year**

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**Senior Year**

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<td>H D 446</td>
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**Freshman Year**

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<td>Physical Sciences [P] (GER)</td>
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<td>Psych 105 [S] (GER)</td>
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**Sophomore Year**

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<td>Engl 201 [W], 301 [W], 302 [W] (GER)</td>
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**Junior Year**

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<td>AMT Elective</td>
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<td>H D 350</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 [I,G,K] (GER)</td>
<td>3</td>
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<td>T &amp; L 400</td>
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**Senior Year**

<table>
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<tr>
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<tbody>
<tr>
<td>H D 320</td>
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<tr>
<td>H D 410</td>
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<tr>
<td>T &amp; L 328</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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<tr>
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<td>T &amp; L 415</td>
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2. FSHN 130 [B] is strongly recommended.
3. Courses are only offered during this semester each year.
4. A minor must be decided at the end of the third semester.
5. H D 446 requires a half-day each day, 5 days a week.
6. The internship course (H D 498) can be taken during the summer semester of the junior or senior year.
7. 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 advisor to obtain the list of approved courses.

**FAMILY AND CONSUMER SCIENCES REQUIREMENTS**

2. FSHN 130 [B] is strongly recommended.
3. Courses are only offered during this semester each year.
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 REQUIREMENTS**

135 HOURS

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<td>H D 201</td>
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<td>Psych 105 [S] (GER)</td>
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<td>Science [B, P, Q] (GER)</td>
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<tbody>
<tr>
<td>ComSt 102 [C] (GER)</td>
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<td>Hist 150 [S,D] (GER)</td>
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<tbody>
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<td>Mus 388</td>
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<td>T &amp; L 305</td>
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<td>T &amp; L 306</td>
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<tr>
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<td>T &amp; L 371</td>
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Directed Teaching
T & L 415

1 FSHN 130 [B] is strongly recommended.
2 Engl 201, H D 341, 342, Math 251, two science GERs with a C or better, ComSt 102, and T & L 300 must be completed prior to application for admission to the teacher certification program.
3 During the freshman year, students must pass the Mus 388 competency exam or take Mus 153, qualify to enroll in Math 251, and begin the University Writing Portfolio.
4 H D 446 requires a half-day each day, 5 days a week for a semester and can be put into the schedule any time after taking H D 342.

Minor in General Human Development
To minor in Human Development, students may select a developmental or a family focus. The minor requires 18 hours, 9 of which must be in 300-400-level courses. The minor in Human Development requires H D 101; H D 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 201, 202, 302, 341, 342, 449, and 482. Completion of this set of courses also provides a supporting endorsement in early childhood education for students completing a major in elementary education.

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.

275 Special Topics in Human Development: Study Abroad V 1-6 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

300 Child Abuse and Neglect 3 Prereq 6 hours in Anth, 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 Anth, H D, Psych, or Soc. Examination of the nature and course of family crisis, using a family systems approach, including principles used in intervention strategies.

302 [M] Parent-Child Relationships 3 Prereq 6 hours in Anth, 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 Anth, 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 Anth, 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 Anth, 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 3 (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, Psych, or Soc. Understanding development in middle childhood (approximately 5-12 years); understanding and planning school age care programs.

350 [S,D] Diversity in Contemporary Families 3 Prereq 6 hours 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 Anth, H D, Psych, or Soc. Death and dying through 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 Anth, 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 Student Teaching for Family and Consumer Sciences V 4-16 Prereq may be c// T & L 415; make application and pay certification fees; complete all other coursework for degree and teacher certificate; receive fingerprinting clearance from Washington State Patrol, FBI, and Office of Professional Practices; maintain 2.5 g.p.a. overall and in endorsement area and professional core courses. Placement by interview only. Supervised teaching in public schools, including seminars reflecting on effective teaching. S, F grading.

408 Advanced Adolescent Development 3 Prereq 6 hours 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, group dynamics, supervision, leadership, ethical behavior, cultural sensitivity, and others.

446 Practicum in Early Childhood Programs V 3 (0-9) to 6 (0-18) May be repeated for credit; cumulative maximum 12 hours. Prereq H D 341, 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.

486 Special Topics in Human Development: Study Abroad V 1-15 May be repeated for credit; cumulative maximum 15 hours. Prereq 6 hours in Anth, H D, Psych, or Soc. 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 counter-part 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/. Application 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.

530 Management of Human Service Programs 3 Prereq graduate standing. Examines organizations, administration, management, and evaluation of human service programs from theoretical and applied perspectives.

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 534), 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 Parent-Child Relationships 3 The reciprocal interactions among family members will be examined; theoretical perspectives and empirical findings will be explored in terms of implications for education and practice.

560 Seminar in Child Development 3 Prereq graduate standing. Survey of literature on selected areas in child development; discussion of research and application related to current issues and trends.

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 1-5 May be repeated for credit; cumulative maximum 6 hours. Prereq senior standing. Supervised instructional practicum for departmental majors. S, F grading.

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.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.
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 advisors.

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.

Interdisciplinary University Courses

350 Sacred Texts and Cultures of World Religions 3 Sacred and literary texts, spiritual practices, and cultural origins and values of six world religious traditions from an intercultural perspective.

410 [T] Love in the Arts 3 Prereq completion of one Tier I and three Tier II courses; one college-level literature or art history course. Concepts of love around the world and in history through literature, art, music, dance, and theater.

499 Special Problems 3 V 1-4 May be repeated for credit. S, F grading.

Program in Materials Science

Materials Science

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. Materials science is an interdisciplinary program and this feature is emphasized in the research activities.

Requirements for the Materials Science PhD include a minimum of 72 credit hours of which at least 34 hours are graded course work. The common ground for all participants in materials science is covered by the core of courses (16 credits) required of all students. The core provides a general overview to the field as well as advanced courses in thermodynamics, solid state physics, applied mathematics, and materials characterization. All students must attend the materials science seminar series, which provides an opportunity to find out the current research activities in the program and associated departments. After completion of the core of courses, students then select additional courses (a minimum of 18 credit hours) in areas that are applicable to their research program. These courses can come from any area of physical science, engineering, and mathematics.

All students complete an original research dissertation (Mat 800). After admission to candidacy for the degree, students select a research supervisor from the materials science faculty. A broad spectrum of contemporary research areas is available.

Description of Courses

Materials Science

Mat 5

Lib A

497 Extended Degree Program Internship V 2-16 May be repeated for credit; cumulative maximum 16 hours. Prereq junior standing. Extended Degree Program student participation as paid or unpaid intern in a government unit or a non-profit organization.

Table

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Note: The above courses are designed to provide a comprehensive understanding of the materials science field, including both fundamental and applied aspects. Students are encouraged to consult with their advisor to develop a personalized plan of study that aligns with their career goals.
emarc 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 intend to take a mathematics course at WSU. See www.sci.wsu.edu/math/placement for more information.

The department offers courses of study leading to the degrees of Bachelor of Science in Mathematics, Master of Science in Mathematics (with an Applied Mathematics option), Doctor of Arts, Doctor of Philosophy, and Doctor of Philosophy with Teaching Emphasis.

### Schedule of Studies

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; 398, 401, 402, 420, 421; Phys 201; Cpt S 121 or two of Cpt S 153, 203, 251; Engl 402 (students whose native language is not English may substitute Engl 403 for 402).

### FIRST SEMESTER REQUIREMENTS

The first semester requirements are common to all mathematics degree programs:

#### Freshman Year

**First Semester**

- Biological Science [B] (GER) 4
- Degree Program Course, if necessary\(^1\) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 171 [N] (GER) 3

\(^1\) Students in Actuarial Science take Econ 101 [S] (GER).

### ACTUARIAL REQUIREMENTS (127 HOURS)

#### Freshman Year

**Second Semester**

- Cpt S 121 or two of Cpt S 153, 203, or 251 4
- Econ 102 [S] (GER) 3
- GenEd 111 [A] (GER) 3
- Math 172 4

**Sophomore Year**

- **First Semester**
  - Arts & Humanities [H,G] (GER) 3
- Math 220 3
- 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

**Junior Year**

- **First Semester**
  - Actct 230 3
- Engl 402 [W] (GER) 3
- Math 340 3
- Math 420 3
- Math 443 3
- Complete Writing Portfolio

**Second Semester**

- Actct 231 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- B Law 210 3
- Math 364 3
- Math 421 [M] 3
- Math 456 3

**Senior Year**

- **First Semester**
  - Acctg 230 3
- Econ 301 3
- Econ 411 3
- Math 398 1
- Math 402 [M] 3
- Math 423 3
- Tier III Course [T] (GER) 3

**Second Semester**

- Acctg 230 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Ins 320 3
- Math 401 [M] 3
- Math 448 3
- Elective 3

**Sophomore Year**

- Econ 301 3
- Econ 411 3
- Math 398 1
- Math 402 [M] 3
- Math 423 3
- Tier III Course [T] (GER) 3

### APPLIED STATISTICS REQUIREMENTS (124 HOURS)

#### Freshman Year

**Second Semester**

- ComSt 102 [C] (GER) 3
- Cpt S 121 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 3
  - 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

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### 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 intend to take a mathematics course at WSU. See www.sci.wsu.edu/math/placement for more information.

The department offers courses of study leading to the degrees of Bachelor of Science in Mathematics, Master of Science in Mathematics (with an Applied Mathematics option), Doctor of Arts, Doctor of Philosophy, and Doctor of Philosophy with Teaching Emphasis.
Math 315 3  
Math 360 3

**Junior Year**

**First Semester**  
Engl 402 [W] (GER) 3  
Math 364 3  
Math 420 3  
Math 443 3  
Tier III Course [T] (GER) 3  
Complete Writing Portfolio

**Second Semester**  
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3  
Cpt S 122 4  
Math 398 1  
Math 421 3  
Math 423 3  
Math 456 3

**Senior Year**

**First Semester**  
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3  
Dec S 418 3  
Math 401 [M] 3  
Math 416 3  
Statistics Elective1 3

**Second Semester**  
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3  
Cpt S 121 or two of Cpt S 153, 203, or 251 4  
GenEd 111 [A] (GER) 3  
Math 172 4  
Math 220 2  
Social Sciences [S,K] (GER) 3

**MATHEMATICAL MODELING REQUIREMENTS (122 HOURS)**

**Freshman Year**

**Second Semester**  
Cpt S 121 or two of Cpt S 153, 203, or 251 4  
GenEd 111 [A] (GER) 3  
Math 172 4  
Elective 4  
Biological [B] or Physical [P] Sciences (GER) 4  
Intercultural [I,G,K] (GER) 3  
Math 300 3  
Math 315 3  
Math 364 3  
Math 443 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  
Math 443 3

**Junior Year**

**First Semester**  
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3  
Engl 402 [W] (GER) 3  
Math 420 [M] 3  
Math 443 3  
Elective 3

**Second Semester**  
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3  
Math 415 3  
Math 421 [M] 3  
Math 440 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 448 3  
Electives 6

**Second Semester**  
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3  
Math 401 [M] 3  
Math 448 3  
Electives 6

**OPERATIONS RESEARCH REQUIREMENTS (122 HOURS)**

**Freshman Year**

**Second Semester**  
ComSt 102 [C] (GER) 3  
Cpt S 121 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 420 3  
Math 448 3  
Complete Writing Portfolio

**Junior Year**

**First Semester**  
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3  
Math 398 1  
Math 416 3  
Math 453 3  
Math 466 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 448 3  
Electives 6

**Second Semester**  
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3  
Math 401 [M] 3  
Math 448 3  
Electives 6

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1 Strongly recommended.
<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
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<tr>
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<tr>
<td><strong>THEORETICAL MATHEMATICS REQUIREMENTS (122 HOURS)</strong></td>
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<td>T &amp; L 301</td>
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<td>Arts &amp; Humanities [H,G]</td>
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<td>Intercultural [I,G,K]</td>
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<td>Math 398</td>
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<td><strong>Junior Year</strong></td>
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<td><strong>First Semester</strong></td>
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<td>Arts &amp; Humanities [H,G]</td>
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<td>Social Sciences [S,K]</td>
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<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<td><strong>Senior Year</strong></td>
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<td>Math 401 [M]</td>
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<td><strong>Second Semester</strong></td>
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<td>Math 320 or 421 [M]</td>
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<td>T &amp; L 400</td>
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**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 normally not be certified. Others will be considered on a case-by-case basis.

6. Appeals on certification decisions are considered by the department chairperson.

7. Students who are denied certification may reapply after completing at least 12 more semester hours, whereupon decisions are based on grades 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.

**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.

**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 normally not be certified. Others will be considered on a case-by-case basis.
6. Appeals on certification decisions are considered by the department chairperson.
7. Students who are denied certification may reapply after completing at least 12 more semester hours, whereupon decisions are based on grades 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.
equate 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.

**Description of Courses**

**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 earned toward degree; not qualified for financial aid.

103 Algebra Methods and Introduction to Functions 3 Prereq Math 100, or satisfactory math placement score. Fundamental algebraic operations and concepts, linear systems and inequalities, polynomial and rational functions, introduction to exponential and logarithmic functions.

107 Elementary Functions 4 Prereq Math 101 or 103 or satisfactory math placement score. Graphs, properties, and applications of polynomial, rational, exponential, logarithmic, and trigonometric functions.

140 [N] Mathematics for Life Scientists 4 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.

171 [N] Calculus I 4 (3-3) Prereq Math 107, or satisfactory math placement score. Differential and integral calculus of one variable with associated analytic geometry. Credit not normally granted for more than one of Math 140, 171, 202, 206.

172 Calculus II 4 (3-3) Prereq Math 171. Techniques and applications of one-variable calculus; estimation 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 architects. Credit not normally granted for more than one of Math 140, 171, 202, 206.

210 [N] Introduction to Mathematics 3 Prereq Math 101 or 103 or satisfactory math placement score. Nature and scope of modern mathematics, relationships to other disciplines.

212 [N] Introduction to Statistical Methods 4 (3-3) Same as Stat 212.

216 Discrete Structures 3 Prereq Math 107 and a programming course. Discrete mathematics, trees, graphs, elementary logic, and combinatronics with application to computer science.

220 Introductory Linear Algebra 2 Prereq Math 171 or c/. Elementary linear algebra with geometric applications. Credit not normally granted for both Math 201 and 220.

251 Mathematics for Elementary School Teachers I 3 (2-2) 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 (2-2) Prereq one year high school geometry; Math 251. Informal approach to basic ideas: mensuration, geometrical constructions, similarity, congruence, symmetry, probability, counting principles, measures of central tendency, graphical representation.

273 Calculus III 2 Prereq Math 172, 220 or c/. Calculus of functions of several variables.

283 Honors Calculus III 2 Prereq Math 182 or by permission. Multivariable calculus with emphasis on conceptual development and problem solving.


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.

397 Mathematicians at Work 1 Prereq Introduction to various options in mathematics and the oral, written, and leadership skills required for success in the field.

398 Mathematical Snapshots 1 Prereq Math 172. Character, life work, and historical importance of mathematicians from various eras and branches of mathematics.

401 [M] Introduction to Analysis 1 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 variable in multiple integrations.

408 Mathematics for Economists 3 Prereq Math 201, 202. Mathematical topics applicable to modern economic analysis and research. Cooperative course taught by UI (Ag Ec 409), open to WSU students.

409 Elements of Mathematical Economics 3 Same as Econ 410.

410 Topics in Probability and Statistics 3 Prereq stat course. Current topics in probability and statistics of mutual interest to faculty and students. Credit not granted for both Math 410 and 510.

415 Intermediate Differential Equations 3 Prereq Math 315. Linear systems; qualitative theory (existence, uniqueness, stability, periodicity); boundary value problems; applications.

416 Simulation Methods 3 Prereq Cpt S 121 or 203; statistics course. Model formulation and simulation in business, industry, and government; simulation languages; analysis and 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 T & L 425.

430 Statistical Methods in Engineering 3 Prereq Math 172, 220. Random variables, sampling, hypothesis testing; linear, multilinear, and nonlinear regression; analysis of variance for designed experiments; statistical computing. Credit not normally granted for both Math 430 and 442.

431 Topics in Science and Mathematics Teaching 1 or 2 May be repeated for credit. Prereq Biol 430, or c/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 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.

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 transformations; 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 443).

448 Numerical Analysis 3 Prereq FORTRAN, C, or other programming language; Math 315. Fundamentals of numerical computation; finding zeroes of functions, approximation and interpolation; numerical integration (quadrature); numerical solution of ordinary differential equations. Credit not granted for both Math 448 and 548.

453 Graph Theory 3 Prereq Math 220. Graphs and their applications, directed graphs, trees, networks, Eulerian and Hamiltonian paths, matrix representations, construction of algorithms. Credit not granted for both Math 453 and 553.

456 Introduction to Statistical Theory 3 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 salesman. Credit not granted for both Math 466 and 566.

481 Topics in Analysis 3 May be repeated for credit.

497 Instructional Practicum 1 or 2 May be repeated for credit; cumulative maximum 2 hours. By interview only. S, F grading.

498 Career Experience Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Industrial or governmental career experience in a mathematics or mathematics-related area, supervised by qualified professionals. S, F grading.

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

500 Problems in Mathematics 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 571).


507 Advanced Theory of Numbers 3 May be repeated for credit; cumulative maximum 6 hours. Analytic and algebraic number theory. Cooperative course taught by WSU, open to UI students (Math 507).


509 Foundations of Mathematics 3 The basis of mathematics in logic and set theory; continuum hypothesis; Godel’s theorems, recent developments. Cooperative course taught by WSU, open to UI students (Math 509).

510 Topics in Probability and Statistics 3 Graduate-level counterpart of Math 410; additional requirements. Credit not granted for both Math 410 and 510.

512 Ordinary Differential Equations 3 Prereq Math 442. Existence of solutions; linear systems; qualitative behavior, especially stability; periodic solutions. Cooperative course taught jointly by WSU and UI (Math 539).

513 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 416; additional requirements. Credit not granted for both Math 416 and 516.

518 Mathematical and Scientific Visualization 3 Prereq graduate standing. Graduate-level counterpart of Math 418; additional requirements. Credit not granted for both Math 418 and 518.

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 application. 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 polynomial and rational approximation techniques; approximation using splines and wavelets; selected topics in multivariate approximation; algorithms for approximation. Cooperative course taught by WSU, open to UI students (Math 543).  
544 Advanced Matrix Computations 3 Prereq Math 448. Advanced topics in the solution of linear systems and eigenvalue problems, including parallel matrix computations. Cooperative course taught by WSU, open to UI students (Math 544).  
545 Numerical Analysis of Evolution Equations 3 Prereq Math 448. Discretization and numerical solution of partial differential equations of evolution; stability, consistency, and convergence; shocks; conservation of forms. Cooperative course taught by WSU, open to UI students (Math 545).  
546 Numerical Analysis of Elliptic PDEs 3 Prereq Math 448. Methods of discretizing elliptic partial differential equations and solving the resulting systems of equations; error analysis. Cooperative course taught by WSU, open to UI students (Math 546).  
548 Numerical Analysis 3 Prereq graduate standing. Graduate-level counterpart of Math 448; additional requirements. Credit not granted for both Math 448 and 548.  
550 Advanced Topics in Geometry 3 Projective, affine, and non-Euclidean geometries and their relation to abstract algebra and differential geometry. Cooperative course taught by WSU, open to UI students (Math 550).  
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; Math 273. Mathematical approaches to population genetics and genome analysis; theories and statistical analyses of genetic parameters.  
564 Topics in Optimization 3 May be repeated for credit. Prereq advanced multivariable calculus and a programming language; Rec Math 464, 544. Advanced topics in the theory and computing methodology in optimization with emphasis on real-life algorithmic implementations. Cooperative course taught by WSU, open to UI students (Math 564).  
566 Optimization in Networks 3 Prereq graduate standing. Graduate-level counterpart of Math 466; additional requirements. Credit not granted for both Math 466 and 566.  
568 Statistical Theory I 3 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).  
573 Reliability Theory 3 Prereq Math 430, 443. Statistical concepts; stochastic material strengths and lifetimes; strength versus safety analysis; reliability of coherent systems; maintenance models; complex systems. Cooperative course taught jointly by WSU and UI (Stat 571).  
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 Precollege 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.  
597 Mathematics Instruction Seminar 1 May be repeated for credit; cumulative maximum 5 hours. Prereq graduate standing. Introduction to the teaching of university mathematics. S, F grading.  
600 Special Projects or Independent Study Variable credit. S, F grading.  
602 Internship V 2-12 May be repeated for credit. Prereq 40 hours graduate work. A structured internship from three to nine months; teaching at the postsecondary level or applied work in a non-academic environment. S, F grading.  
700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.  
702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.  
800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
School of Mechanical and Materials Engineering


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.

MECHANICAL ENGINEERING

The mission of the mechanical engineering program is to provide a broad education in mechanical engineering that prepares our students for successful professional practice and advanced studies. Mechanical engineering is concerned with (a) the use and economical conversion of energy from natural sources into other useful energy to provide power, light, heat, cooling and transportation, (b) the design and production of machines to lighten the burden of human work, (c) the creative planning, development and operation of systems for using energy, machines and resources, and (d) the processing of materials into products useful to people. Employment opportunities for graduates exist in the areas of mechanical design, systems design, equipment development, manufacturing, CAD/CAM, project engineering, production management, applied research and sales and service.

The undergraduate curriculum emphasizes foundation courses at the third year which are fundamental to all aspects of mechanical engineering. These courses emphasize both analysis and design while accompanying laboratory courses provide opportunities for hands-on experiences. Computer applications are interwoven throughout the program. 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 knowledge, hands-on experience, and communication skills that will allow them to function successfully as members of technical teams; and 3) to instill in our graduates an appreciation of the economic, social, environmental, and ethical impact of their professional activities and a desire for lifelong learning.

The school offers courses of study leading to the degrees of Bachelor of Science in Mechanical Engineering (accredited by the Accrediting Board for Engineering and Technology), Master of Science in Mechanical Engineering, and Doctor of Philosophy (Mechanical Engineering). An integrated BS/MS program facilitates the completion of a master's degree in one additional year beyond the bachelor's degree.

MATERIALS SCIENCE AND ENGINEERING

The mission of the materials science and engineering program is to provide excellence in education, research, and service in the field of materials science and engineering through educational programs that graduate students with strong backgrounds in scientific and engineering problem-solving methods. Materials science and engineering is the application of methods and principles of the pure sciences to the study and utilization of engineering materials. The undergraduate program focuses on 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, attention must also be given to the application and peculiarities of specific material 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 which emphasizes understanding of the interrelationship between structure, properties, and processing for engineering materials; 3) to provide our students with research experience; 4) to provide our students with an integrated mechanical-materials design experience that utilizes a teamwork approach in solving engineering problems; 5) to develop in our students the ability to communicate effectively both orally and in writing; and 6) to create an environment within the program that instills in the students a sense of professionalism, a desire for life-long learning.

The school offers courses of study leading to the degrees of Bachelor of Science in Mechanical 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 CAMPUSS)

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 region 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 Operations 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.

### Schedule of Studies

**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 advisor throughout entire program.

### MATERIALS SCIENCE AND ENGINEERING REQUIREMENTS (129 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>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
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**Sophomore Year**

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**Senior Year**

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**MECHANICAL ENGINEERING REQUIREMENTS (128 HOURS)  

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**MECHANICAL ENGINEERING REQUIREMENTS (128 HOURS)  

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<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
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**Senior Year**

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### MANUFACTURING ENGINEERING REQUIREMENTS (128 HOURS)

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M E 103 3
Math 171 [N] (GER) 4

Second Semester
Chem 106 [P] (GER) 4
Econ 102 [S] (GER) 3
GenEd 111 [A] (GER) 3
M E 120 2
Math 172 4

Sophomore Year
First Semester
Arts & Humanities [H, G] (GER) 3
Biological Sciences [B] (GER) 3
C E 211 2
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4

Second Semester
C E 215 3
Cpt S 251 2
M E 212 3
Math 315 3
Phys 202 [P] (GER) 4

Junior Year (Vancouver Campus)
First Semester
E E 304 2
Intercultural [J,G,K] (GER) 3
M E 303 3
M E 316 [M] 3
Math 360 3
MSE 301 3

Second Semester
M E 310 3
M E 311 1
M E 375 3
M E 404 3
M E 414 3
Mfg E 305 2

Senior Year (Vancouver Campus)
First Semester
M E 325 3
M E 400 2
M E 474 3
Tier II Humanities or Social Sciences Course (GER) 3
Mfg E 463 3
Mfg Engineering Elective 3

Second Semester
Engl 402 [W] (GER) 3
M E 410 [M] 2
M E 416 or 420 2
M E 475 3
Mfg Engineering Elective 3

MATERIALS SCIENCE AND ENGINEERING MINOR
A minor in MSE requires 16 credits which must include M E 220 and MSE 301. An additional 12 credits must be chosen from MSE 302, 401, 402, 403, 404, 413, M E 310, or E E 496.

MECHANICAL ENGINEERING MINOR
A minor in M E requires 16 credits of 300-400-level M E courses, including two of the following four courses: M E 303, 348, 404, 414.

Certification Mechanical Engineering
Students who have completed at least 30 semester hours of graded course work and who have completed the following courses: C E 211, Chem 105, Engl 101, M E 103, Math 171, 172, and Phys 201 or their equivalents with a minimum 2.0 gpa for both the overall courses and the prerequisite courses listed above 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 assigned to a mechanical engineering advisor. 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. Students who have completed at least 30 semester hours of graded course work and who have completed the following courses: Chem 105, Chem 106, Engl 101, Math 171, 172, and Phys 201 or their equivalents with a minimum 2.0 g.p.a. for both overall courses and the prerequisite courses listed above are eligible. 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. For additional details, contact the school’s office of student services.

Certification Manufacturing Engineering
Students who have completed at least 30 semester hours of graded coursework and who have completed the following courses: C E 211, Chem 105, Engl 101, M E 103, Math 171, 172, and Phys 201 or their equivalents with a minimum 2.0 g.p.a. for all college level courses and for the group of courses listed above are eligible to apply for certification into the Manufacturing Engineering Program. Applications for certification will be reviewed by a program committee. 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. Additional details and application forms are available from the Manufacturing Engineering Program Coordinator.

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
M E 103 Engineering Graphics 3 (1-6) Orthographic theory, conventions, and visualization; isometric and oblique pictorials; graphic analysis and solution of spatial problems, computer-aided drafting. Cooperative course taught by WSU, open to UI students (ENGR 103).

120 Innovation in Design 2 Engineering and architectural creativity; role, function, enhancement, integration in design methods.

125 M E Merit Experience 2 Prereq by interview only. A hands-on, project-oriented course emphasizing teamwork and creativity in engineering design, conducted in an enriched learning environment.

212 Dynamics 3 Prereq C E 211. Kinematics and kinetics of particles and rigid bodies; introduction to mechanical vibration. Cooperative course taught jointly by WSU and UI (ME 220).

220 (S20) Materials Laboratory 1 (0-3) Prereq C E 215 or c//. Mechanical behavior of materials and application to engineering structures.

301 Fundamentals of Thermodynamics 3 Prereq Phys 201; Rec Math 315. Thermodynamic properties of matter, ideal and real gases, work and heat, first and second laws and their application to engineering systems. Cooperative course taught jointly by WSU and UI (Che 321).

303 Fluid Mechanics 3 Prereq M E 212, Math 315. Fluid statics, laminar and turbulent flow, similarity, pipe flow, boundary layers, lift and drag and measurement techniques. Cooperative course taught jointly by WSU and UI (CE 320).

305 Thermal and Fluids Laboratory 2 (1-3) Prereq M E 303 or concurrent, M E 316, major in engr. Instrumentation, data acquisition, and theory verification in the thermal and fluid sciences.

310 Manufacturing Processes 3 Prereq M E 301, major in engr. Cutting operations, metal forming by deformation, material fabrication, and nontraditional processing.

311 Manufacturing Processes Laboratory 1 (0-3) Prereq M E 310 or c//, major in engr. Manufacturing processes laboratory in machining, welding, forming; manufacturing project.
312 Kinematic Analysis 3 Prereq M E 212; major in engr. Motion transfer; velocity, acceleration, and inertia forces in machines; static and dynamic force systems; cam profiles; gears and gear- ing systems. Cooperative course taught by UI (ME 324), open to WSU students.

313 Engineering Analysis 3 Prereq Math 315, major in engr. Analysis and modeling of engi- neering problems utilizing numerical and mathematical techniques and computers.

316 [M] Systems Design 3 Prereq C E 215, MSE 301 or c/c; major in engr. Engineering design process for systems and components; design cri- teria, creativity, engineering economics, engi- neering statistics, standards, product safety; de- sign projects.

325 Manufacturing Operations Planning 3 Prereq M E 310, 311, Math 360 or //, or by per- mission. Quantitative techniques of production and planning and control, material require- ments, operations scheduling, production econ- omics.

348 Dynamics Systems 3 Prereq M E 212, 313, major in engr. Fundamentals of vibration analy- sis, control systems, system modeling and dy- namics analysis.

375 Manufacturing Control Systems 3 (2-3) Prereq E E 304, M E 212, Math 315. Feedback con- trol; 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 realiza- tion, 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, or CptS programming. Integration of mechanical and microprocessor-based systems; control theory implemented with data acquisi- tion systems; sensors; actuators, signal condi- tioning, programmable logic controllers.

402 Thermal Systems Design 3 Prereq M E 301, 304, major in engr. Design and analysis of thermofluid systems using principles of thermo- dynamics, fluid mechanics and heat transfer.

404 Heat Transfer 3 Prereq M E 303 or c/c, major in engr. Conduction, radiation, and convection heat transfer; analytical, numerical, experimen- tal results for solids, liquids, and gases; heat ex- changer design. Cooperative course taught jointly by WSU and UI (ME 345).

406 [M] Experimental Design 3 (1-6) Prereq M E 305, 316, 404; Rec M E 348. Designing; conduct- ing, and reporting of experimental investiga- tions; data analysis, experimental equipment.

407 Computational Fluid Dynamics 3 Prereq M E 303. Basic concepts and applications of computational fluid dynamics to the analysis and design of fluid systems and components.


413 Mechanics of Solids 3 Same as MSE 413.


415 Integrated Design 3 Prereq M E 310, 414 or c/c; major in engr. Methodologies to optimize product design incorporating functionality, reli- ability, manufacturability and maintainability.

416 Mechanical Systems Design 3 (1-6) Prereq M E 348; 404, 414; Rec M E 316. Integrative de- sign in mechanical engineering; multidisciplin- ary design project considering both technical and nontechnical contexts; organizational dy- namics and communications.

419 Air Conditioning 3 Prereq M E 404. Principles of heat and moisture transfer; air motion and pu- rity in buildings; design of systems. Cooperative course taught jointly by WSU and UI (ME 444).

420 Capstone Engineering Design 3 (1-6) Prereq senior in engr. Integrative design in engineering; multi-disciplinary design project considering both technical and nontechnical contexts; organi- zational dynamics and communications.


436 Combustion Engines 3 Prereq M E 303. Internal combustion engines; spark ignition engines, diesels, and gas turbines.

439 Applied Aerodynamics 3 Prereq M E 303. Aerodynamic lift and drag; circulation; bound- ary layers, application to subsonic aircraft wing design.

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 215. Theore- tical bases and application of the principal regulatory stress analysis design codes.


460 Nuclear Reactor Engineering 3 Prereq M E 461. Nuclear reactor design problems in thermo- dynamics, fluid flow, heat transfer, fuel prepara- tion, 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. Ki- nematics and kinetics of mechanisms and ma- chines; static and dynamic force analyses of planar and spatial systems; synthesis for functionality.


473 Computer-aided 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 materi- als 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; numeri- cally controlled machine tools, robotics, control algorithms, component and system design.

481 Control Systems 3 Prereq M E 348. Analysis and design of feedback control systems. Cooperative course taught jointly by WSU and UI (ME 481).

495 Internship in Mechanical Industry 3 or 6 May be repeated for credit; cumulative maxi- mum 12 hours. Prereq major in M E or MSE. By interview only. Students work full time on en- gineering assignment in approved industries with industrial and faculty supervision. S, F grading.

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

501 Continuum Mechanics 3 Prereq graduate standing. Unified presentation of principles common to all branches of solid and fluid mechan- ics; viscous fluids, elasticity, viscoelasticity, and plasticity.

513 Conduction Heat Transfer 3 Rec M E 404. Analytic methods applied to multidimensional steady-state and transient conduction heat transfer, melting and ablation, numerical methods.

514 Thermal Radiation Processes 2 or 3 Rec M E 404. Thermal radiation within enclosures, ideal and real surfaces; radiative processes within ab- sorbing/emitting media; applications to furnaces, solar energy systems. Cooperative course taught jointly by WSU and UI (ME 547).

515 Convective Heat Transfer 3 Rec M E 404, 521. Derivation of the energy conservation equation; laminar and turbulent forced convec- tion heat transfer with internal and external flow; free convection. Cooperative course taught jointly by WSU and UI (ME 546).

521 Fundamentals of Fluids 4 Prereq M E 303 or C.E 315. Governing equations of fluid mechan- ics accompanied by applications of Navier- Stokes equation to simple flow situations, boundary layer analysis.

522 Fundamentals of Fluid II 1 Rec M.E 521. Vis- cous shear layers including heat and mass trans- fer, compressibility effects, vortex dynamics, sta- bility and transition, turbulence analysis and modeling.

523 Engineering Acoustics 3 Prereq graduate standing. Fundamentals of acoustics including wave theory; transmission through layers; gen- eration and reception, low frequency models; application to sound measurement, transduc- ers, loudspeaker cabinet design, and nonde- structive testing; acoustic design project re- quired. Cooperative course taught by UI (ME 513), open to WSU students.

526 Microscopic Thermodynamics 3 Microscopic development of equilibrium; classical and quan- tum particle statistics; statistical description of real and ideal gases, solids, and liquids. Cooperative course taught jointly by WSU and UI (ME 526).

527 Macroscopic Thermodynamics 3 Advanced thermodynamics from macroscopic viewpoint; basic postulates, equilibrium, stability, property re- lations; application to thermal-fluid and solid me- chanics; irreversible thermodynamics. Cooper- ative 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 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 Prereq M E 414. Analysis of micromechanical and macromechanical behavior of composite materials with emphasis on fiber-reinforced composite; prediction of properties; stiffness and strength theories; laminated beams and plates; dynamic behavior; environmental effects. Cooperative course taught jointly by WSU and UI (ME 534).
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 MSE 537.
540 Advanced Dynamics of Physical Systems 3 Newtonian dynamics, rotating coordinate systems; Lagrangian and Hamiltonian mechanics; gyroscopic mechanics, other applications. Cooperative course taught by WSU, open to UI students (ME 504).
541 Advanced Mechanical Vibrations 2 or 3 Rec M E 449. Response of single and multi degree of freedom systems; finite element formulation; matrix methods, random vibrations. Cooperative course taught jointly by WSU and UI (ME 572).
542 Optimal Control of Dynamic Systems 3 Introduction to optimal control theory; differential games, and multiple criteria systems; applications in engineering, biology, economics, agriculture, and medicine. Cooperative course taught by WSU, open to UI students (ME 504).
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 521 or M E 521. Turbulent flow; dimensional analysis, statistical models and descriptions of organized structures.
552 Experimental Methods in Thermal-fluid Science 3 (2-3) Theory and practice in the use of instrumentation for measuring temperature, velocity, pressure and concentration; measurement of classical flow fields.
553 Two-phase Flow V 1-3 May be repeated for credit, cumulative maximum 3 hours. Rec M E 521. Fundamentals of the flow of fluids with two phases and applications. Cooperative course taught by WSU, open to UI students (ME 553).
556 Numerical Modeling in Fluid Mechanics 3 Same as C E 556. 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 neutron theory, including the transport equation; multi-group, multi-region diffusion theory; kinetics; and perturbation theory.
565 Nuclear Reactor Engineering 3 Prereq M E 461. Reactor power distribution; thermal and exposure limits; critical heat flux and pressure design; neutron/thermal hydraulic relationships; transient/accident analysis.
569 Advanced Topics in Thermal and Fluid Sciences V 1-3 May be repeated for credit. Advanced topics in thermodynamics, heat transfer or fluid mechanics; analytical and experimental methods.
574 Foundations of CAD 3 Topics fundamental to the creation of CAD, engineering visualization, and virtual reality based engineering software. Cooperative course taught by WSU, open to UI students (ME 574).
575 Geometric Modeling 3 Study of the mathematics behind the creation of complex shapes for CAD using curves, surfaces, and solids.
579 Advanced Topics in Design and Manufacturing V 1-3 May be repeated for credit.
598 Seminar 1 May be repeated for credit. Seminar on current research interests. S, F grading.
600 Special Projects or Independent Study Variable credit. S, F grading.
700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.
702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
Manufacturing Engineering
Mfg E
305 Microprocessor Applications 2 Prereq CptS 251, EE 304. Microprocessors, hardware/software interfacing and system design with embedded microcontrollers for non-EE major students.
409 Metrology 3 (2-3) Prereq Math 220, M E 212; Rec Math 360. Dimensional referencing and tolerance stack up; process variation and process capability measures; mechanical, electronic, and optical methods for measuring manufacturing attributes and variables.
442 Robotics in Manufacturing 3 Prereq CptS 251, EE 304, Math 220. Fundamental concepts of industrial robot theory and application; robot programming and interfacing for supervisory control; robotic cell design project with hardware and software development.
463 Engineering Cost Analysis 3 Understanding and estimating costs for production, overhead, taxes, cash flow, time value of money, forecasting, justifications, make/buy and break-even decisions.
476 (M E) [T] Industrial Ecology and Sustainability in Manufacturing 3 Prereq senior standing in business, science or engineering; calculus course; completion of one Tier I and three Tier II courses. Open and closed manufacturing systems; resources and sinks; pollution prevention, zero discharge; materials productivity and dematerialization; green design and manufacture.
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 materials, 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//. Structure of materials, phase equilibrium, phase transformations, and mechanical properties.
302 Electronic Materials 3 Prereq Chem 105, Phys 202 or c//. Structure of materials, electronic structure of solids; thermal, electrical, dielectric, and magnetic properties of materials; semiconductors processing.
309 Metallurgy Transport Phenomena 3 Prereq Math 315 or c//. Introduction to principles of metallurgy transport phenomena including heat, mass, and momentum transfer. Cooperative course taught by UI (Met 309), open to WSU students.
312 Thermodynamics and Phase Equilibrium 3 Prereq MSE 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 3 (1-6) 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 3 (3-3) Prereq M E 310. Engineering science of particulates; powder production, powder properties, separation; design of systems applied to metals, ores, and concentrates. Field trips required. Cooperative course taught by UI (Met 341), open to WSU students.
401 Metallic Materials 3 Prereq MSE 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 to plasticity.

415 Materials Selection and Design 3 Prereq Chem 331. Selection of materials for use in structural applications; consideration of environment, stress conditions, cost and performance as guide to properties. Cooperative course taught by UI (Met 415), open to WSU students.

420 Capstone Engineering Design 3 (1-6) Same as M E 420.

421 Light Metals 3 Fundamental design of the light metals aluminum, magnesium, and titanium alloys; applications of these materials. Cooperative course taught by UI (Met 421), open to WSU students.


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 and high density powder metallurgy (PM) and 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. Cooperative course taught by UI (Met 545), open to WSU students.

510 Electronic Properties of Materials 3 Electr. energy bands in solids, electrical conduction in metals and semiconductors, applications to solid-state devices based on silicon and III-V compounds.

516 Phase Transformations 3 Rec MSE 314, 316. Thermodynamics, nucleation, interface motion, mechanisms and kinetics of chemical reactions between solid metals and their environment.

517 Thin Films 3 Prereq graduate standing or senior in engineering or science. Materials science aspect of thin films, including growth, characterization, and properties for electrical, mechanical, corrosion, and optical behavior.

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, fracture behavior of thin films and bulk ceramics.

532 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 (Bedu 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 336.

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. Pahl, S. R. White, R. B. Wilson; Associate Professor, J. M. Mallatt; Assistant Professor, P. F. Mixture; 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 advisor, certain courses listed below may be taken by graduate students enrolled in graduate programs leading to advanced degrees granted by other academic units.

In accordance with School of Medicine policy, all Med S courses are S, F graded.

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 communication 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 520).
521P Natural History of Infectious Disease and Chemotherapy 3 (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 MedS 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. VanAlstine; 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 and Army orientation; provides leader training and assessment. Students must register through the Mil S Dept. for Mil S 396. May be taken as Mgt 498, Pol S 497, PEACT 201, or Ed Ad 499 with permission. S, F grading.

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 pragmum.
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 increased 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 laboratories 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 251, 320, 407, 519, Psych 312, 333, 350, 361, 464, Soc 351, 446. A grade of C or better is required in all course work for the minor.

**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 the factors that influence their distribution in nature, their relationship to each other and to other living things, their beneficial and detrimental effects on human beings, and the physical and chemical changes they make in their environment. Employment opportunities in industrial, government, hospital, and private laboratories and agencies are excellent for qualified graduates. 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 degrees of Master of Science in Microbiology and Doctor of Philosophy. Areas in which the unit is prepared to direct research include the biology of membranes, bioremediation, molecular genetics, molecular basis of cell-cell interactions and virulence, microbial differentiation, cellular and tumor immunology and the regulation of the immune response, 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 departmental 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 Biol 418 is required. Biol 418 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.

**Schedule of Studies**

**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 REQUIREMENTS (120 HOURS)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<td>Chem 105 [P] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 171 [N] (GER)</td>
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**Second Semester**

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<tr>
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<tr>
<td>Biol 103 [B] (GER)</td>
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<tr>
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<td>3</td>
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<tr>
<td>Math 172</td>
<td>4</td>
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</table>
### Sophomore Year

**First Semester**
- Arts & Humanities [H,G] (GER) 3
- Biol 104 [B] (GER) 4
- Chem 340 3
- Chem 341 2
- Phys 201 [P] (GER) 4

**Second Semester**
- Hours
- Chem 342 3
- Chem 343 2
- MBioS 301 4
- Phys 202 [P] (GER) 4
- Social Sciences [S,K] (GER) 3

**Junior Year**

**First Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Engl 201 [W] (GER) 3
- MBioS 304 3
- MBioS 361 [M] 1
- Selective 3
- Complete Writing Portfolio

**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

**Senior Year**

**First Semester**
- Hours
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- MBioS 413 3
- MBioS 454 3
- MBioS 498 or 499 3
- Elective 3

**Second Semester**
- Hours
- Intercultural [I,G,K] (GER) 3
- MBioS 414 3
- Tier III Course [T] (GER) 3
- Electives 6

### BIOCHEMISTRY/MOLECULAR BIOLOGY REQUIREMENTS (120 HOURS) ✔FYDA

**Freshman Year**

**First Semester**
- Hours
- Biol 103 [B] (GER) 4
- Chem 105 [P] (GER) 4
- Math 107 3

**Second Semester**
- Hours
- Biol 104 [B] (GER) 4
- Chem 106 [P] (GER) 4
- GenEd 110 [A] (GER) 3
- Math 140 4

**Sophomore Year**

**First Semester**
- Hours
- Arts & Humanities [H,G] (GER) 3
- Chem 340 3
- Chem 341 2
- MBioS 301 4
- Phys 101 [P] (GER) 4

**Second Semester**
- Hours
- Chem 342 3
- Chem 343 2
- MBioS 303 4
- Phys 102 [P] (GER) 4
- Social Sciences [S,K] (GER) 3

**Junior Year**

**First Semester**
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- 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 [T] (GER) 3
- Elective 3

### APPLIED GENETICS AND CELL BIOLOGY REQUIREMENTS (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
- 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

**Sophomore Year**

**First Semester**
- Hours
- Biol 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

**Junior Year**

**First Semester**
- Hours
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
- MBioS 304 [M] 3
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<th>Hours</th>
<th>Courses</th>
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<td>Math 140 [N] or 171 [N] (GER)</td>
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<td><strong>MICROBIOLOGY AND MEDICAL TECHNOLOGY REQUIREMENTS (120 HOURS)</strong></td>
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<td>Chem 240</td>
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<td>MBioS 427 [M] or Biol 325 Complete Writing Portfolio</td>
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<td><strong>Microbiological and Medical Technology Courses</strong></td>
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<td>MBioS 427 [M]</td>
<td>3</td>
<td>Complete Writing Portfolio</td>
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</table>

**MOLECULAR GENETICS AND CELL BIOLOGY REQUIREMENTS (120 HOURS)**

1 For Animal Biotechnology, take A S 330; for Plant Biotechnology, take Biol 320.
2 For Animal Biotechnology, take one from: A S 313 or 314; one from: A S 440 or Biol 353; and one from: V An 308 or Biol 324. For Plant Biotechnology, take one from: CropS 411 or Hort 416; and two from: Biol 325, CropS 445, Hort 251, PI P 429.
3 For Animal Biotechnology, take A S 448; for Plant Biotechnology, take Biol 409.

**Description of Courses**

**Molecular Biosciences**

**MBioS**

101 [B] **Introductory Microbiology** 4 (3-3) Microbiology for the informed citizen as it impacts humans and their environment. Not for students who have taken Biol 103 and 104. Credit not granted for both MBioS 101 and MBioS 102/105.

102 **Introductory Microbiology** 5 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.

105 [B] **Introductory Microbiology Laboratory** 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.

301 **General Genetics** 4 Prereq Biol 104; two semesters Chem. Principles of modern and classical genetics.

302 **General Microbiology** 4 (3-3) Prereq Biol 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 **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 [M] Introductory Biochemistry Laboratory 3 (1-6) Prereq MBioS 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.
340 Medical Microbiology 3 Prereq MBioS 302; MBioS 303 or c//. Microbial pathogens and their relationship to disease.
341 Diagnostic Medical Bacteriology 2 (0-6) Prereq MBioS 340 or c//. Techniques and tests for the identification of bacteria pathogenic for humans.
342 Microbial Ecology 3 Prereq Biol 104; Chem 240 or c//. Discussion of microorganisms behavior in nature and microbial activities influence on ecological balance.
360 [M] Cell and Molecular Laboratory 2 (0-6) Prereq MBioS 301, 303, or c//; one semester organic chemistry. Laboratory methods in cell biology, genetics and molecular biology.
361 [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 MBioS 301, 303. Computer analysis of nucleic acid sequences and protein structure.
401 Introduction to Cell Biology 3 Prereq MBioS 301 or 303. Cellular structure and function; membrane biochemistry and transport; cell-cell communication; regulation of cell cycle and apoptosis; cell signaling; cancer biology.
402 [M] General Genetics Laboratory 3 (1-6) Prereq MBioS 301. Basic principles of modern and classical genetics utilizing several species.
413 General Biochemistry 3 Prereq MBioS 303, junior standing. Structure and function of proteins, nucleic acids and biological membranes; principles of enzymology; biochemical methodologies.
414 General Biochemistry 3 Prereq MBioS 413. Metabolism of carbohydrates, proteins, fats, bioenergetics; photosynthesis; control of metabolic processes.
420 Fundamentals of Molecular Genetics 3 Prereq MBioS 301, 303. Genetics and molecular biology emphasizing eukaryotic topics and including prokaryotic techniques.
422 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Same as Hort 405/505. Credit not granted for both MBioS 422 and 522.
423 Human Genetics 3 Prereq MBioS 301. Exploration of individual and population genetics leading to critical discussion of current social, medical, and scientific issues.
424 Directed Problems in Cell Biology 1 Prereq MBioS 301 or 303; c// in MBioS 401. Adjunct course to MBioS 401.
426 Microbial Genetics 3 Prereq MBioS 301 or 303; MBioS 302. Genetics of bacteria, bacteriophages and plasmids; regulation of gene expression; genetic manipulation of microorganisms.
427 [M] Perspectives in Biotechnology 3 Same as A S 488. Credit not granted for both MBioS 427 and 527.
440 Immunology 3 Prereq MBioS 302; org chem. Principles of basic immunology. Credit not granted for both MBioS 440 and 540.
441 [M] Immunology Laboratory 2 (0-6) Prereq MBioS 440 or c//. Fundamental principles and techniques used in immunology.
442 General Virology 3 Prereq MBioS 301, 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 [M] General Virology Laboratory 2 (0-6) Prereq MBioS 442 or c//. Laboratory techniques concerning cultivation and characterization of viruses. Cooperative course taught by WSU, open to UI students (MMBB 415).
444 Food and Applied Microbiology 2 Same as FSHN 414.
445 Food Microbiology Laboratory 2 (0-6) Same as FSHN 417.
446 Epidemiology 3 Prereq junior standing. Study of diseases in human populations; concepts of etiology, disease rates, susceptibility and risk factors, screening for disease, and prevention. Cooperative course taught by WSU, open to UI students (MMBB 420).
447 Molecular Mechanisms in Microbiology 2 In-depth discussion of molecular mechanisms and different experimental approaches in microbiology. Cooperative course taught by UI (MMBB 450), open to WSU students.
448 Soil Microbial Ecology 3 Same as Soils 431.
450 Basic and Applied Microbial Physiology 3 Prereq MBioS 302, 303. Basic microbial physiology and its relevance to the processes of applied microbiology. Credit not granted for both MBioS 450 and 550.
452 Environmental Microbiology 3 Prereq college-level biology, microbiology, organic chemistry; microbial contamination and interactions between microorganisms and the environment, methods and mechanisms of bioremediation. Credit not granted for both MBioS 452 and 552.
454 Techniques in Molecular Biology 3 (1-6) Prereq MBioS 402, or MBioS 302. Basic principles and techniques of gene manipulation.
455 Biotechnology for High School Teachers 3 (1-6) Prereq high school science teaching experience. Methodologies illustrating the use of microbes to implement laboratory exercises in biotechnology.
456 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 electron microscopy, sedimentation, viscosity, and spectroscopy.
490 [M] Genetics and Cell Biology Seminar 2 May be repeated for credit. Prereq MBioS 301. Classical literature in genetics and cell biology; current topics discussed by faculty experts in the field.
492 [M] 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.
495 Internship Training V 2 (0-4) to 4 (0-8) May be repeated for credit; cumulative maximum 8 hours. Prereq MBioS 301, 302, or 303 by permission only. Experience in work related to specific career interests. S, F grading.
496 Senior Project 1 Prereq senior Micro major. Laboratory research or library project; seminar presentation.
498 Directed Research V 1 (0-3) to 4 (0-12) May be repeated for credit. Prereq MBioS 301 or 303. Introduction to laboratory research.
500 Special Problems V 1-4 May be repeated for credit. S, F grading.
501 Cell Biology 3 Prereq MBioS 301, 303. Graduate-level counterpart of MBioS 401; additional requirements. Credit not granted for both MBioS 401 and 501. Cooperative course taught by WSU, open to UI students (MMBB 550).
503 Molecular Biology I 3 Prereq MBioS 301, 303. DNA replication and recombination in prokaryotes and eukaryotes; recombinant DNA methods and host/vector systems; genome analysis; transgenic organisms.
504 Molecular Biology II 3 Prereq MBioS 301, 303. Gene expression and regulation in prokaryotes and eukaryotes, including transcription, RNA processing, and translation; chromatin structure; DNA repair.
506 Molecular Techniques in Microbiology 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 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 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 Eukaryotic Molecular Genetics 2 Prereq MBioS 301, 303. Gene control and organization; lower eukaryotic and cell culture genetics.
521 Cell Biotechnology V 1-3 Prereq MBioS 303, 401. Contemporary cell biotechnology; techniques including: cell culture, immunology (including preparation and use of monoclonal antibodies), nucleic acid hybridization (including in situ).
522 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Graduate-level counterpart of MBioS 422; additional requirements. Credit not granted for both MBioS 422 and 522.
523 Fundamentals of Oncology 3 Same as P/T 572.
524 Cellular and Molecular Aspects of Development 3 Same as Biol 573.
525 Advanced Topics in Genetics V 1-2 May be repeated for credit. Prereq MBioS 520 or 511. Recent research in selected areas of genetics.
526 Advanced Topics in Cell Biology V 1-3 May be repeated for credit; cumulative maximum 7 hours. Current research in cell structure and function. Cooperative course taught by WSU, open to UI students (Genet/PSC 592).

527 Perspectives in Biotechnology 3 Graduate-level counterpart of MBioS 427; additional requirements. Credit not granted for both MBioS 427 and 527.

528 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 Plant Molecular Genetics 3 Prereq MBioS 520. Plant molecular genetics with emphasis on systems specific to plants and plant genetic engineering. Cooperative course taught by WSU, open to UI students (Genet 570/PSC 571).

531 Plant Cell Biology 3 Prereq graduate standing. Function of the plant cell with emphasis on current research; topics include membrane biology, protein targeting, and molecular signaling.

532 Plant Transmission Genes 3 Same as CropS 504.

534 Fungal Genetics 4 (3-3) Same as PI P 534.

535 Molecular Genetics of Plant and Pathogen Interactions 2 Same as PI P 535.


539 Protein Trafficking in Eucaryotic Cells 3 Same as PI Ph 580.

540 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 Seminar 1 May be repeated for credit. Literature reviews and research reports.

542 General Virology 3 Graduate-level counterpart of MBioS 442; additional requirements. Credit not granted for both MBioS 442 and 542.

543 Advanced Pathogenic Mechanisms 3 Prereq by interview only. Detailed analysis of microbial virulence factors and host factors involved in infection and infectious disease. Cooperative course taught jointly by WSU and UI (MMBB 562).

544 Microbial Transformation 3 Prereq MBioS 303, MBioS 450. Use of microbes in the biodegradation of wastes and bioprocessing to produce valuable chemical stocks. Cooperative course taught by UI (MMBB 568), open to WSU students.

545 Advanced Immunology 3 Prereq introductory course in immunology. Cellular and molecular regulation of the immune response. Cooperative course taught by WSU, open to UI students (VS 570).

546 Selected Topics in Microbiology 1 May be repeated for credit; cumulative maximum 2 hours. Prereq 9 hours 300-400-level Micro.

547 Advanced Topics in Microbiology V 1-3 May be repeated for credit.

548 Selected Topics in Virology 1 May be repeated for credit. Prereq MBioS 542 or c/c; by interview only. Selected topics in virology using the current literature.

549 Selected Topics in Immunology 1 May be repeated for credit; cumulative maximum 2 hours. Prereq course in immunology. Seminar series on advances in immunology.

550 Basic and Applied Microbial Physiology 3 Graduate-level counterpart of MBioS 450; additional requirements. Credit not granted for both MBioS 450 and 550.

552 Environmental Microbiology 3 Graduate-level counterpart of MBioS 452; additional requirements. Credit not granted for both MBioS 452 and 552.

561 Biochemical Signaling in Plants, Animals and Microorganisms 2 Prereq MBioS 513. New research on intra and extra cellular biochemical signaling, including communication in plants and hormone action in animals.

567 Proteins and Enzymes 3 Prereq MBioS 513. Enzyme mechanisms; protein structure and function; protein evolution.

568 Advanced Topics in Biochemistry V 1-3 May be repeated for credit. Prereq MBioS 513 or c/c. Recent research in selected areas of biochemistry.

570 Biological Membranes 2 or 3 Prereq MBioS 514. Structure and function of biological membranes; composition, transport, receptors, and sensory phenomena.

571 Advanced Topics in Plant Biochemistry 2 Prereq MBioS 514; basic botany. Biochemistry unique to plants; new research advances.

573 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 Protein Biotechnology 3 Biotechnology related to the isolation, modification and large scale commercial production, patenting and marketing of useful recombinant proteins and products.

575 Protein Trafficking in Eucaryotic Cells 3 Same as PI Ph 580.

576 Molecular Biology Techniques I 1 (0-3) Prereq MBioS 514 or c/c. Modern laboratory technique in the sequencing of nucleic acids.

577 Molecular Biology Techniques II 1 (0-3) Prereq MBioS 514 or c/c. Modern laboratory techniques in the use of plasmids as cloning vehicles.

578 Molecular Biology Computer Techniques V 1 (0-3) to 4 (2-6) May be repeated for credit; cumulative maximum 4 hours. Prereq MBioS 301; MBioS 303 or 513. Computer analysis of nucleic acid sequences and protein structure. Cooperative course taught by WSU, open to UI students (MMBB 578).

579 Biochemistry Seminar 1 or 2 May be repeated for credit; cumulative maximum 10 hours. Required of all graduate students in biochemistry.

581 Seminar in Animal Physiology 1 Same as A S 540.

593 Research Proposal 2 May be repeated for credit; cumulative maximum 4 hours. Written and oral presentation of research proposal in biochemistry.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

School of Music and Theatre Arts

The School of Music and Theatre Arts offers courses of study leading to the degrees of Bachelor of Music, Bachelor of Arts in Theatre and Drama, Master of Arts in Music, Master of Arts in Theatre and Drama, and Master of Arts in the Teaching of Theatre 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;
— to contribute toward a varied humanistic education within the university community.

As an integral part of the academic program, an active schedule of recitals and concerts by students, faculty, and guest artists is maintained. The Music Program is a fully accredited member of the National Association of Schools of Music.

Schedule of Studies

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 those courses selected: Mus 151, 152, 161, 181, 182, 251, 252, 253, 254, 281; approval of the appropriate applied study area coordinator; [approval requires two semesters’ study as specified by each area: Keyboard at 300 level with grade of C or better, Brass and Percussion at 300 level with grade of B- or better, Woodwinds at 300 level with grade of B- or better, and Voice at 200 level with grade of B- or better]; completion of application available from department. Students not passing the upper-division exam after the second attempt will be decertified as music majors. Completion of 24 semester hours;

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.

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 half 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.

PERFORMANCE MAJOR

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. The Keyboard area offers an option With Elective Studies in Pedagogy. An option With Emphasis in Jazz is available to students whose major instruments are flute, saxophone, percussion, or trumpet.

BRASS, PERCUSSION, STRINGS, WINDS OPTION

(136 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.

Freshman Year

First Semester  Hours
Engl 101 [W] (GER) 3
Mus 1811 0 or 1
Mus 251 3
Mus 252 1
Mus Ensemble2 1
Mus Private Lessons 4
Science Elective [Q] (GER) 4

Second Semester  Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER) 6
Mus 161 3
Mus 182 0 or 1
Mus 253 3
Mus 254 1
Mus Ensemble2 1
Mus Private Lessons 4

Sophomore Year

First Semester  Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Communication [C,W] (GER) 3
GenEd 110 [A] (GER) 3
Mus 351 3
Mus 352 1
Mus Ensemble2 1
Mus Private Lessons 4

Second Semester  Hours
GenEd 111 [A] (GER) 3
Math Proficiency [N] (GER) 3
Mus 281 0 or 1
Mus 353 3
Mus 354 1
Mus Ensemble2 1
Mus Private Lessons 4
Secd Inst or Mus 487 2

Junior Year

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

Intercultural [I,G,K] (GER) 3
Mus 360 [M] 3
Mus 435 1
Mus Private Lessons 4
Social Sciences [S, K] (GER) 3
Complete Writing Portfolio

Second Semester  Hours
Mus 361 [M] 3
Mus 435 1
Mus 463 2
Mus 4811 1
Mus Private Lessons 4
Physical Sciences [P] (GER) 4

Senior Year

First Semester  Hours
Biological Sciences [B] (GER) 4
Mus 455 2
Mus Ensemble2 1
Mus Private Lessons 4
Music Electives 4
Tier III Course [T] (GER) 3
Electives 3

Second Semester  Hours
Mus 453 2
Mus 482 1
Mus Ensemble 1
Mus Private Lessons 4
Music Electives 4

FLUTE, SAXOPHONE, PERCUSSION, AND TRUMPET PERFORMANCE (EMPHASIS IN JAZZ STUDIES)

(133 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.

Freshman Year

First Semester  Hours
Applied 4
Engl 101 [W] (GER) 3
Mus 251 3
Mus 252 1
Mus Ensemble 1
Science Elective (GER) 4

Second Semester  Hours
Applied 4
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER) 3
Mus 161 3
Mus 181 1
Mus 253 3
Mus 254 1
Mus Ensemble2 1
Mus Private Lessons 4

Sophomore Year

First Semester  Hours
Applied 4
Communication [C,W] (GER) 3
GenEd 110 [A] (GER) 3
Mus 182 1
Mus 257 2
Mus 351 3
### Freshman Year

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### Sophomore Year

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<td>Math Proficiency [N] (GER)</td>
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<td>Mus 361 [M] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<th>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</th>
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<td>Mus 451</td>
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<td>Mus Ensemble¹</td>
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<td>Music Electives</td>
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<td>Secondary Instrument</td>
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<td>Tier III Course [T] (GER)</td>
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### Keyboards Option

**FYDA**

137 Hours

- 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.

### Freshman Year

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<td>Mus 252</td>
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<td>Mus Ensemble¹</td>
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### Sophomore Year

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<td>Math Proficiency [N] (GER)</td>
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<td>Mus 361 [M]</td>
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<td>Mus Private Lessons</td>
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#### Second Semester

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### Senior Year

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<td>Mus 465</td>
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<td>Mus 499</td>
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#### Second Semester

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<th>Physical Sciences [P] (GER)</th>
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### Keyboards with Elective Studies in Pedagogy Option

**FYDA**

135 Hours

- 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.
## BACHELOR OF MUSIC, WITH ELECTIVE STUDIES IN BUSINESS

**School of Music and Theatre Arts**

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<th>First Semester</th>
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<td>Mus 453</td>
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<td>Mus Ensemble¹</td>
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<td>Mus Private Lessons</td>
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¹Chosen from Mus 428-444.

### Freshman Year

**First Semester**

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<td>Mus 351</td>
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<td>Mus 352</td>
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<td>Mus Ensemble¹</td>
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<td>Mus Private Lessons</td>
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<td>Science Elective [Q] (GER)</td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
<td>6</td>
</tr>
<tr>
<td>Mus 161</td>
<td>3</td>
</tr>
<tr>
<td>Mus 182¹</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Mus 253</td>
<td>3</td>
</tr>
<tr>
<td>Mus 254</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble²</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
</tbody>
</table>

²Class piano credits not required.

### Sophomore Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 163 [G]</td>
<td>3</td>
</tr>
<tr>
<td>Mus 360 [M]²</td>
<td>3</td>
</tr>
<tr>
<td>Mus 435 or 438</td>
<td>2</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>4</td>
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</tbody>
</table>

²Mus 453 or 428-444.

### Junior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Language</td>
<td>4</td>
</tr>
<tr>
<td>Mus 428</td>
<td>1</td>
</tr>
<tr>
<td>Mus 491</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Social Science [S,K] (GER)</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>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>4</td>
</tr>
<tr>
<td>Mus 371 or 372</td>
<td>2</td>
</tr>
<tr>
<td>Mus 428</td>
<td>1</td>
</tr>
<tr>
<td>Mus 453</td>
<td>2</td>
</tr>
<tr>
<td>Mus 481</td>
<td>1</td>
</tr>
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### Senior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Science [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 360 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Mus 465</td>
<td>2</td>
</tr>
<tr>
<td>Mus 483</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble²</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
</tbody>
</table>

²Chosen from Mus 428-444.

### Major in Music

This program offers specialization in music, with elective studies in business. At least 42 of the hours required for this degree must be 300-400-level courses.

Students following this option are required to present an acceptable senior half recital in the major performance medium.

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.

Economics 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 181¹</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Mus 251²</td>
<td>1</td>
</tr>
</tbody>
</table>

¹Chosen from Mus 428-444.
### Bachelor of Music, with Elective Studies in Electrical Engineering and Computer Science (136 Hours)

This program offers specialization in music, with elective studies in Electrical Engineering and Computer Science. At least 42 of the hours required for this degree must be 300-400-level courses.

Students following this option are required to present an acceptable senior half recital in the major performance medium.

This four-year program is designed to meet the needs of students wishing professional preparation in music combined with studies in Electrical Engineering and Computer Science. Students select one of several minors offered by the School of Electrical Engineering and Computer Sciences. Certification in the minor requires prior certification in all music courses; 2.5 music average; upper-division exam; piano proficiency exam.

Students must pass the proficiency exam, achieve a 2.5 g.p.a. and a grade of C or better in all music courses. The three credits of 300-400-level Music Electives may not be in music private lessons or ensembles. Class piano credits are not required for the degree. Consultation with the School of Electrical Engineering and Computer Science offers several minors. Criteria for certification of a minor includes completion of 60 credits and meeting other criteria, such as appropriate Math placement. Of the four minors available, two require 16 credits and two require 17 credits. However, both require Math courses not listed in the minor itself but necessary as prerequisites to other courses. The four-year degree plan presented here is an example that presumes inclusion of two semesters of calculus (Math 171 and 172), and two semesters of physics (Phys 201 and 202). Consultation with the School of Electrical Engineering and Computer Science will provide students with details concerning math and physics. Since Math 171 satisfies the GER math proficiency requirement and is necessary in the field, it is a requirement in all versions of the degree. Students may use elective credits for additional math and other prerequisites.

#### Freshman Year

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cpt S 121 or Math 172</td>
<td>4</td>
</tr>
<tr>
<td>Mus 281</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Mus 351</td>
<td>3</td>
</tr>
<tr>
<td>Mus 352</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences [S, K] (GER)</td>
<td>3</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Cpt S 122 or EE 214</td>
<td>4</td>
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<tr>
<td>Intercultural [G, I, K] (GER)</td>
<td>3</td>
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<tr>
<td>Mus 353</td>
<td>3</td>
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<tr>
<td>Mus 354</td>
<td>1</td>
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<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Sophomore Year

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 163</td>
<td>3</td>
</tr>
<tr>
<td>Mus 257 or 258</td>
<td>0 or 2</td>
</tr>
<tr>
<td>Mus 360</td>
<td>3</td>
</tr>
<tr>
<td>Mus 452</td>
<td>2</td>
</tr>
<tr>
<td>Mus 435 or 428</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>EE/CS Minor Course(s)</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>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 361</td>
<td>3</td>
</tr>
<tr>
<td>Mus 481</td>
<td>1</td>
</tr>
<tr>
<td>Mus 435 or 428</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Junior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 161</td>
<td>3</td>
</tr>
<tr>
<td>Mus 182</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Mus 253</td>
<td>3</td>
</tr>
<tr>
<td>Mus 254</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Theat 160 [H] (GER)</td>
<td>3</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE/CS Minor Course(s)</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus 496</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>6/7 or 3</td>
</tr>
</tbody>
</table>

#### Senior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>EE/CS Minor Course(s)</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>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus 481</td>
<td>1</td>
</tr>
<tr>
<td>Mus 435 or 428</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE/CS Minor Course(s)</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus 496</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>6/7 or 3</td>
</tr>
</tbody>
</table>

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1. Class piano credits not required for degree.
2. Fall only.
3. Spring only.

### Bachelor of Music, with Elective Studies in Theatre (134 Hours)

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

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 181</td>
<td>1</td>
</tr>
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<td>Mus 251</td>
<td>1</td>
</tr>
<tr>
<td>Mus 252</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE/CS Minor Course(s)</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus 481</td>
<td>1</td>
</tr>
<tr>
<td>Mus 435 or 428</td>
<td>1</td>
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<tr>
<td>Mus Private Lessons</td>
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**Junior Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
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<tbody>
<tr>
<td>EE/CS Minor Course(s)</td>
<td>3</td>
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<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
<td>6</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus 496</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>6/7 or 3</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>EE/CS Minor Course(s)</td>
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</tr>
<tr>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus Ensemble 428-444</td>
<td>1</td>
</tr>
<tr>
<td>Mus 496</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>6/7 or 3</td>
</tr>
</tbody>
</table>

---

1. Mus 257 (fall only, alternate years) or 258 (fall only) required.
This program offers professional preparation in music with specialization in composition. The curriculum is designed to prepare students in contemporary classical composition and allied fields.

Requirements include: Upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music classes; senior recital. 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.

This option provides teacher certification in Designated Arts: Music (Choral, Instrumental, and General). Requirements include: C or better in all music and education courses; 2.5 music average; 2.5 education average; 2.5 overall average; 4 credits vocal performance for instrumentalists; 4 credits instrumental performance for vocalists; upper-division exam, piano proficiency, solo half-recital. Approved Performing Groups: A minimum of 1 hour during each of 7 semesters, to include at least one semester of Mus 435 for instrumentalists and 428 for vocalists. Include a minimum of 2 hours in choral and 2 hours in instrumental performing groups.

This 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.
Mus 281 0 or 1 12
Mus 351 3
Mus 352 1
Mus 491 2
Mus Ensemble 1
Mus Private Lessons 2
Physical Sciences [P] (GER) 4
T & L 300 1

Second Semester
GenEd 111 [A] (GER) 3
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

Junior Year
First Semester
Hours
Mus 360 [M] 3
Mus 482 1
Mus 488 3
Mus 493 1
Mus Ensemble 1
Mus Private Lessons 2
T & L 302 2
T & L 303 2
T & L 317 2
Complete Writing Portfolio

Second Semester
Hours
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Mus 181 3
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
GenEd 111 [A] (GER) 3
Mus 161 3
Mus 253 3
Mus 254 1
Mus Ensemble 1
Mus Private Lessons 2

Sophomore Year
First Semester
Hours
Biological Sciences [B] (GER) 4
Intercultural [I,G,K] (GER) 3
Mus 182 3
Mus 351 3
Mus 352 1
Mus 491 2
Mus Ensemble 1
Mus Private Lessons 2
T & L 300 1

Second Semester
Hours
Mus 353 3
Mus 354 1
Mus 281 0 or 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

Fifth Year
First Semester
Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Mus 453 or T & L 328 1 2
Physical Science [P] (GER) 4
T & L 478 2

Second Semester
Hours
Mus 497 4
T & L 415 12

1 T & L 328 required for degree; Mus 453 or 455 required.

INSTRUMENTAL/GENERAL ENDORSEMENT
OPTION (153 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.

Freshman Year
First Semester
Hours
Arts & Humanities [H,G] (GER) 3
Mus 360 [M] 3
Mus 488 2
Mus Ensemble 1
Mus Private Lessons 2
T & L 404 2
T & L 445 2

Second Semester
Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 6
Tier III Course [T] (GER) 3

Junior Year
First Semester
Hours
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

Second Semester
Hours
Mus 497 4

1 T & L 328 required for degree; Mus 453 or 455 required.
### Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>3</td>
</tr>
<tr>
<td>Biological Science [B]</td>
<td>4</td>
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<tr>
<td>Ed Psych</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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</tr>
<tr>
<td>Mus 361 [M]</td>
<td>3</td>
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<td>Mus Ensemble</td>
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<td>Mus Private Lessons</td>
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</tr>
<tr>
<td>Science Elective (GER)</td>
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<tr>
<td>T &amp; L 302</td>
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<td>T &amp; L 303</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 317</td>
<td>2</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>Biological Science [B]</td>
<td>4</td>
</tr>
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### Sophomore Year

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### Senior Year

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### Second Year

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### Third Year

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### Fourth Year

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### MA Degree—First Semester

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<td>T &amp; L 400</td>
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### Bachelor of Arts in Music (120 Hours)

This four-year program is designed to meet the needs of students wishing a broad liberal arts background with a major in music. Of the total 120 credits required for a degree in this program, 73 credits are devoted to courses outside music, including the General Education Requirements. Non-music courses other than those used for the GERs must be at the 200-level or above. 40 credits of the 120 required for the degree must be in 300-400-level. Music credits beyond the required 47 credits in music add to the number of credits required in the degrees.
Hier. 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**

<table>
<thead>
<tr>
<th>Semester</th>
<th>First Semester</th>
<th>Hours</th>
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<td>Mus 181 1</td>
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<td>Mus 251 2</td>
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<td>Mus 252 2</td>
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**Second Semester**

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<td>Mus 161 4</td>
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<td>Mus 182 8</td>
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<td>Mus 253 4</td>
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**Sophomore Year**

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<td>Math Proficiency [N] (GER)</td>
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**Second Semester**

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**Junior Year**

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<td>Intercultural [I,L,G,K] (GER)</td>
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<td>Mus 360 [M] 4</td>
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**Second Semester**

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**Senior Year**

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**Second Semester**

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<td>300-400-level Music Elective</td>
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<td>Tier III Course [T] (GER)</td>
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<td>Music performing group required if enrolled for applied music, but not required in degree or class piano credits; not required in degree. 1</td>
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**Jazz Studies Minor**

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<td>Jazz Studies Minor</td>
<td>Required courses: Mus 257, 258, 362, 457, 458, and one 3-credit Mus course; four credits from 438, 439, 440.</td>
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**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, 365, 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**

*Professor and Theatre Arts and Drama Coordinator, L. J. Harris; Associate Professors, G. R. Caldwell, T. Converse, L. Furman, W. H. Shephard.*

The Theatre Arts and Drama Program provides theatre students with a foundation of studies in production, history and analysis of the theatre arts within a liberal arts context. As an integral part of the academic program, WSU Theatre presents a regular schedule of productions by faculty and students. The undergraduate curriculum offers a well-rounded background in all of the major disciplines of theatre.

**Schedule of Studies**

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 REQUIREMENTS (120 HOURS)**

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<th>Semester</th>
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<td>Freshman Year</td>
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<td>Engl 101 [W] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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<td>Junior Year</td>
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<td>Arts &amp; Humanities [H,LG], Intercultural [I,L,G,K], or Social Sciences [S,K] (GER)</td>
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**Second Semester**

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**Senior Year**

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<td>Literature Elective [H] (GER) recommended</td>
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<td>Theat 496</td>
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School of Music and Theatre Arts

Freshman Year

First Semester
- Choral Ensemble: 1 Hour
- Engl 101 [W] (GER): 3 Hours
- GenEd 110 [A] (GER): 3 Hours
- Mus 203 or 303: 2 Hours
- Mus 251: 3 Hours
- Mus 252: 1 Hour
- Theat 260: 3 Hours

Second Semester
- Choral Ensemble: 1 Hour
- Communication Proficiency [C, W] (GER): 3 Hours
- GenEd 111 [A] (GER): 3 Hours
- Mus 203 or 303: 2 Hours
- Mus 253: 3 Hours
- Mus 254: 1 Hour
- Tier I Science [Q] (GER): 3 Hours

Sophomore Year

First Semester
- Choral Ensemble: 1 Hour
- Dance 210: 1 Hour
- Math Proficiency [N] (GER): 3 or 4 Hours
- Mus 181: 1 Hour
- Mus 203 or 303: 2 Hours
- Physical Sciences [P] (GER): 4 Hours
- Theat 261: 3 Hours
- Theat 496: 1 Hour

Second Semester
- Biological Sciences [B] (GER): 4 Hours
- Choral Ensemble: 1 Hour
- Dance 211: 1 Hour
- Mus 182: 1 Hour
- Mus 203 or 303: 2 Hours
- Theat 361: 3 Hours
- Theat 363 or 364: 3 Hours

Junior Year

First Semester
- Arts & Humanities [H, G] (GER): 3 Hours
- Dance 310: 1 Hour
- Mus 203 or 303: 2 Hours
- Mus 428: 1 Hour
- Theat 313: 3 Hours
- Theat 365 [M] (GER): 3 Hours
- Theat 467: 3 Hours

Second Semester
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER): 3 Hours
- Arts & Humanities [H, G] (GER): 3 Hours
- Dance 311: 1 Hour
- Mus 203 or 303: 2 Hours
- Mus 428: 1 Hour
- PEACT 145 or 146: 1 Hour
- Theat 366 [M] (GER): 3 Hours

Senior Year

First Semester
- Hours
- Social Sciences [S, K] (GER): 3 Hours
- Theat 163: 3 Hours
- Theat 360: 3 Hours
- Theat 367: 3 Hours
- Theat 496: 1 Hour
- Electives: 3 Hours

Second Semester
- Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S, K] (GER): 3 Hours
- Intercultural [I, G, K] (GER): 3 Hours
- Tier III Course [T] (GER): 3 Hours
- Science Elective: 1 Hour
- Theat 294: 2 Hours
- Theat 496: 1 Hour
- Electives: 3 Hours

Theatre Minor and Supporting Teaching Endorsements

A theatre minor requires 17 credits of which a minimum of 8 must be at the 300-400 level. Required core courses include Theat 260 or 261, 163 or 363, 365 or 366, and 496; and 6 credits of Theatre electives. Also available is a supporting teaching endorsement in drama for students whose primary teaching endorsement is in another field.

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-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 by university employees under the fee waiver 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.

Class Instruction

Mus 102 Piano
103 Voice

Studio Instruction

Mus 201 Organ
202 Piano
203 Voice Prereq c// in Mus 431, 432, or by interview only.

204 Horn
205 Trumpet
206 Trombone
207 Baritone
208 Tuba
209 Percussion
210 Violin
211 Viola
212 Violoncello
213 Contrabass
214 Flute
215 Oboe
216 Clarinet
217 Bassoon
218 Saxophone

319 Secondary Performance Study 2 Prereq music major. Instruction on instruments or voice other than major performing medium.

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.

Mus 301, 401, 501 Organ
302, 402, 502 Piano
303, 403, 503 Voice (for 303 and 403, Prereq c// in Mus 431, 432, or by interview only.)

304, 404, 504 French Horn
305, 405, 505 Trumpet
306, 406, 506 Trombone
307, 407, 507 Baritone
308, 408, 508 Tuba
309, 409, 509 Percussion
310, 410, 510 Violin
311, 411, 511 Viola
312, 412, 512 Violoncello
313, 413, 513 Contrabass
314, 414, 514 Flute
315, 415, 515 Oboe
316, 416, 516 Clarinet
317, 417, 517 Bassoon
318, 418, 518 Saxophone
519 Secondary Performance Study 1 or 2 May be repeated for credit; cumulative maximum 6 hours. Prereq bachelor's degree in music. Instruction on instruments or voice other than major performing medium.

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.

Mus

428 Opera Workshop 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performance may be required.

429 Crimson Company Quartet 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. SATB. All styles of popular music; public performances required.

430 Crimson Company Show Choir 2 (0-8) May be repeated for credit; cumulative maximum 16 hours. By audition only. Pop, rock, and modern music; public performances required.

431 Concert Choir 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Oratorio survey, and beginning composition.

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. Orchestral literature and public performance each semester.

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. Orchestral literature and public performance each semester.

436 Symphonic Band 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Graduate-level counterpart of Mus 441; additional requirements.

437 Wind Symphony 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Organ, piano, and large forms (traditional and experimental).

438 Jazz-Lab Band 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Organ, piano, and large forms (traditional and experimental).

439 Vocal Jazz Ensemble 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Organ, piano, and large forms (traditional and experimental).

440 Jazz Combos 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Organ, piano, and large forms (traditional and experimental).

441 Accompanying 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only.

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 441; additional requirements.

533 Vocal Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 443; additional requirements.

534 Symphony Orchestra 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 435; additional requirements.

535 Chamber Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 434; additional requirements.

536 Jazz-Lab Band 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 439; 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 439; additional requirements.

540 Jazz Combos 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 440; additional requirements.

541 Accompanying 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 441; additional requirements.

Theory

Mus

151 Music Fundamentals I 3 Notation and performance of music fundamentals: pitch, rhythm, scales, key signatures, and intervals.

152 Music Fundamentals II 3 Prereq Mus 151. Notation and performance of music fundamentals: melody, rhythm, scales, intervals, key signatures, triads: preparatory for Mus 251.

153 [H] Musical Style in Composition 3 Intro-duction to musical style in composition, history, and analysis including theory fundamentals, history survey, and beginning composition.

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. For majors, minors, and elem educ majors only. By audition only. Pedal, sightreading, transposition, playing by ear, chord progressions and melody harmonization.

250 Materials and Structures of Music I 3 By examination. Overtones, melody, rhythm, intervals, tonality, modality, penta-scales, two-voiced counterpoint, analytical techniques, composition.

252 Applied Theory I 1 (0-3) By examination. Ear training, conducting, rhythmic reading, sight singing, keyboard, dictation.

253 Materials and Structures of Music II 3 Prereq Mus 251, 252. Writing, analysis of three- and four-voiced homophonic and contrapuntal music, diatonic emphasis, seventh chords, modulation.

254 Applied Theory II 1 (0-3) Prereq c/i Mus 253. Ear training, sight singing, keyboard.

255 Seminar in Composition 1 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 254. By interview only. Original writings in small forms.

257 Jazz Theory 2 Introduction to jazz theory; chord symbols, extended harmony, scales and modes, voicings, bass lines and substitutions.

258 Introduction to Jazz Improvisation 2 May be repeated for credit; cumulative maximum 4 hours. Introduction to jazz improvisation.

281 Class Piano III 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Prereq Mus 182. By audition only. Principles, functional keyboard.

351 Materials and Structures of Music III 3 Prereq Mus 253, 254. Vertical, linear and formal relationships of chromatic music; writing, analysis, coordinated with aural study.

352 Applied Theory III 1 (0-3) Prereq Mus 254. Continued musical development in ear training, sight singing, applied theory, keyboard dictation.

353 Materials and Structures of Music IV 3 Prereq Mus 351. Vertical, linear and formal relationships of 20th century music; writing, analysis, listening.

354 Applied Theory IV 1 (0-3) Prereq Mus 352. Continued development in ear training, sight singing, keyboard and dictation, emphasizing 20th century music.

451 Seminar in Counterpoint 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 353. Contrapuntal techniques of the 16th and 18th century with original stylistic writing.

452 Electronic Music 2 (1-3) Prereq Mus 353. Introduction to computer-controlled digital, analog, and sampling synthesis; topics include sequenc- ing, 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 di- visions, 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 5 V 1-3 May be repeated for credit. Prereq upper-level composition review. Original writing in small and large forms (traditional and experimental).

457 Seminar in Jazz Arranging/Composition 2 Prereq Mus 257. Arranging and composing for instrumental jazz ensembles.
458 Advanced Jazz Improvisation 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 258. Advanced concepts in jazz improvisation.

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.

161 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.


362 [H,D] History of Jazz 3 History of jazz in chronological sequence; social and political contexts of the African-American origins; stylistic developments.

363 [G] Women and Music 3 Survey of the world's history of women in music in their respective social and political contexts.

369 Topics Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

465 Seminar in Major Performance Literature 2 May be repeated for credit; cumulative maximum 6 hours. Prereq Mus 351 or c/. Survey/performance of solo and chamber literature for voice; keyboard, strings, winds, brass, percussion.

466 Seminar in Band Literature and Performance 1 May be repeated for credit; cumulative maximum 4 hours. Survey and analysis of recently published literature for use in instrumental music programs of the public schools.

560 Introduction to Graduate Studies in Music 2 Required of all graduate students in Mus. Basic bibliographic and research techniques; written presentations related to area of emphasis.

561 Seminar in Literature of 20th Century Music 2 Prereq Mus 351. Impressionism, expressionism, neoclassicism, neoromanticism, jazz and recent electronic music.

562 Symphonic Literature 2 Symphony orchestra and symphonic form from its beginning to modern times studied from the score.

566 Seminar in Music History 2 May be repeated for credit; cumulative maximum 6 hours. Prereq Mus 361. Various historic periods and composers.

Music Education, Pedagogy, and Conducting

Mus 371 Diction for Singers 1 Italian and English; International Phonetic Alphabet; fundamental diction principles, applied to each language and oriented to needs of the singer.

372 Diction for Singers II French and German; International Phonetic Alphabet; fundamental diction principles, applied to each language and oriented to needs of the singer.

388 Music for the Classroom Teacher 2 For elementary education majors. Prereq Mus 153 or satisfactory score on music fundamentals test administered by music faculty; admission to Teacher Certification Program. Singing, movement, listening and instrumental methods/re-sources for K-8 grades.


481 Fundamentals of Conducting 1 (0-3) Prereq Mus 254. Basic techniques, patterns, preparations and releases; musical styles and score reading for beginning conductors.

482 Instrumental Conducting 1 (0-3) Prereq Mus 481. Score preparation of orchestra and band literature; transpositions; clefs; rehearsal techniques for instrumental ensembles.

483 Choral Conducting 1 (0-3) Prereq Mus 481. Conducting choral and vocal jazz ensembles.


487 String Techniques 2 (0-6) Prereq Mus 490. String techniques, materials and methods for music education majors.

488 Choral Methods and Materials I 2 (0-6) Prereq Mus 490. Preparation in the administration of choral programs from auditions to the selection and rehearsal of choral literature. Credit not granted for both Mus 488 and 588.

489 Choral Methods and Materials II 2 Prereq Mus 488/588. Development of skills in choral arranging, curriculum construction, research, and job placement. Credit not granted for both Mus 489 and 589.

490 General Music Material/Methods 4 (3-2) Prereq Mus 491. Materials and methods for general music education majors; multiculturalism, collaboration, developmental curriculum and research issues; addressing national standards; observations. Credit not granted for both Mus 490 and 590.

491 Voice Pedagogy 2 (1-3) 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 I 2 (0-6) Prereq Mus 481. Brass, woodwind, and percussion techniques for music education majors.

494 Wind and Percussion Techniques II 2 (0-6) Prereq Mus 493. Brass, woodwind and percussion techniques; elementary instrument conducting for music education majors.

497 Directed Student Teaching in Music V 4-16 Prereq make application and pay certification fees; complete all other coursework for the degree and teacher certificate; receive fingerprinting clearance from Washington state Patrol, FBI and Office of Professional Practices; maintain 2.5 g.p.a. overall and in endorsement area and professional core courses. Placement by interview only at approved sites. Supervised teaching in public schools, including seminars reflecting on effective teaching. S, F grading.

498 Piano Pedagogy Practicum 2 May be repeated for credit; cumulative maximum 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 2 (0-6) Graduate-level counterpart of Mus 488; additional requirements. Credit not granted for both Mus 488 and 588.

589 Choral Methods and Materials II 2 Graduate-level counterpart of Mus 489; additional requirements. Credit not granted for both Mus 489 and 589.

590 General Music/Materials/Methods 4 Graduate-level counterpart of Mus 490; additional requirements. Credit not granted for both Mus 490 and 590.

591 Vocal Pedagogy 2 (1-3) Prereq graduate standing. Graduate-level counterpart of Mus 491; additional requirements. Credit not granted for both Mus 491 and 591.

Problems, Research, Recitals, and Thesis

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

370 Topics - Study Abroad 3 Special topics in music taught in NCXA study abroad programs.

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

496 Topics in Music V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq permission of program coordinator. Advanced seminar with required projects in music history, literature, pedagogy, theory, composition or performance.

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.
Description of Courses

Theatre Arts and Drama

Dance
210 Jazz Dance I 1 (0-3) Basic jazz dance techniques, stage choreography, and performance.

211 Modern Dance I 1 (0-3) Basic modern dance techniques, stage choreography, and performance.

310 Jazz Dance II 1 (0-3) Prereq two years prior dance experience. Advanced jazz dance techniques, stage choreography, and performance.

211 Modern Dance II 1 (0-3) Prereq two years prior dance experience. Advanced modern dance techniques, stage choreography, and performance.

Theat
145 [G] Contemporary World Theatre 3 Examination of contemporary theatrical works illustrating the clash which occurs when people of one culture live in another. Emailed and Web access required.

150 Film History 3 Survey of world cinema throughout century; emphasis on cultural and historical conditions that influenced development of specific genres and practitioners.

160 [H] Introduction to Theatre 3 Drama as prepared and presented for cinema, television, and stage.

163 Theatre Technology: An Introduction 3 (2-3) Introduction to the technical support for theatrical productions: scenery, lighting, sound, costumes; instruction and practical application with WSU theatre productions.

260 Performance I: Acting 3 Intro to creative process of acting from experiential standpoint combined with exercises in interpersonal communication and critical thinking.

261 Performance II: Directing 3 (0-6) Study of the principles, procedures, and practices of stage direction; weekly performance exercises culminating in directing a ten-minute play.

264 Stage Makeup 2 (0-6) Basic techniques in the design and execution of makeup for the stage and television.

294 Stage Speech 2 (0-6) May be repeated for credit; cumulative maximum 4 hours. Techniques and exercises for development of the actor's voice for the stage: voice production, articulation, and application.

313 Movement for Stage 3 (0-6) Prereq interview with instructor. Movement awareness skills for performers, public speakers, and broadcast personnel.

360 Performance II: Acting 3 (0-6) Prereq Theat 260, by interview only. Acting together with practical experience working with student directors and guiding the actor toward structuring a role for performance.

361 Performance II: Directing 3 (0-6) Prereq by interview only. Advanced work in stage direction; weekly exercises focusing on period drama and culminating in directing a one-act play.

362 Script Analysis 3 For directors, designers, performers. Exploration of various methods available for analyzing stage and film scripts. E-mail and Web access required.

363 Lighting for Theatre and Television 3 (2-3) Prereq Theat 163 or by interview only. Stage lighting design and technology; lighting instruments, control systems, principles of optics, color and electricity; practical applications with WSU productions.

364 Scenery: Construction and Painting 3 (2-3) Prereq Theat 163. Constructing and painting scenery; advanced methods for shifting scenery and creating special effects; materials and techniques for the scenic artist.

365 [H] [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; lyrical 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.

450 Performance III: Acting 3 (0-6) May be repeated for credit; cumulative maximum 6 hours. Prereq Theat 360 or by interview only. Creative process of acting together with practical experience working with student directors; acting in an alternative or non-realistic context.

460 Technical Theatre Management 3 Prereq Theat 163. Organization and management of theatrical productions; the role of the stage manager, backstage crews; coordination of designers and directors.

461 Performance III: Directing 3 (0-6) Prereq by interview only. Advanced work in stage direction; weekly exercises focusing on modern, nonrealistic 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, 365, 366, or by interview only. Undergraduate seminar exploring the major developments in dramatic theory, concentrating particularly on the scope and boundaries of postmodern critical methodologies.

467 Topics in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Individualized study and discussion of drama and performance theory from different historical eras and social contexts.

468 [M] Theatre for Young Audiences 3 Prereq Theat 260. Study in evolution of dramatic literature and production demands of 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 emphases 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// in Theat 470 or 570. Applications of puppetry arts theory to specific emphases: production, education, and therapy. Credit not granted for both Theat 471 and 571.

472 Drama Therapy 3 Prereq current knowledge in psychology/counseling theory. Balanced theoreti
cal and experiential approach toward understanding therapeutic applications of drama and theatre. Credit not granted for both Theat 472 and 572.

480 Playwriting 3 Prereq Eng 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 (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 3 Prereq by interview only. Practical application of acting techniques during the production of plays.

499 Special Problems 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.

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.
Department of Natural Resource Sciences


Natural resources are the ultimate basis for much of the environmental quality, social well being and economic status in the State of Washington and the world. Issues and concerns surrounding natural resources are of extraordinary importance 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.

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/pre-veterinary science; 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 GERs 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. There is greater depth in one specific educational area 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 contact the department to obtain the most current information.

The structure of the undergraduate curriculum is such that it is very feasible (with some additional time) to pursue either dual natural resource majors or a Major in one field and Minor in another natural resource field. The Department offers 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 professional 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 cooperative education opportunities in their chosen field.

Facilities such as the department's undergraduate project laboratory; various teaching and research laboratories; bear research facility; animal holding facilities, greenhouses and grasslands/woodlands at the E.H. Steller Center; the Hudson Biological Reserve at Smoot Hill; the Kramer/Palouse Natural Area; the Ownby Herbarium; and the 12,000-acre 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/~nr/.

Schedule of Studies

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 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 GER’s, basic science requirements and natural resource core takes a core of forestry classes in such areas as forest measurements/remote sensing, silviculture, harvesting, soils, watershed and range management. Each student also selects a professional option. The forestry options include Business Management, Forest Resources, 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 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. The Forest Business option (with business minor) provides students with a basic understanding of principles needed in the business aspects of forestry in the public and private sectors. In addition completion of the Forest Business option satisfies all the requirements for a minor in Business Administration. The Directed Studies option provides a student with the opportunity to develop a professional program that will meet individual career goals.

FIRST AND SECOND YEAR REQUIREMENTS

The first two years are common to all forestry degree programs. Please consult your advisor about when courses are available since some courses are taught only once yearly or on alternate years:

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course</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>NATRS 100</td>
<td>1</td>
</tr>
<tr>
<td>Stat 212 [N] (GER)</td>
<td>4</td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 201 [S] or Econ 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 104 [B] or 120 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107</td>
<td>4</td>
</tr>
<tr>
<td>NATRS 101</td>
<td></td>
</tr>
</tbody>
</table>

Sophomore Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Degree Program Course²</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 204</td>
<td>2</td>
</tr>
<tr>
<td>NATRS 280¹</td>
<td>4</td>
</tr>
<tr>
<td>NATRS 300</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 301</td>
<td>3</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 302 [M]</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 312</td>
<td>2</td>
</tr>
<tr>
<td>NATRS 313</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 374 or SoilS 474</td>
<td>3</td>
</tr>
<tr>
<td>Soils 201</td>
<td>3</td>
</tr>
</tbody>
</table>

Forest Business Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acctg 230, B Law 210, Dec S 215, Dec S 340.</td>
<td>3</td>
</tr>
<tr>
<td>Not less than three courses from Mgt 301, R E 305, I Bus 380, Ins 320, Mtkg 360, Fin 325, MIS 350, 372.</td>
<td>3</td>
</tr>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATRS 418</td>
<td>2</td>
</tr>
<tr>
<td>NATRS 440 or ES/RP 486</td>
<td>3 or 4</td>
</tr>
<tr>
<td>NATRS 470</td>
<td>2</td>
</tr>
</tbody>
</table>

Required Business¹      | 3 or 4|

Second Semester Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATRS 414</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 420 or 410 (both required)</td>
<td>2 or 3</td>
</tr>
<tr>
<td>NATRS 460</td>
<td>3</td>
</tr>
<tr>
<td>Required Business¹</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

³ At least 16 credits of approved electives. Not more than one course from Acctg 230, 231, B Law 210, Dec S 215, 340, Econ 102, Mgt 101. Not less than three courses from Mgt 301, R E 305, I Bus 380, Ins 320, Mtkg 360, Fin 325, MIS 350, 372.

One from: Ag Ec 409; Math 140, 201, 202; Stat 401, 412, 422.

DIRECTED STUDIES OPTION (131 HOURS)

Junior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>3</td>
</tr>
<tr>
<td>or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 201 [W], H D 205 [C], or ComS 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 280</td>
<td>4</td>
</tr>
<tr>
<td>NATRS 305</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 311</td>
<td>3</td>
</tr>
</tbody>
</table>

Complete Writing Portfolio

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>3</td>
</tr>
<tr>
<td>Forestry Elective¹</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 410 or 420 (both required)</td>
<td>2 or 3</td>
</tr>
<tr>
<td>NATRS 438 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Restricted Math Elective¹</td>
<td>3</td>
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Senior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>3</td>
</tr>
<tr>
<td>Forestry Electives¹</td>
<td>6</td>
</tr>
<tr>
<td>or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 414</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 420 or 410 (both required)</td>
<td>2 or 3</td>
</tr>
<tr>
<td>NATRS 460</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>6</td>
</tr>
<tr>
<td>or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 414 [M]</td>
<td>3</td>
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<tr>
<td>NATRS 420 or 410 (both required)</td>
<td>2 or 3</td>
</tr>
<tr>
<td>NATRS 460</td>
<td>3</td>
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</table>

FORESTRY MANAGEMENT OPTION (129 HOURS)

Junior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>3</td>
</tr>
<tr>
<td>or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 418</td>
<td>2</td>
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<tr>
<td>NATRS 440 or ES/RP 486</td>
<td>3 or 4</td>
</tr>
<tr>
<td>NATRS 470</td>
<td>2</td>
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</table>

Required Business¹      | 3 or 4|

Second Semester Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATRS 414</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 420 or 410 (both required)</td>
<td>2 or 3</td>
</tr>
<tr>
<td>NATRS 460</td>
<td>3</td>
</tr>
<tr>
<td>Required Business¹</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
<td>3</td>
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</tbody>
</table>

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.

One of: Ag Ec 409; Math 140.
### RANGE MANAGEMENT MAJOR (122 HOURS)  
#### FYDA

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 universityGER'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

**First Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- Biol 103 [B] (GER)  
- Chem 101 [P] or 105 [P] (GER)  
- Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER)  
- NATRS 300  
- NATRS 301  
- SoilS 201  
- Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- Biol 104 [B] or 120 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER)  
- GenEd 110 [A] (GER)  
- Math 107  
- NATRS 101  
- Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- Biol 104 [B] or 120 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER)  
- GenEd 110 [A] (GER)  
- Math 107  
- NATRS 101

#### Sophomore Year

**First Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- NATRS 204  
- SoilS 201  
- Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- GenEd 111 [A] (GER)  
- NatEc 201 [S] or Econ 101 [S] (GER)  
- Biol 104 [B] or 120 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Math 107  
- Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- GenEd 111 [A] (GER)  
- NatEc 201 [S] or Econ 101 [S] (GER)  
- Biol 104 [B] or 120 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Math 107  
- Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- GenEd 111 [A] (GER)  
- NatEc 201 [S] or Econ 101 [S] (GER)  
- Biol 104 [B] or 120 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Math 107  
- Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- GenEd 111 [A] (GER)  
- NatEc 201 [S] or Econ 101 [S] (GER)  
- Biol 104 [B] or 120 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Math 107  
- Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- GenEd 111 [A] (GER)  
- NatEc 201 [S] or Econ 101 [S] (GER)  
- Biol 104 [B] or 120 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Math 107  
- Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- GenEd 111 [A] (GER)  
- NatEc 201 [S] or Econ 101 [S] (GER)  
- Biol 104 [B] or 120 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Math 107

#### Junior Year

**First Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- Degree Program Course  
- SoilS 451 [M]  
- Complete Writing Portfolio  
- Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- Degree Program Course  
- SoilS 451 [M]  
- Complete Writing Portfolio

#### Senior Year

**First Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  
- Degree Program Course  
- SoilS 451 [M]  
- Complete Writing Portfolio

### 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 other 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 universityGER'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 ecology, and conservation biology. Opportunities for specialization and pursuit of individual student interests beyond the wildlife core are provided through completing either the Pre-Vet School option, or a Directed Studies option wherein students may select approved electives in the areas of habitat ecology, aquatic ecology, animal ecology and conservation biology.

#### Freshman Year

**First Semester**
- Biol 103 [B] (GER)  
- Chem 101 [P] or 105 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)

#### Sophomore Year

**First Semester**
- Biol 103 [B] (GER)  
- Chem 101 [P] or 105 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)

#### Junior Year

**First Semester**
- Biol 103 [B] (GER)  
- Chem 101 [P] or 105 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)  
- Second Semester
- Biol 104 [B] (GER)  
- Chem 102 [P] or 106 [P] (GER)
Sophomore Year

First Semester
- Ag Ec 201 [S] or Econ 101 [S] (GER) 4
- Chem 200 4
- NATRS 204 3
- NATRS 280 2
- Stat 221 [N] (GER) 4

Second Semester
- HD 205 [C] or ComSt 102 [C] (GER) 3
- Intercultural [I,G,K] (GER) 3
- MBioS 303 3
- NATRS 312 2
- Phys 101 [P] (GER) 4

Junior Year

First Semester
- MBioS 301 4
- NATRS 300 or Biol 372 3
- NATRS 301 3
- NATRS 435 4

Second Semester
- Arts & Humanities [H,G] (GER) 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- NATRS 302 [M] 3
- NATRS 436 [M] 4
- Tier III Course [T] (GER) 3

Senior Year

IF granted early admission into Vet School:
- Approx. 33 credits during first year of Vet School; ultimately to be awarded B.S. in Natural Resource Sciences, Wildlife/Pre-Vet Major concurrent with completion of DVM.

IF NOT granted early admission into Vet School:
- Will pursue the schedule below to complete the B.S. in Natural Resource Sciences, Wildlife Ecology Major/Pre-Vet Option during year 4:

First Semester
- Animal Systematics Elective 3-4
- NATRS 311 3
- NATRS 450 [M] 3
- Stat 412 3
- Elective 3-4

Second Semester
- Animal Systematics Elective 2-4
- NATRS 101 1
- NATRS 470 2
- NATRS 438 3
- NATRS 441 4

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.

Freshman Year

First Semester
- Biol 103 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- Math 107 3
- NATRS 100 1

Second Semester
- Biol 104 [B] or 120 [B] (GER) 4
- GenEd 110 [A] (GER) 3
- Geol 102 [P] (GER) 4
- NATRS 101 1
- Stat 212 [N] (GER) 4

Sophomore Year

First Semester
- Ag Ec 201 [S] or Econ 101 [S] (GER) 3
- Chem 200 [S] or Econ 101 [S] (GER) 3
- ComSt 102 [C] (GER) 3
- NATRS 204 2
- NATRS 280 2
- Stat 212 [N] (GER) 4

Second Semester
- HD 205 [C] or ComSt 102 [C] (GER) 3
- Intercultural [I,G,K] (GER) 3
- MBioS 303 3
- NATRS 312 2
- Phys 101 [P] (GER) 4

Junior Year

First Semester
- MBioS 301 4
- NATRS 300 or Biol 372 3
- NATRS 301 3
- NATRS 435 4

Second Semester
- Arts & Humanities [H,G] (GER) 3
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- NATRS 302 [M] 3
- NATRS 436 [M] 4
- Tier III Course [T] (GER) 3

Senior Year

IF granted early admission into Vet School:
- Approx. 33 credits during first year of Vet School; ultimately to be awarded B.S. in Natural Resource Sciences, Wildlife/Pre-Vet Major concurrent with completion of DVM.

IF NOT granted early admission into Vet School:
- Will pursue the schedule below to complete the B.S. in Natural Resource Sciences, Wildlife Ecology Major/Pre-Vet Option during year 4:

First Semester
- Animal Systematics Elective 3-4
- NATRS 311 3
- NATRS 450 [M] 3
- Stat 412 3
- Elective 3-4

Second Semester
- Animal Systematics Elective 2-4
- NATRS 101 1
- NATRS 470 2
- NATRS 438 3
- NATRS 441 4

WILDLAND ECOLOGY MAJOR, PRE-VETERINARY OPTION (120 HOURS) \( \checkmark \) FYDA

Freshman Year

First Semester
- Biol 103 [B] (GER) 4
- Chem 105 [P] or 115 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3

Second Semester
- Biol 104 [B] (GER) 4
- Chem 106 [P] or 116 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 107 4
### Freshman Year

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### Second Semester

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### Sophomore Year

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### Junior Year

**First Semester**

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**Second Semester**

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**Complete Writing Portfolio**

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### Senior Year

**First Semester**

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<td>SoilS 201</td>
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**Second Semester**

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<td>Tier III Course [T] (GER)</td>
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**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). The department in conjunction with the Environmental Science and Regional Planning program offers a Ph.D. in Environmental and Natural Resource Sciences. Under the broad rubric of each graduate degree, students may specialize in a variety of biological, physical or social science aspects of natural resources by virtue of either/or 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 meet the Graduate School's minimum admission requirements, complete the Department's supplemental application form, have three letters of reference and GRE scores submitted to the Department, and have at least one member of the Department's faculty willing to serve as the student's major advisor. Students interested in graduate study in Natural Resource Sciences should consult the WSU Graduate Bulletin and directly contact the Department for further information on opportunities and requirements.

### 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 Biol 423, 428, 432.

**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, at least 9 credit hours of courses numbered 300 or higher, and at least 1 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

Note: Some courses are offered on an alternate year basis only. Those courses are designated with an (a/y) indicator at the end of the course description.

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 spread sheets in natural resources. Field trips required.

280 Introductory Wildlife Management 4 (3-3) Prereq Biol 104 or 120. An introductory course in the principles of wildlife management. Field trip required.

300 Natural Resource Ecology 3 Prereq Bio S 103; Bio S 104 or 120. Ecology is 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 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.

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 E 231.

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 P 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 P 277), open to WSU students.

331 Forest Pathology 2 (0-6) Same as Pl P 331. (a/y)

346 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 (For 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 wilderness recreation. Cooperative course taught by UI (RR/T 287), open to WSU students.

372 Wildland 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 nonaptive 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 (2-3) Same as SoilS 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 (RRT 385), open to WSU students.

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. (a/y)

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 Dec S 215, 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 V 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. (a/y)

421 Fish Health Management 3 (2-3) Prereq MBioS 101. Epidemiology, prevention, diagnostics, and treatment of infectious and non-infectious diseases of free-living and confined finfish and shellfish. Cooperative course taught by UI (Fish 424), open to WSU students.

422 Tropical Dendrology and Ecology 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. (a/y)

423 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq junior standing or by interview only. Topical issues in natural resource sciences.

424 Concepts in Aquaculture 2 Prereq MBioS 250, NATRS 421, or instructor's permission. Concepts and methods of extensive and intensive aquaculture in warm and cold water systems. One 1-day field trip. Cooperative course taught by UI (Fish 422), open to WSU students.

425 Concepts in Aquaculture Laboratory 1 (0-3) Prereq MBioS 250, NATRS 421, or instructor's permission. Laboratory for NATRS 424. Concepts and methods of extensive and intensive aquaculture in warm and cold water systems. One-day field trip required. Cooperative course taught by UI (Fish 422), open to WSU students.

428 Resolving Environmental Conflicts 4 (3-3) Same as R S 435. Credit not granted for both NATRS 428 and 528.

430 Introduction to Wildland Fire 3 Prereq NATRS 300. Physical nature and behavior of wildland fire; the fire environment; fire ecology; practice of wildland fire management. Field trip required. (a/y)

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 (For P 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. (a/y)

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. (a/y)


437 Wildland Fire Management Laboratory 1 (0-3) Prereq NATRS 430. Wildland fuel combustion; fire behavior; fuel evaluation; fire effects; application to fire management. Field trips required. Credit not granted for both 437 and 537. (a/y)

438 Natural Resource Policy and Administration 3 (2-2) Prereq Engl 402, NATRS 312, junior 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 439), 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 (For 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.

445 Nongame Management 2 Same as Biol 445.

450 [M] Conservation Biology 3 Prereq by interview only. Patterns of biological diversity; factors producing changes in diversity, values of diversity, management principles applied to small populations, protected areas, landscape linkages, biotic integrity, restoration, legal issues and funding sources. Credit not granted for both NATRS 450 and 550. Cooperative course taught jointly by WSU and UI (WLF 440).

452 Range Development and Improvements 3 (2-3) Prereq NATRS 351. Developing and improving rangeland forage resources; ecological considerations, plant control, seeding, fertilization, fire, facilitating animal use. Field trips required. Credit not granted for both NATRS 452 and 552. (a/y)

453 Range Livestock Management 3 Rec NATRS 351. Range livestock management, nutrition and behavior; plant responses to grazing; grazing systems; stocking variables. Field trip required. Credit not granted for both NATRS 453 and 553. (a/y)

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 (Ringe 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 instructor permission. 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 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. (a/y)

472 [M] Dispersed Recreation Management 3 (2-3) Prereq NATRS 371. Inventory systems, monitoring and assessing resources and social impacts associated with dispersed recreational use of wildlands. Field trips required. Credit not granted for both NATRS 472 and 572. (a/y)

473 Interpretive Methods Lab 3 Prereq NATRS 373. Development and application of interpretative 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/tourist 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. (a/y)

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. (a/y)

479 Natural Resource Management Internship V 2-12 An elective opportunity for select students to supplement their academic training with practical field experience.

485 Aquatic Ecosystem Assessment Methods for Environmental and Natural Resource Sciences 3 (1-6) Prereq NATRS 460, Biol 310, 411. Integrating structural and geometric analyses, biologic indicators, water quality, and community-level indices into assessments of ecosystem health and biotic integrity.

488 [M] Senior Thesis in Natural Resources V 3-6 May be repeated for credit; cumulative maximum 6 hours. Prereq senior in NATRS.

492 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.

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

510 Forest Finance and Valuation 3 Graduate-level counterpart of NATRS 410; additional requirements. Credit not granted for both NATRS 410 and 510.

513 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 (For 513), open to WSU students.

515 Aquatic Restoration Ecology 3 Review of the response of impacted lake, stream, and wetland systems to rehabilitation and restoration; theory and working examples of each will be addressed. Cooperative course taught by UI (Fish 519), open to WSU students.

516 Forest Growth and Yield 2 Graduate-level counterpart of NATRS 418; additional requirements. Credit not granted for both NATRS 418 and 518.

519 Advanced Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

521 Human Dimensions of Wildlife Management 2 Prereq NATRS 435. An exploration of the elements involved in the management of wildlife for non-consumptive activities, the impacts of such activities on wildlife, the role of national parks and protected areas in providing wildlife viewing opportunities, and public attitudes toward wildlife species. Cooperative course taught by UI (WLF 520), open to WSU students.
522 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 (For S20), open to WSU students. (a/y)

524 Plant Ecophysiology 3 Prereq course in general Ecology or Botany. Adaptations of individual plant species to their environment, emphasizing ecophysiological mechanisms that influence plant establishment, below and above ground productivity. Field trips required. Cooperative course taught by UI (Rnge S60), open to WSU students.

525 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 (Rnge S25).


527 Forest Gene Resource Management 3 Prereq graduate standing. Genetic principles applied to forest ecosystems management; origin and function of genetic diversity; implications of silvicultural practices on gene pools. Field trips required. Cooperative course taught by UI (For S28), open to WSU students.

528 Resolving Environmental Conflicts 4 (3-3) Same as R S S35. Graduate-level counterpart of NATRS 428; additional requirements. Credit not granted for both NATRS 428 and S28.

529 Principles of Population Dynamics 1 Prereq general ecology. Development of the theory of population dynamics from Mathus to the present.

531 Wildlife Nutrition 3 (2-3) Graduate-level counterpart of NATRS 431; additional requirements. Credit not granted for both NATRS 431 and S31. Cooperative course taught by WSU, open to UI students (WLF S31).

535 Wildlife Ecology 4 (3-5) Graduate-level counterpart of NATRS 435; additional requirements. Credit not granted for both NATRS 435 and S35.

536 Advanced Wildlife Management 4 (3-3) Graduate-level counterpart of NATRS 436; additional requirements. Credit not granted for both NATRS 436 and S36.

537 Wildland Fire Management Laboratory 1 (0-3) Graduate-level counterpart of NATRS 437; additional requirements. Credit not granted for both NATRS 437 and S37.

538 Natural Resource Policy and Administration 2 (2-2) Graduate-level counterpart of NATRS 438; additional requirements. Credit not granted for both NATRS 438 and S38.

540 Integrated Forest Management Models 3 (2-3) Graduate-level counterpart of NATRS 440; additional requirements. Credit not granted for both NATRS 440 and S40.

541 Population Ecology and Conservation 4 (3-3) Prereq graduate standing. Graduate-level counterpart of NATRS 441; additional requirements. Credit not granted for both NATRS 441 and S41.

545 Advanced Ecosystem and Landscape Management 2 Prereq enrollment in NRI or by interview only. Ecosystems and landscape management principles, assessments, monitoring, design, and practice, incorporating biological and socioeconomic perspectives.

546 Upland Game Ecology 2 Prereq NATRS 435. Ecology and management of wildlife species using forest and rangeland habitats; current management problems and procedures. Cooperative course taught by UI (WLF S46), open to WSU students. (a/y)

547 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 S47), open to WSU students. (a/y)

550 Conservation Biology 3 Graduate-level counterpart of NATRS 450; additional requirements. Credit not granted for both NATRS 450 and S50.

551 Range Ecology Concepts 3 Prereq two ecology courses. Ecological concepts of dynamics and distribution of plant communities; secondary succession processes, soil-vegetation relationships and development of vegetation classification schemes. Cooperative course taught by UI (Rnge S51), open to WSU students.

552 Range Development and Improvements 3 (2-3) Graduate-level counterpart of NATRS 452; additional requirements. Credit not granted for both NATRS 452 and S52.

553 Range Livestock Management 3 Graduate-level counterpart of NATRS 453; additional requirements. Credit not granted for both NATRS 453 and S53.

554 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 (Rnge S55), open to WSU students.

555 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 (Rnge S55).

556 Foraging Ecology of Herbivores 3 Prereq graduate student or by permission. Synthesis of foraging behavior concepts including nutritive qualities of forages, digestive and metabolic constraints, and diet and habitat selection. Cooperative course taught jointly by WSU and UI (Range S56).

559 Advanced Topics in Range Management V 1-3 May be repeated for credit; cumulative maximum 5 hours. Prereq NATRS 452. Review of current literature and its application in range management.

560 Watershed Management 3 Graduate-level counterpart of NATRS 460; additional requirements. Credit not granted for both NATRS 460 and S60.

571 Wildland Recreation Management 3 (2-3) Graduate-level counterpart of NATRS 471; additional requirements. Credit not granted for both NATRS 471 and S71. (a/y)

572 Dispersed Recreation Management 3 (2-3) Graduate-level counterpart of NATRS 472; additional requirements. Credit not granted for both NATRS 472 and S72. (a/y)

574 Managing Public Use of Wildland Recreation Settings 3 Graduate-level counterpart of NATRS 474; additional requirements. Credit not granted for both NATRS 474 and S74. (a/y)

575 Advanced Remote Sensing 3 (1-4) Same as Solis S74. (a/y)

588 Advanced Topics in Wildlife V 1-3 May be repeated for credit; cumulative maximum 10 hours. Biology and management of wildlife species. Cooperative course taught jointly by WSU and UI (WLF, For, Rnge, and RRTT S10).

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 (RRT S94). (a/y)

595 Seminar in Natural Resource Sciences 1 May be repeated for credit. Literature review; preparation and presentation of reports in natural resource sciences.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

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### Naval Science Program

_Professor of Naval Science; Captain Plucker, Cdr Brownell, Lt Delinski, Lt Feldmeier, Capt Peterson._

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 (N'S 100) each semester. Following graduation, the newly commissioned officer is offered a broad variety of duty assignments including duty on nuclear submarines and surface ships, in naval aviation, and ground or aviation assignments in the Marine Corps. All commissionees go on active duty at full pay and allowances immediately upon graduation.

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### College Program

Application for this program is made directly to the head of the Department of Naval Science. Students receive their uniforms and naval science textbooks at no cost and begin receiving a monthly stipend of $300 per month at the beginning of their junior year. College
Program students may be nominated by the Professor of Naval Science for a two- or three-year scholarship as freshmen, sophomores, or first-semester juniors, if their grades and military aptitude marks are sufficient to warrant such nomination. The program requires one training cruise during the summer following the junior year. It is an all-fleet cruise of the same type and with the same pay as described for the Scholarship Program. Graduates of this program are commissioned as reserve officers and are ordered to active duty upon graduation.

Scholarship Program
The scholarship benefits include tuition, fees, a book allowance, and a monthly stipend of up to $350. 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 or senior 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
Naval-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 all-fleet 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 Edu-
ment 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 must be in 300-400-level courses. Two 300-400-level courses in neuroscience with (M) designation are needed to satisfy the writing in the major university graduation requirement. The major requires specific courses in psychology, zoology, genetics and cell biology and chemistry. Students should refer to suggested courses below.

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 REQUIREMENTS (120 HOURS)

#### Freshman Year

**First Semester**
- Biol 103 [B] (GER) 4
- Chem 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 140 [N] (GER) 3 4
- Neuro 403 [M] 3
- Neuro Electives and/or Neuro 495, 499 3 5

**Second Semester**
- Biol 104 [B] (GER) 1 4
- Chem 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3 4
- Math 220 3
- Math 273 3
- Phys 201 [P] (GER) 4

#### Sophomore Year

**First Semester**
- Arts & Humanities [H,G] (GER) 3
- ComSt 102 [C] (GER) 3
- Intercultural [J,G,K] (GER) 3
- Neuro 301 3
- Phys 101 [P] or 201 [P] (GER) 4

**Second Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3 4
- Chem 240 [E] 4
- Math 140 [N] (GER) 4 5
- Phys 102 [P] or 202 [P] (GER) 4 5

#### Junior Year

**First Semester**
- Biol 315 4
- Biol 438, Psych 384, or Psych 390 3
- Electives (consult advisor) 8
- Complete Writing Portfolio 8

**Second Semester**
- MBioS 303 4
- Neuro 403 [M] 3
- Electives (consult advisor) 8

#### Senior Year

**First Semester**
- Neuro 403 [M] 4
- Neuro Electives and/or Neuro 495, 499 5
- Psych 311 4

**Second Semester**
- Neuro 403 [M] 4
- Neuro Electives and/or Neuro 495, 499 5
- Psych 311 4

### COMPUTER REQUIREMENTS

#### Freshman Year

**First Semester**
- Chem 105 [P] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 111 [A] (GER) 3 4
- Math 171 [N] (GER) 3
- Math 105 [S] (GER) 3
- Math 171 3
- Math 172 3

**Second Semester**
- Biol 103 [B] (GER) 4
- Chem 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 121 4
- Phys 172 4

**Sophomore Year**

**First Semester**
- Chem 240 4
- ECON 101 [S] or 102 [S] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 220 3
- Math 273 3
- Phys 201 [P] (GER) 4

**Second Semester**
- Biol 104 [B] (GER) 4
- Cpt S 122 4
- Math 315 4
- Phys 202 [P] (GER) 4

**Junior Year**

**First Semester**
- Cpt S 224 4
- E E 214 4
- E E 261/262 4
- Math 216 4
- MBioS 303 4
- Neuro 301 3
- Complete Writing Portfolio 3

**Second Semester**
- Arts & Humanities [H,G] (GER) 3
- Biol 333 4
- MBioS 303 4
- Cpt S 322 3
- E E 314 3

**Senior Year**

**First Semester**
- E E 311 4
- Intercultural [J,G,K] (GER) 3
- Neuro 403 [M] 3

**Second Semester**
- Cpt S 523 3
- Neuro 404 3
- Neuro 430 [M] 3
- Tier III Course [T] (GER) 3
- Elective 3

**NOTE:** Courses may be taken in a different order. GER courses other than the ones suggested may be substituted. Check with advisor.

1 Take prior to Neuro 301.
2 Organic 340, 341, 342 (year-long sequence) can replace this course.
3 Math 171, 202, 206, or 210 may substitute.
4 Or another approved statistics course.

### COMPUTATIONAL NEUROSCIENCE REQUIREMENTS (133 HOURS)

#### Freshman Year

**First Semester**
- Chem 105 [P] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 111 [A] (GER) 3
- Math 171 [N] (GER) 3
- Psych 105 [S] (GER) 3
- Math 171 3
- Math 172 3

**Second Semester**
- Biol 103 [B] (GER) 4
- Chem 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 121 4
- Math 172 4

**Sophomore Year**

**First Semester**
- Chem 240 4
- Econ 101 [S] or 102 [S] (GER) 3
- GenEd 111 [A] (GER) 3
- Math 220 3
- Math 273 3
- Phys 201 [P] (GER) 4

**Second Semester**
- Biol 104 [B] (GER) 4
- Cpt S 122 4
- Math 315 4
- Phys 202 [P] (GER) 4

**Junior Year**

**First Semester**
- Cpt S 224 4
- E E 214 4
- E E 261/262 4
- Math 216 4
- MBioS 303 4
- Neuro 301 3
- Complete Writing Portfolio 3

**Second Semester**
- Arts & Humanities [H,G] (GER) 3
- Biol 333 4
- MBioS 303 4
- Cpt S 322 3
- E E 314 3

**Senior Year**

**First Semester**
- E E 311 4
- Intercultural [J,G,K] (GER) 3
- Neuro 403 [M] 3

**Second Semester**
- Cpt S 523 3
- Neuro 404 3
- Neuro 430 [M] 3
- Tier III Course [T] (GER) 3
- Elective 3

1 Satisfies course requirements for entrance into medical school.
2 May be used to satisfy 14 of 17 credits for a minor in computer science; the remaining 3 credits may be electives.
3 May be used to satisfy 13 of 16 credits for a minor in electrical engineering; the remaining 3 credits may be electives.

### PRE-MEDICAL AND PRE-DENTAL REQUIREMENTS (120 HOURS)

#### Freshman Year

**First Semester**
- Biol 103 [B] (GER) 4
- Chem 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Phys 101 [P] (GER) 4

**Second Semester**
- Biol 104 [B] (GER) 4
- Chem 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Psych 105 [S] (GER) 3

#### Sophomore Year

**First Semester**
- Arts & Humanities [H,G] (GER) 3
- Arts & Humanities [H,G] or Social Science [S,K] (GER) 3
- Communication Proficiency [C] (GER) 3
- Intercultural [J,G,K] (GER) 3
- Neuro 301 3
- Phys 101 [P] (GER) 4

**Second Semester**
- Arts & Humanities [H,G] or Social Science [S,K] (GER) 3
- Chem 340 and 341 3
- Math 171 4
- Phys 102 [P] (GER) 4

#### Junior Year

**First Semester**
- Arts & Humanities [H,G] or Social Science [S,K] (GER) 3
- Biol 315 4
- Chem 342 3
- MBioS 301 4

**Second Semester**
- Complete University Writing Portfolio 4

**Senior Year**

**First Semester**
- Biol 315 4
- MBioS 303 4
- Neon 403 3
- Psych 311 3

**Second Semester**
- E E 311 4
- Intercultural [J,G,K] (GER) 3
- Neon 495/499 or other Electives 5
- Psych 311 4
Biol 438, Psych 384, or 390  3
Tier III Course [T] (GER)  3

Second Semester [T] (GER)  3
Neuro 430  3
Neuro 495/499 or other Electives  3
Psych 312  4
Electives  6

1 Should be taken prior to Neuro 301.
2 Pre-med students may take Math 171/172.
3 Or statistics course approved by advisor.

PRE-VETERINARY REQUIREMENTS (120 HOURS)

Freshman Year
First Semester [T] (GER)  3
Biol 103 [B] (GER)  4
Chem 105 [P] (GER)  4
Engl 101 [W] (GER)  3
GenEd 110 [A] (GER)  3

Second Semester [T] (GER)  3
Biol 104 [B] (GER)  4
Chem 106 [P] (GER)  4
GenEd 111 [A] (GER)  3
Psych 105 [S] (GER)  3

Sophomore Year
First Semester [T] (GER)  3
Arts & Humanities [H,G] (GER)  3
Arts & Humanities [H,G] or Social Science [S,K] (GER)  3
Communication Proficiency [C] (GER)  3
Intercultural [I,G,K] (GER)  3
Neuro 301  3
Phys 101 [P] (GER)  4

Second Semester [T] (GER)  3
Arts & Humanities [H,G] or Social Science [S,K] (GER)  3
Chem 240  4
Math 140  4
Phys 102 [P] (GER)  4

Junior Year
First Semester [T] (GER)  3
Arts & Humanities [H,G] or Social Science [S,K] (GER)  3
Biol 438 [M]  3
MBioS 301  4
Neuro 403  3
V An 308  3
Complete University Writing Portfolio

Second Semester [T] (GER)  3
MBioS 303  4
Neuro 404  3
Neuro or other Electives  8

Senior Year
First Semester [T] (GER)  3
Neuro 495/499 or other Electives  5
Psych 311  4

Tier III Course [T] (GER)  3

Second Semester [T] (GER)  3
Neuro 430  3
Neuro 495/499 or other Electives  3
Psych 312  4
Electives  6

1 Should be taken prior to Neuro 301.
2 Math 171, 202, 206 or 210 can substitute.
3 Or statistics course approved by advisor.

MINOR IN NEUROSCIENCE
A minor in neuroscience requires a minimum of 16 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 3 credits and up to 5 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, 526, 529, and 543.

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 Program in Neuroscience must have a minimum grade point average of 3.0 (A=4.0) either on the basis of the last 60 graded semester or 90 graded quarter hours of undergraduate study or on the basis of the 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.

138 Exploration of Neuroscience 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

201 The Brain and Society 3 Introductory neuroscience for non-majors; exploration of neuroscience-related topics of societal importance from an integrated neuroanatomical, biochemical, and behavioral perspective.

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

301 Exploring the Brain 3 Structure and function of the nervous system from single neurons to behavior.

403 [M] Cellular Neurobiology 3 Prereq MBioS 303, Neuro 301, or by interview only. Cellular and molecular interactions occurring within the nervous system.

404 Neuroanatomy 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] Neurosciences of Behavior 3 Prereq Neuro 301, or by interview only. Neural control of feeding and drinking behavior, sociosexual behavior, sleep behavior, and learning and memory.

406 [M] Neuroscience Research Techniques 3 (2-3) Prereq Neuro 301, or by interview only. Historical development, theory and technical bases for contemporary laboratory methods in the neurosciences.

430 [M] Principles of 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; 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 (Biol 461), open to WSU students.

464 Integrative Neural-Endocrine Function 3 Maintenance of homeostasis by coordinated neural and endocrine control.

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

495 Directed Research V 1 (0-3) to 3 (0-9) Prereq Neuro 301; certified major. May be repeated for credit. Introduction to neuroscience laboratory research and literature.

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

501 Principles of Life Science Research 1 Same as V Ph 501.

502 Faculty Research in Pharmacology/Toxicology 1 Same as P/T 502.

504 Principles of Pharmacology I 2 Same as P/T 504.

505 Principles and Methods of Toxicology 3 Same as P/T 505.

507 Principles of Therapeutics 3 Same as P/T 507.
513 Advanced Neuroanatomy 4 Same as V An 513.
520 Functional Neuroscience 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 4 Same as V Ph 529.
530 General and Comparative Neurophysiology 4 Neuroanatomical 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 Neuropathology 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.
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/Clincial 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 Preq 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 explanatory concepts of neuroscience. S, F grading.
561 Receptorology 2 Same as V/P/T 561.
564 Brain-Endocrine Interaction 3 Same as V Ph 564.
577 Behavioral Pharmacology 3 Same as Psych 577.
584 Sensory Bases of Behavior 3 Same as Psych 584.
586 Seminar in Physiological/Sensory Psychology 3 Same as Psych 586.
590 Seminar 1 Same as V Ph 590.
592 Research Seminar 2 Same as V Ph 592.
600 Special Projects or Independent Study Variable credit. S, F grading.
700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

College of Nursing/Intercollegiate College of Nursing

Professor and Dean, D. Detlor; 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. Titeie; Associate Professors, M. Armstrong, J. Banasik, T. Bayne, R. Bindsley, K. Busch, R. Emerson, R. Hoekele, K. Miller, K. Records, M. Rice, L. Schumann, B. Severtsen; Assistant Professor, C. Corbett, D. Doutrich, B. Evans, E. LeCuyer, J. Lohan R. Valdez; Clinical Professor, E. Gruber; Clinical Associate Professor, C. Brown; Clinical Assistant Professor, P. Aamodt, L. Hahn, D. Kinzel, M. Rasmor; Instructors, C. Allen, B. Cardell, R. Cherrier, K. Choka, P. Cleanthous, D. Duncan, A. Fulton, G. Gass, D. Hudzinski, C. Johns, M. Jones, J. Katz, G. Klein, N. Lungström, C. Martin, C. Melin, J. Meyers, B. Moran, B. Morrison, C. Riebe, C. Stusarenko, J. Spuck, M. Stucky, D. Swain, F. Van Gemert, M. Webster; Pre-Nursing Advisor, N. Hoffman.

BACCALAUREATE PROGRAM

The Intercollegiate College of Nursing was established July 1, 1968 and exists as a joint endeavor of Washington State University, Eastern Washington University, Gonzaga University and Whitworth College. Its cooperative undergraduate program is the first of its kind among colleges and universities in the United States.

The program is designed for two types of students - those with no previous preparation in nursing and registered nurses. The curriculum is four academic years of full-time study for the student with no previous preparation in nursing. The length of the program for the registered nurse (RN) is approximately one year of full time study.

The lower-division courses, for students with no previous preparation in nursing (freshman and sophomore years), are offered on the Pullman campus. They provide the student with a foundation in the natural and social sciences and the humanities.

The 300-400-level courses, junior and senior years, are offered at the Intercollegiate College of Nursing in Spokane and in Yakima. They provide the professional preparation in nursing. To apply for admission to the college, students must have at least 60 semester hours and all courses prerequisite to nursing completed the term prior to enrollment in the upper division.

The program of study leads to the degree of Bachelor of Science in Nursing. It is approved by the Washington State 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 advisor on the Pullman campus to select courses that will be applicable to the degree requirements.

Registered nurses who plan to obtain their baccalaureate degree in nursing from Washington State University may obtain admission and curriculum information from their nursing advisors on the Pullman, WSU Tri-Cities and WSU Vancouver campuses.

MASTER OF NURSING PROGRAM

The Graduate Program in Nursing at the Intercollegiate College of Nursing was established in 1983 and has been accredited by the National League for Nursing (NLN) since 1986 and 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 advisor are provided by the Graduate Program Office at the Intercollegiate College of Nursing. For further information, visit: nursing.wsu.edu.

Schedule of Studies

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 NURSING (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 nursing courses. 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.

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*Note: Part-time schedule of study is available; see advisor.

### BACHELOR OF SCIENCE


### 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 College of Nursing. Candidates for the MN degree are required to demonstrate competency in relevant computer applications. A thesis or specified non-thesis option is required.

### Core Courses in the Areas of Concentration

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### Courses Required, Psychiatric/Mental Health Nurse Practitioner

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### Courses Required, Community-Based/Population-Focused Nursing

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### 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

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<th>Course Code</th>
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<td>Assertiveness Training for Nurses</td>
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<td>Nurs 307</td>
<td>Assertiveness Training for Nurses</td>
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*Recommended elective.*
328 Introduction to Gerontological Nursing
2 Prereq c// Nurs 318. Professional values, communication, and functional assessment in care of elders; core knowledge and role development of the gerontological nurse.

350 Therapeutic Communication in Nursing
1 or 2 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.

360 Professional Nursing Concepts and Issues
2 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.

365 Nursing Concepts: Assessment and Application of Physiological Concepts to Nursing Practice I
3 Prereq enrolled in WSU College of Nursing; registered nurse. Integration of pathophysiological assessment, pharmacological nursing concepts with diverse client populations; emphasizing neurological, EENT, skin, musculoskeletal, endocrine, and respiratory systems.

366 Nursing Concepts: Assessment and Application of Physiological Concepts to Nursing Practice II
3 Prereq enrolled in WSU College of Nursing; registered nurse. Integration of pathophysiological assessment, pharmacological nursing concepts with diverse client populations; emphasizing fluid/electrolytes, oncology, GI/GU, cardiovascular; immune system, renal.

390 Laboratory Value Analysis and Interpretation
2 Prereq Nurs 312. Analysis and interpretation of common laboratory values with nursing focused application in selected case scenarios. S, F grading.

391 Concepts of Caring
2 Explores nursing concept of caring using personal narratives, storytelling, and literary discussions to foster scenarios. S, F grading.

392 Therapeutic Touch: A Nursing Modality of Caring and Healing
2 Prereq completion of one semester of nursing or by permission. Explores the broad arena of touch as a means of interpersonal communication and as a mechanism for healing using Krieger-Kunz Method.

398 Special Topics
VI-3 May be repeated for credit; cumulative maximum 6 hours.

400 Nursing Research and Informatics
3 Prereq enrolled in WSU College of Nursing; registered nurse. Application of informatics skills and research processes to clinical practice; incorporates first level informatics concepts.

405 Nursing Leadership
2 Prereq 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 of underlying science and nursing process with the unique population of children and families. S, F grading.

416 Childbearing Health of the Family
2 Prereq Nurs 324, 325; c// Nurs 318, 328. Care of childbearing families within the context of community; newborn health, and men's and women's reproductive health addressed.

417 Nursing Care of Childbearing Families
2 (0-6) Prereq Nurs 324, 325; c// Nurs 318, 328, 415, 416. Nursing care of families during the childbearing continuum and/or acute care settings; combination of clinical and seminar. S, F grading.

424 Psychiatric/Mental Health Nursing Concepts
3 Prereq Nurs 414, 415, 416, 417. Healthy to psychopathological states studied within a nursing framework; includes history, theories, legal/ethical issues of psychiatric/mental health nursing.

425 Nursing Practice: Psychiatric/Mental Health
2 (0-6) Prereq Nurs 414, 415, 416, 417; c// Nurs 424. Clinical application of the nursing process with clients experiencing acute and chronic psychiatric/mental health disturbances. S, F grading.

426 Community Health Nursing Theory
2 Prereq Nurs 414, 415, 416, 417. Synthesis of nursing and public health concepts with focus on community as partner and population-focused practice.

427 Community Health Nursing Practice

430 Senior Practicum
3 (0-9) Prereq Nurs 409, 424, 425, 426, 427. Clinical and theoretical concepts are applied in a concentrated clinical practicum; use of clinical preceptors and student objectives is employed. S, F grading.

3 Prereq enrolled in ICNE consortium university with nursing major; registered nurse. Analysis of clinical decisions and the role of the professional nurse in case management, information management, and policy development.

462 Selected Nursing Concepts: Psychiatric/Mental Health
2 Prereq Nurs 360 or c//; or by interview. Nursing process with individuals and families experiencing psychiatric/mental health disruptions.

465 Nursing Practice: Community and Psychiatric Mental Health
3 (0-9) Prereq Nurs 462 and 440 or c//. Application of community health, public health, and psychiatric/mental health nursing concepts to individuals, families, and communities with identified health needs.

477 Health Care Ethics
2 or 3 Prereq senior standing.
Ethical theories including deontology, teleology, virtue ethics and applicability to ethical dilemmas in nursing. Credit not granted for both Nurs 477 and 577.

478 Plateau Tribes: Culture and Health
3 (2-3) Prereq junior or senior in health care of human services/health professionals. History, culture, and health care needs of the Plateau Indian tribes are addressed; includes both classroom and practicum experience. Credit not granted for both Nurs 478 and 578.

490 Basic Dysrhythmia Interpretation/Advanced Cardiac Life Support
2 Prereq completion of Nurs 420 or c// or permission of instructor. Basic interpretation of common ECG rhythms, dysrhythmias, and application of ACLS dysrhythmia management guidelines.

495 Nursing Practice: Advanced Clinical Practicum
2 (0-6) Prereq enrolled in WSU College of Nursing; course must be taken in graduation semester. Application and integration of theoretical content in an area of nursing practice of special interest to the student.

497 Special Topics in Nursing
V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Nurs 320 or by interview.

498 Special Topics in Nursing
V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Nurs 320 or by interview.

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

504 Methods of Nursing Research
4 Research process as foundational to both conduct of scientific inquiry and utilization of findings.

507 Health Care Policy Analysis
V 2-3 Prereq graduate standing. Analysis of health care system policy; exploration of issues of clinical management and community resource utilization including advocacy techniques.

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.

519 Teaching in the Information Age
3 Prereq basic computer skills; permission of instructor. Focus on educational paradigms consistent with distance education; development of a variety of multimedia materials for nursing education.

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.
543 Advanced Psychiatric Nursing Concepts: Psychiatric/Mental Health Advanced Role Analysis: Advanced Practice
542 V 2-4 Prereq Nurs 521. Group and individualized instruction and evaluation; creating instructional software, use of TV studio, AV, and computers.
543 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.
540 Family and Partner Psychotherapy 4 (2-6) Prereq Nurs 541 and 543 or master's degree in psych/mental health nursing or written permission of instructor. Introduction to theory and practice of family/therapist role including role of therapist in treatment of family as a unit.
541 Psychiatric/Mental Health Nursing: Individuals 3 (4-3) 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 Minics 2 Prereq Nurs 581, 582, or c/. Nursing theoretical differential assessment and management principles of physical/psychiatric symptomatology in determining diagnoses and implementing appropriate treatment.
545 Advanced Concepts of Psychiatric/Mental Health Nursing: Children and Adolescents 5 (3-6) Prereq Nurs 541 and 543 or written permission of instructor. Advanced study of intervention models for psychopathologies evidenced during childhood and adolescence; practicum emphasizes assessment, psychiatric diagnosis, and psychotherapeutic intervention.
546 Practicum in Psychiatric/Mental Health Nursing 4 (1-9) or 5 (1-12) Prereq Nurs 541, 543. 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 settings, 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 Nurs 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: knowledge and skills required to obtain and use data bases.
555 Community-Based/Population-Focused Nursing Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq Nurs 550, 552, 554, 564, and 556 or permission of instructor. Application and integration of theory, research findings, and community analyses/macro-level intervention strategies in performing community-based/population-focused nursing.
556 Community-Based/Population-Focused Role Practicum 3 (2-3) to 6 (2-12) Prereq permission of instructor. Culminating analysis, development, and enactment of advanced practice roles in teaching, practice, or administration of community-based/population-focused nursing.
557 Care Management with At-Risk Infant and Young Child Populations 3 Prereq graduate standing in nursing or by permission. Analysis of biosocial psychosocial 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 biosocial psychosocial health risks of older children and adolescents using models of risk and resiliency in advanced nursing practice.
559 Advanced Nursing Practice with At-Risk Child and Youth Populations Practicum V 2-4 Prereq graduate standing in nursing or by permission; Nurs 557 and 558 or c/. Application of concepts of 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 4 (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) to 3 (2-3) Prereq graduate standing in Nurs. Application of core public health functions in community analysis, program development, and 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, c// in 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, c// in 575, 575, 582. Diagnosis and treatment of inpatient adults and elders with high to critical acuity.
575 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 program and program evaluation. Application of linkages 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.
579 Vulnerable Populations: The Homeless 3 Prereq graduate nursing status or by permission. Analysis of factors placing persons at risk for homelessness; proposal of policy changes based on research and experiential learning.
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 cardiopulmonary, renal, and hematological 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.

583 Promoting Health of Community-Based Elders V 2 (2-0) to 4 (2-0) Prereq graduate standing in Nurs. Advanced practice role in assessment, nursing intervention and public policy regarding multidimensional physical, emotional, and social problems of community-based elderly.

593 Acute Care Internship V 1-10 Prereq Nurs 562, 563, 581, 582; Nurs 571 or 572. Application and integration of theoretical content, research findings, and assessment and intervention strategies into acute care practice.

594 Nursing Care of Children in a School Setting 3 (2-3) Prereq graduate standing in Nurs. Assessment of the school age population including high risk students; development, management, and evaluation of school health services.

595 Internship V 1-10 May be repeated for credit; cumulative maximum 10 hours. Prereq Nurs 562, 563, 581, 582; one of Nurs 567, 569, 570, 571, or 572. Application and integration of theoretical content, research findings, and assessment and intervention strategies into primary care practice. S, F grading.

596 Post-Master's Psychiatric Nurse Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq prior completion of course work for a clinical nurse specialist in Psychiatric Mental Health Nursing or Psychiatric Nurse Practitioner, malpractice insurance as an ARNP with prescriptive authority, by interview only. Supervised performance of the ARNP role in psychiatric nursing care for patients presenting primary psychiatric disorders.

597 Advanced Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours.

598 Advanced Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours.

599 Independent Study Variable credit. S, F grading.

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.

702 Master's Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.

Program in Pharmacology and Toxicology


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. We also welcome applications from applicants who have a bachelor's or professional doctorate degree in Pharmacy. Deficiencies may be rectified during the first year of graduate study, but this may hinder the student's ability to take core P/T courses in the first year. Students in both the 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 facility.

Each student in the program is required to complete the core curriculum:

- MBioS 513/514 (514-PhD only) 6
- P/T 501 1
- P/T 502 1
- P/T 505** 3
- P/T 506 2
- P/T 507** 3
- P/T 555 (PhD only) 4
- P/T 597 1
- V Ph 505* (stats) 4

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; carcinogenesis, 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, immuno-toxicology of drugs of abuse and environmental contaminants; neurobiology, neuropsychopharmacology and behavioral pharmacology; multiple chemical sensitivity; the physiology/biochemistry of neuropeptide transmit-
ters 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. Modern instruments available for pharmacological and toxicological research include: UV-, IR-, CD-, fluorescence-, and FT-NMR spectrophotometers, facilities for NMR, X-ray crystallography, mass spectroscopy, molecular graphic systems, amino acid analysis, oligonucleotide and peptide synthesis, DNA sequencing, flow cytometry, cell sorting and an Electron Microscopy Center are available on campus.

Laboratories of individual faculty members in the Pharm/Tox Program are well equipped with: spectrophotometers, digital imaging, gas chromatographs, 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 464534, Pullman, WA 99164-6534 or e-mail: pharmtox@wsu.edu.

Description of Courses

Pharmacology and Toxicology

P/T

501 Fundamentals of Graduate Research in the Life Sciences 1 Same as V Ph 501.

502 Faculty Research in Pharmacology/Toxicology 1 Prereq graduate standing. Introduction to faculty research for incoming graduate students. S, F grading.

505 Principles and Methods of Toxicology 3 Prereq MBioS 513 or c//; 300-level organ/mammalian physiology (or instructor consent). Basic concepts in mammalian toxicology and the methodology currently employed for toxicological investigations. Cooperative course taught by WSU, open to UI students (FST 505).

506 Principles of Pharmacology 2 Prereq MBioS 513 or c//. Mechanisms of drug action and the factors that modify drug responses; drug design and drug development. Cooperative course taught by WSU, open to UI students (FST 506).

507 Principles of Therapeutics 3 Prereq 300-level organ/mammalian physiology; P/T 506. Organ systems pharmacology, including drug actions, effects, side effects, and interaction of medications used in therapeutics.
Advanced Pharmacokinetics/Toxicokinetics
2 Prereq P/T 506. Kinetics of drug absorption, distribution, elimination, and pharmacologic response. Cooperative course taught by WSU, open to UI students (FST 510A).

Topics in Toxicology
V 1-4 May be repeated for credit; cumulative maximum 12 hours. By interview only. Topics of current interest in toxicology and closely related areas. Cooperative course taught by WSU, open to UI students (FST 511).

Topics in Pharmacology
V 1-4 May be repeated for credit; cumulative maximum 12 hours. By interview only. Topics of current interest in pharmacology and closely related disciplines. Cooperative course taught by WSU, open to UI students (VS 512C).

Metabolism of Drugs and Toxins
2 Prereq MBioS 513/564; Rec P/T 506. Pathways, enzymology and mechanisms of metabolism of drugs, environmental contaminants and other xenobiotics; pharmacological and toxicological implications of metabolism. Cooperative course taught by WSU, open to UI students (FST 532).

Pathophysiology of Blood
2 Same as V Ph 535.

General and Cellular Physiology
4 (3-3) Same as V Ph 535.

Insecticides: Toxicology and Mode of Action
1 Same as Entom 556.

Herbicides: Toxicology and Mode of Action
1 Same as Entom 557.

Pesticide Topics
1 Same as Entom 558.

Brain-Endocrine Interaction
3 Same as V Ph 564.

Fundamentals of Oncology
3 Prereq MBioS 514. Thorough overview of cancer biology encompassing basic cellular and molecular mechanisms of carcinogenesis and tumor progression, treatment and prevention. Cooperative course taught by WSU, open to UI students (FST 572).

Pharmacology and Toxicology Seminar
1 May be repeated for credit; cumulative maximum 12 hours. S, F grading. Cooperative course taught by WSU, open to UI students (FST 597).

Critical Evaluation of Current Pharmacology/Toxicology Research
1 May be repeated for credit; cumulative maximum 6 hours. Prereq P/T 501. Individual study of recent research findings and critical evaluation of these data to instructor and other students.

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 PHARMACOTHERAPY


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 third professional year of the Pharm.D. curriculum is delivered in the newly constructed Health Sciences building located on the Washington State University Spokane Campus. 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. Freshman students who will complete their pre-pharmacy studies at Washington State University are eligible to apply for the College of Pharmacy’s guaranteed admissions 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.

Pre-Pharmacy Requirements

1. Arts and Humanities
   Hours
   - Communication Proficiency (3 hours must be in written communications)
   - Intercultural Studies
   - Social Sciences
   - Tier III Course
   - World Civilizations
   - Writing Portfolio

2. Biology
   Hours
   - Bio 103, 104
   - Chem 105, 106
   - Chem 340, 341, 342
   - Math 140
   - MBioS 302
   - Stat 712
   - MBioS 303

Total Credit Hours: 66

*Courses listed in numbers 1 through 6 above must be selected from the General Education Requirements for Graduation section of this catalog. 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 are to complete the Honors Requirements in place of General Education Requirements.

15. Computer Literacy: All students are required to own or have immediate access to personal computing equipment, and demonstrate competency in the use of word processing and spread sheet software, as well as e-mail and world wide web technologies.

16. First Aid and CPR certification required.

Schedule of Studies

PROFESSIONAL CURRICULUM

The four professional years of the Doctor of Pharmacy (Pharm.D.) program are outlined below. A total of 192 semester hours are required for graduation.

First Year

First Semester

- Biol 315
- Biol 352
- PharP 450
- PharS 437
- PharS 531P

Total Hours: 8

Second Semester

- Biol 353
- PharP 456
- PharP 572P
- PharS 540P
- Electives (Non-Professional)

Total Hours: 13

Second Year

First Semester

- PharP 457
- PharP 573P
- PharP 581P
- PharS 533P
- PharS 542P
- PharS 556P

Total Hours: 17

Second Semester

- PharP 552P
- PharP 574P
- PharS 534P
- PharS 543P
- PharS 544P
- Electives (Non-Professional)

Total Hours: 18

Third Year

First Semester

- PharP 541P
- PharP 553P
- PharP 557P
- PharP 558P

Total Hours: 16

Second Semester

- PharP 559P
- PharP 565P
- PharP 576P
- PharP 588P
- PharP 590P
- Electives (Non-Professional)

Total Hours: 19

Third Year

First Semester

- PharP 541P
- PharP 553P
- PharP 557P
- PharP 558P

Total Hours: 16

Second Semester

- PharP 559P
- PharP 565P
- PharP 576P
- PharP 588P
- PharP 590P
- Electives (Non-Professional)

Total Hours: 20

Total Credit Hours: 192
456 Early Practice Experience I 1 (0-3) Prereq PharS 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 PharS 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 1 1 Pharmacotherapy of infectious diseases. S, F grading.


531P Advanced Pharmacotherapeutics 3 1 Pharmacotherapy of musculoskeletal disorders. S, F grading.


537P Advanced Pharmacotherapeutics 7 1 Pharmacotherapy of endocrine disorders. S, F grading.

538P Advanced Pharmacotherapeutics 8 1 Pharmacotherapy of gastrointestinal disorders. S, F grading.

539P Advanced Pharmacotherapeutics 9 1 Pharmacotherapy of neuropsychiatric disorders. S, F grading.

525P Practical Psychiatric Drug Therapy for Clinicians 3 Review of practical psychiatric drug therapy for physicians, pharmacists, mental health professionals and others working in the mental health field.

531P Clinical Research Methods I: Pharmacoeconomics 2 Prereq PharS 533P, PharP 552P. Pharmacoeconomics and biostatistics.


533P Pediatric Pharmacotherapy 1 Prereq 553P or c/. Parmacotherapy of pediatric medicine.

534P Critical Care Pharmacotherapy 1 Prereq PharS 553 or c/. Pharmacotherapy of critical care medicine.

535P Medication Errors 1 Prereq 3rd professional year student. Identifying and preventing medication errors and misadventures.

538P Parenteral Products 2 (1-3) Prereq PharS 437, 533P. Preparation of intravenous admixtures, parenteral nutrition; pharmacotherapy of fluid/electrolyte disorders, parenteral nutrition, and emergency medications.

541P Physical Assessment 2 (1-3) Prereq PharP 538P; 552P; PharS 543P. Collection and evaluation of patient information; monitoring efficacy and toxicity of pharmacotherapy; physical assessment and clinical laboratory values. S, F grading.

542P Nonprescription/Herbal Products 3 Prereq PharS 553P; 558P. Pharmacotherapy of nonprescription medications and herbal products.

552P Pharmacotherapy I 5 Prereq PharS 533P, 542P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases.

553P Pharmacotherapy II 5 Prereq 552P, PharS 543P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases.

554P Pharmacotherapy III 5 Prereq 552P; PharS 543P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases.

555P Special Topics 2 Contemporary issues in pharmacy.
557P Clinical Pharmacokinetics V 1 (0-3) to 2 (1-3) May be repeated for credit; cumulative maximum 2 hours. Prereq PharmD. S33. Applications of pharmacokinetic principles to safe and effective therapeutic management of individual patients in a clinical setting.

558P Literature Evaluation V 1 or 2 May be repeated for credit; cumulative maximum 2 hours. Prereq PharmD. S53P or c/c. An overview of the biomedical literature emphasizing how to evaluate the pharmacological and biomedicai literature to provide better patient care.

561P Acute Care Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharmD. didactic coursework complete. Advanced practice experience in acute patient care settings.

562P Ambulatory Care Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharmD. didactic coursework complete. Advanced practice experience in ambulatory care settings.

563P Elective I Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharmD. didactic coursework complete. Advanced practice experience in acute or ambulatory patient care settings.

564P Elective II Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharmD. didactic coursework complete. Advanced practice experience in various health care settings.

565P Elective III Advanced Practice Experience V 1 (0-3) to 5 (0-15) May be repeated for credit; cumulative maximum 5 hours. Prereq PharmD. didactic coursework complete. Advanced practice experience in a community pharmacy setting.

567P Institutional Advanced Practice Experience V 1 (0-3) to 5 (0-15) Prereq PharmD. didactic coursework complete. Advanced practice experience in an institutional pharmacy setting.

568P Extended Degree Advanced Practice Experience V 1 (5-3)-20 (0-60) May be repeated for credit; cumulative maximum 20 hours. Prereq five pharmacotherapeutic weekend workshops complete. Advanced practice experience in various health care settings.

572P Pharmaceutical Care Laboratory I 1 (0-3) Prereq PharP 451P or c/c. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

573P Pharmaceutical Care Laboratory II 1 (0-3) Prereq PharP 551P or c/c, PharP 572P. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

574P Pharmaceutical Care Laboratory III 2 (0-6) Prereq PharP 552P or c/c, PharP 573P. Practicum designed to integrate classroom-acquired knowledge, behaviors, and values into professional skills.

575P Pharmaceutical Care Laboratory IV 2 (0-6) Prereq PharP 553P or c/c, PharP 574P. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

576P Pharmaceutical Care Laboratory V 2 (0-6) Prereq PharP 554P or c/c, PharP 575P. Practicum designed to integrate classroom-acquired knowledge, behaviors and values into professional skills.

581P [M] Pharmacy Management 3 Management principles applied to pharmacy practice; health systems; patient care strategies.

582P Pharmacy Law 2 Prereq PharP 554P or c/c. Laws relating to the practice of pharmacy.

599P Special Projects 2 May be repeated for credit; cumulative maximum 4 hours. Laboratory research, clinical research, or comprehensive review of selected subjects. S, F grading.

Department of Health Policy and Administration

Professor and Chair, W. C. Schmidt; Professor, D. A. Sclar, T. L. Skar; Associate Professors, M. M. Ahern, J. S. Coyne, M. S. Hendrix, B. C. Hicks; Assistant Professor, J. Kennedy.

The Department of Health Policy and Administration (HPA) offers the Master of Health Policy and Administration degree at WSU Spokane. The HPA program's mission is: (1) to prepare working students in metropolitan Spokane, eastern Washington, and the Inland Northwest region, and excellent students nationally interested in healthy communities, for a variety of professional health services management positions, and (2) to contribute to community health services enhancement and community health policy development through education, applied research, and service. A core value of the HPA Program and its faculty is to prepare health services managers with the knowledge, skills and values to exercise professional leadership and promote healthy communities.

The 50 credit hour curriculum includes: introductory courses (Introduction to the Health Care System; Health Care Policy and Politics; Law and Ethics of Health Management; Government Regulation of Health Services; Economics of Health Care); core courses (Health Care Cost Accounting; Health Care Finance; Health Management Decision Science; Health Care Management; Quality Management; Research and Evaluation Methods; Health Care Information Systems); electives; 3 credit internship; capstone course, Strategic Management; and 3 credit graduate project.

Basic knowledge of statistics, microeconomics, financial accounting, and computer skills (word processing, spreadsheet) are prerequisites for the required courses. Computer assisted self-study programs and a listing of area classes satisfying the prerequisites are available from the Program.

The Graduate Program in Health Policy and Administration is accredited by the Accrediting Commission on Education for Health Services Administration (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 program meets the quality standards developed by the profession and the health services industry.”

The HPA Program is also admitted to the Western Interstate Commission for Higher Education (WICHE) Western Regional Graduate Program (WRGP). According to WICHE, WRGP “consists of very high quality masters and doctoral degree programs which tend not to be widely available throughout the West.” Admission of the HPA Program means that residents of Alaska, Arizona, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming are eligible to enroll at Washington resident rates of tuition. The WSU Health Policy and Administration Program is the only health administration program admitted to WRGP of the four 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, antitrust, health care financing and cost control.

509 Health Care Economics 3 The economics of allocating, financing and delivering health care services.

510 Health Care Cost Accounting 3 Prereq basic financial accounting; graduate standing. Basic cost-accounting concepts, principles, and applications in the health care setting.


512 Health Management Decision Science 3 Prereq HPA 511. Application of decision science technology to risk-analysis problems in healthcare for both investor-owned and non-profit entities.

515 Health Care Management 3 Introduction to the knowledge, skills, and values associated with the practice of health management.

516 Health Quality Management 3 Overview of the total field of health quality, including strategic quality management programs, quality assurance, quality control, and design.

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.

580 Strategic Management 3 Prereq HPA 511, 515. Key components and processes in strategic planning.

586 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.

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, D. L. Shier; Assistant Professors, M. K. Bloodworth, J. K. Campbell.

The Department of Philosophy offers courses which provide the student with an introduction to fundamental intellectual problems and both classical and contemporary attempts at their solutions. Students are encouraged to develop their own critical faculties.

The department offers a course of study leading to the degree of Bachelor of Arts in Philosophy.

Schedule of Studies

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. 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 Hours
Arts & Humanities [H,G] (GER) 3
Degree Program CourseI 3
Engr 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3

Second Semester Hours
Communications [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Phil 201 3
Science Elective (GER) 4
Social Sciences [S,K] (GER) 3

Sophomore Year

First Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) 3
Biological Sciences [B] (GER) 4
Degree Program CourseI 3
Foreign Language, if necessary, or Elective 4
Elective 1

Second Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) 3
Degree Program CourseI 3
Foreign Language, if necessary, or Elective 4
Physical Sciences [P] (GER) 4

PHILOSOPHY/PRE-LAW REQUIREMENTS (120 HOURS) ✔FYDA

Junior Year

First Semester Hours
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 Hours
Engl 301 [W] (GER) 3
Phil 445, 460, or 470 3
Tier III Course [T] (GER) 3
Elective 6

Senior Year

First Semester Hours
Phil Electives 6
Electives 9

Second Semester Hours
Phil Electives 6
Electives 9

TRADITIONAL PHILOSOPHY REQUIREMENTS (120 HOURS) ✔FYDA

Junior Year

First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Intercultural [I,G,K] (GER) 3
Phil 310 or 420 3
Phil 335 or 340 3
Elective 3

Second Semester Hours
Phil 325 3
Phil 445 or 460 3
Tier III Course [T] (GER) 3
Elective 6

Senior Year
First Semester Hours
Phil Electives 6
Electives 9

Second Semester Hours
Phil Elective 3
Electives 12

Minor in Philosophy
The minor in philosophy consists of 16 hours of course work, at least 8 of which must be in 300-400-level courses. Courses are chosen by the student, in consultation with the department, but will normally include Phil 101 and will always include Phil 201.

Minor in Ethics
The minor in ethics consists of eighteen credit hours, of which at least fifteen shall be from ethics courses within the Department of Philosophy, such as Phil 260, 360, 365, 375, 445, and 460. Three credit hours may, with approval of the Department of Philosophy, be from an ethics course in the student’s major or in another department. Eight of the eighteen hours must, in accord with university policies, be in upper-division course work.

Description of Courses

Philosophy
Phil
101 [H] Introduction to Philosophy 3 Nature and place of philosophy in human thought; problems and achievements.
102 [W] Writing and Reasoning 3 Application of critical thinking skills to essay writing.
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.
240 Philosophy of Sport 3 Philosophical issues in sports (e.g. sports ethics, the role of sports in society, and the aesthetics of sports).
260 [H] Introduction to Ethics 3 Ethics through analysis of contemporary moral and social issues.

290 [H] History of Ancient and Medieval Philosophy 3 Pre-Socratics, 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 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 Advanced Logic 3 PreReq Phil 201. First-order predicate logic plus some meta-theory, applications and/or extensions. Credit not granted for both Phil 401 and 501. 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).

415 [T] The Experience of Illness in Society: Moral Problems in Health Care 3 PreReq completion of one Tier I and three Tier II courses; senior standing. Synthesis of learning from life experience, humanities, and professional courses to address moral problems in health care.
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] 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 one Tier I and three Tier II courses. East/West philosophies and their impact on understanding of nature and architecture.
440 [T] Mind of God and the Book of Nature: Science and Religion 3 PreReq completion of science General Education Requirements, completion of one Tier I and two Tier II courses. Methodological comparison; cutting edge issues in science as they impact 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.
501 Advanced Logic 3 Graduate-level counterpart of Phil 401; additional requirements. Credit not granted for both Phil 401 and 501.
504 Special Topics in Philosophy 3 May be repeated for credit; cumulative maximum 6 hours. PreReq graduate standing. Intensive study of a special topic not otherwise covered in depth in the curriculum.
520 Seminar in Ethical Theory 3 PreReq graduate standing. The major issues, views, and figures of ethical theory from ancient Greece to the present.
522 Seminar in Metaphysics 3 Prereq graduate standing. The nature of reality, through study of key concepts such as God, personhood, free will, causation, space, time, and identity.

524 Seminar in Epistemology 3 Prereq graduate standing. Classical problems, questions, and theories involving the concept of knowledge.

530 Advanced Biomedical Ethics 3 Prereq graduate standing. Current ethical issues in medical practice, medical research, and public policy relating to health issues.

532 Seminar in Business Ethics 3 Prereq graduate standing. The major issues in business ethics, both domestic and international, from general principles to specific cases.

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

### Physical Education Activity Courses

#### Physical Education Activity

**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 exception of PEACT 200 Special Topics (1 credit hour, repeatable to a maximum of 4 hours). Only 8 hours of PEACT credit may be applied toward graduation credit.

Courses are graded A, S, or F, except as noted.

#### Physical Education Activity

**PEACT**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Beginning Conditioning S, F grading.</td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>Beginning Conditioning ROTC</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>Beginning Wrestling</td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>Self Defense</td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>Beginning Judo</td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>Karate</td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>Weight Training S, F grading</td>
<td></td>
</tr>
<tr>
<td>114</td>
<td>Beginning Gym Tumbling</td>
<td></td>
</tr>
<tr>
<td>116</td>
<td>Gymnastics</td>
<td></td>
</tr>
<tr>
<td>118</td>
<td>Adapted Physical Education</td>
<td></td>
</tr>
<tr>
<td>119</td>
<td>Aerobic Dance S, F grading</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>American Social Dance Men</td>
<td></td>
</tr>
<tr>
<td>121</td>
<td>American Social Dance Women</td>
<td></td>
</tr>
<tr>
<td>122</td>
<td>Beginning Ballet</td>
<td></td>
</tr>
<tr>
<td>124</td>
<td>Tap Dancing</td>
<td></td>
</tr>
<tr>
<td>126</td>
<td>Beginning Mod Dance</td>
<td></td>
</tr>
<tr>
<td>127</td>
<td>Beginning Jazz Dance</td>
<td></td>
</tr>
<tr>
<td>128</td>
<td>Beginning Swimming</td>
<td></td>
</tr>
<tr>
<td>130</td>
<td>Diving</td>
<td></td>
</tr>
<tr>
<td>131</td>
<td>Scuba Diving</td>
<td></td>
</tr>
<tr>
<td>132</td>
<td>Conditioning Swimming S, F grading</td>
<td></td>
</tr>
<tr>
<td>133</td>
<td>Water Aerobics S, F grading</td>
<td></td>
</tr>
<tr>
<td>134</td>
<td>Conditioning Skiing S, F grading</td>
<td></td>
</tr>
<tr>
<td>135</td>
<td>Aqua Fitness</td>
<td></td>
</tr>
<tr>
<td>137</td>
<td>Boating Safety Instruction</td>
<td></td>
</tr>
<tr>
<td>139</td>
<td>Rowing S, F grading</td>
<td></td>
</tr>
<tr>
<td>140</td>
<td>Jogging S, F grading</td>
<td></td>
</tr>
<tr>
<td>141</td>
<td>Beginning Golf</td>
<td></td>
</tr>
<tr>
<td>143</td>
<td>Beginning Bowling</td>
<td></td>
</tr>
<tr>
<td>145</td>
<td>Beginning Fencing Men</td>
<td></td>
</tr>
</tbody>
</table>

### Physical Science Courses

#### Physical Science

**Ph S**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>298 [P]</td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>

### Department of Physics


Physics is the study of nature at its most fundamental level. It is the science upon whose principles all other sciences and technologies are based. A major in physics is ideal preparation, for further study in physics or for advanced study in biophysics, medicine, astrophysics, geophysics, chemical physics, engineering, meteorology, and computer science. These same areas also offer careers for the physics major.

Courses offered by the physics department introduce the student to the major physical theories: mechanics, thermodynamics and statistical physics, electricity and magnetism, and quantum physics. Additional undergraduate courses cover optics, atomic physics, nuclear physics, solid state physics, and astrophysics. Students test the theories in laboratories and learn experimental techniques needed to work with modern apparatus such as computers, high-vacuum equipment, lasers, electronic and optical devices, and accelerators.

Active research programs supported by federal grants and contracts are pursued in the following fields: acoustics (scattering, nonlinear processes, and levitation); astronomy (luminosity calibration, spectroscopy, statistics); optical properties of semiconductors; biophysics; clusters physics; optical physics (femtosecond laser spectroscopy, scattering from doped polymers, nonlinear optics, quantum electronics, Fourier spectroscopy, diffraction catastrophes); physics education (use of microcomputers in teaching and labs); nuclear solid state physics (Mössbauer effect, perturbed angular correlation, positron annihilation studies, studies of defects in solids); shock wave and high pressure physics (chemical and structural response of condensed materials to high dynamic pressures, time-resolved optical spectroscopy, shock and detonation wave propagation, chemical reactions, dynamic mechanical failure); surface and chemical physics (synchrotron SAFS, diamond films, molecular interactions with surfaces, reactive etching of surfaces, photoelectric and thermal emission microscopy); theory (quantum chaos, nonlinear dynamics, mesoscopic systems, phase transitions and critical phenomena, quantum liquids), and low-temperature physics. These research groups offer graduate students the opportunity to pursue original investigations required for advanced degrees. Undergraduate physics majors are encouraged to participate in research through the special-problems course (Phys 499) and through part-time jobs that are sometimes available.

The department offers courses of study leading to the degrees of Bachelor of Science in Physics, Master of Science in Physics, and Doctor of Philosophy in Physics.
Further information may be found on the department's web server at [http://www.physics.wsu.edu/](http://www.physics.wsu.edu/).

Astronomy courses at both the undergraduate and graduate levels are administered by the department. Instruction in astronomy is enhanced by the use of a 12-inch refractor at the Jewett Observatory and a Spitz planetarium. Opportunities are available for students to collaborate with faculty to do research projects.

The Department of Physics is a major participant in the Program in Materials Science and offers courses and research opportunities leading to degrees in this interdisciplinary program.

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.

### Schedule of Studies

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 their second semester at WSU. Students who have placed in Math 172 can accelerate the math sequence. Upon consultation with the departmental advisor, modifications can be made in the list of required courses to fit the needs of individual students. Note that in all the programs that follow, the minors listed in place of GERs.

### FIRST AND SECOND YEAR REQUIREMENTS

The first year requirements are common to all physics degree programs:

#### Freshman Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Degree program course, if necessary¹</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>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</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 necessary¹</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 201 or 205</td>
<td>4 or 5</td>
</tr>
</tbody>
</table>

#### Sophomore 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>Chem 106 [P] (GER) or 116</td>
<td>4</td>
</tr>
<tr>
<td>Degree program course, if necessary²</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 273</td>
<td>2</td>
</tr>
<tr>
<td>Phys 202 or 206</td>
<td>4 or 5</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>4</td>
</tr>
<tr>
<td>Cpt S 121</td>
<td>4</td>
</tr>
<tr>
<td>Degree program course, if necessary²</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Math 315</td>
<td>3</td>
</tr>
<tr>
<td>Math 303</td>
<td>3</td>
</tr>
<tr>
<td>Math 330</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Environmental: ES/RP 101; Physics Education: Psych 105 [S] (GER), ComSt 102 [C] (GER); Computational Physics: Cpt S 121, 122.

² Astrophysics: Phys 345; Biophysics, Environmental Option: Biol 103, 104; Computational: Cpt S 330, E E 214; Optics and Electronics, Instrumentation Options: E E 214; Physics Education: H D 101 [S] (GER), T & L 300, 301.

### 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.

#### Astrophysics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and Astronomy.

#### Biophysics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and possibly Biochemistry.

#### Computation Physics Program

This program yields a Bachelor of Science in Physics Degree in the minor in Mathematics and possibly in Computer Science.

#### Continuum Physics and Acoustics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics.

#### Environmental Physics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and Environmental Science.

#### Instrumentation Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics.

#### Materials Science Program

This program yields a Bachelor of Science in Physics Degree with a minor in Materials Science.

#### Mathematical Physics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and possibly in Computer Science.

#### Renewable Energy Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and possibly in Computer Science.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>6 hours</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humansities or Social Sciences Course (GER); Astr 499; Math Electives (6 hours); Astr 345, 435; one hour from Astr 390 or 499; Phys 320, 341, 342, 410, 412, 415 [M], 443, 450, 490 [M], 461, and 465.</td>
<td></td>
</tr>
</tbody>
</table>

### Physics Education Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and Earth Science.

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### Physics Education Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and Earth Science.
Materials Physics Program
This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and possibly in Material Science.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Chem 331, 333; Math Electives (6 hours); MSE 301, 312, 413, 499; MSE Electives (6 hours, 400-level); Phys 304, 320, 341, 410, 415 [M], 450, 463, 465, 490 [M].

Mathematical Physics Program
This program yields a Bachelor of Science in Physics Degree with a second major in Mathematics.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); Math 300, 398, 401, 402, 420, 421, 443, 499; Phys 304, 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M].

Optics and Electronics Program
This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and possibly in Electrical Engineering.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); E E 261, 262, 314, 431, 496, 499, 499; Phys 304, 320, 341, 410, 415 [M], 443, 450, 463, 490.

Physics Education Program
This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and a primary endorsement to teach Physics and a supporting endorsement to teach Mathematics.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Humanities or Social Sciences Course (GER); EdPhys 402; Math 303, 360; Ph S 430. Phys 304, 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M]; 499; T & L 302, 303, 317, 328, 400, 404, 415 (16 hours), 445, 478.

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, 303, and 304 plus any two courses (6 credits) from the following list: Phys 320, 330, 341, 342, 410, 412, 415, 443, 450, 461, 463, 465. This makes a total of 20 credits in Phys of which 12 are upper division. Students from outside the College of Sciences (i.e., College of Engineering) do not have to meet the extra graduation requirements of the College of Sciences.

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, 521, 571, and additional math courses. At least one year of German, Russian, or French is also recommended.

Description of Courses

Physics

Phys


103 Problem Solving for Physics 101 1 Prereq c///enrollment in Phys 101. Small class environment for students who desire focused attention on problem solving skills as applied to Physics 101 materials. S, F grading.

104 Problem Solving for Physics 102 1 Prereq c///enrollment in Phys 102. Small class environment for students who desire focused attention on problem solving skills as applied to Physics 102 materials. S, F grading.

150 [Q] Physics and Your World 3 (2-2) Survey of physics as found in everyday phenomena; including many hands-on activities and home experiments. Field trips required.


203 Problem Solving for Physics 201 1 Prereq c///enrollment in Phys 201. Small class environment for students who desire focused attention on problem solving skills as applied to Phys 201 materials. S, F grading.


206 [P] Physics for Scientists and Engineers II - Honors 5 (3-4) Prereq Math 172, Phys 201 or 205. Calculus-based physics, honors section; electricity, magnetism, light, topics in modern physics.

303 Modern Physics I 3 Prereq Math 220 or c/// Phys 202. Quantum and relativity theories with applications to atomic, solid state, nuclear and elementary particle physics.


320 Mechanics 3 Prereq Math 315 or c/// Phys 302. Particle motion in one-, two-, and three-dimensions; motions of systems of particles; rigid body motion; Lagrange's equations.

330 Thermal Physics 3 Prereq Math 273; Phys 302. Thermal behavior of systems; energy and entropy; equations of state; changes of phase; elements of continuum and statistical approaches.

341 Electricity and Magnetism I 3 Prereq Math 315 or c/// Phys 202. Electrostatic fields, magnetic fields, dielectric and magnetic media.

342 Electricity and Magnetism II 3 Continuation of Phys 341. Maxwell's equations; electromagnetic waves, special relativity.

345 [P] Principles of Astronomy 3 Same as Astr 345.


380 [P] Physics and Society 3 Interactions of physics with society; energy; air and water pollution; recycling; communications and computers; physics and war; physics and art.

385 Environmental Physics 3 Prereq Math 171; Phys 101 or 201; 102 or 202. Basic physics concepts applied to environmental problems engendered by technology; physical understanding of the earth, resources; environmental changes induced by people.

410 Electronics 3 (1-6) Prereq Phys 102 or 202. Laboratory construction and investigation of electronic circuits employed in research instruments.

412 Modern Optics Laboratory 3 (2-3) Prereq Phys 443 or c//. Fundamentals of experimental modern optics and applications in science and engineering.


435 Astronomy and Astrophysics 3 May be repeated for credit; cumulative maximum 6 hours. Same as Astr 435.

443 Optics 3 Prereq Phys 341 or c//. Polarization, interference, coherence, and diffraction phenomena of the electromagnetic spectrum; optics of solids; laser resonators; gaussian beams; ABCD matrices.

450 Introduction to Quantum Mechanics 3 Prereq Math 315; Phys 303. Introduction to quantum theory with applications to atomic physics. Cooperative course taught jointly by WSU and UI (Phys 450).

461 Introduction to Atomic and Molecular Physics 3 Prereq Phys 304. Introduction to atomic and molecular physics; spectroscopy.

463 Introduction to Solid State and Materials Physics 3 Prereq Phys 304. Introduction to the physics of solids; crystal structures, lattice vibrations, and electron theory. Cooperative course taught jointly by WSU and UI (Phys 463).
450 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.

456 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.

596 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, horticult-
ture, 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, biochemical pathology, disease resistance, chemical control, and biological control. Research is conducted on diseases of grain crops, forage crops, forest trees, fruit, vegetables, ornamentals, and turf.

The department offers courses of study leading to the degrees of Bachelor of Science in Agriculture, Master of Science in Plant Pathology, and Doctor of Philosophy.

An interdisciplinary curriculum in Integrated Pest Management is available to those whose interests span the areas of plant pathology and pest management. The curriculum is described under the Entomology section of this catalog.

Schedule of Studies

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 the 300-400-level courses.

The following list includes the departmental requirements for the undergraduate plant pathology curriculum. Students should consult their advisors 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 REQUIREMENTS
(120 HOURS)

Freshman Year

First Semester
- 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
- 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
- Biol 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 4
- Phys 102 [P] (GER) 4

Junior Year

First Semester
- Biol 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
- Biol 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 [T] (GER) 3
- Pl P Electives 12

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 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
Same as CropS 403. Credit not granted for both Pl P 403 and 503.

421 General Mycology
(4-2-6)
Rec Biol 103 or 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
(3-2-5)
Rec Biol 103 or 120. Classification, symptoms, causes, epidemiology, and control of plant diseases. Credit not granted for both Pl P 429 and 529.

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

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

503 Advance Cropping Systems
(3) 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 Phytopathobiology
(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 UI students (PlSc 514).

515 Seminar
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.

525 Field Plant Pathology and Mycology
(1-0-3) or 2 (0-6) May be repeated for credit; cumulative maximum 4 hours. Rec plant pathology and/or mycology course; by interview only. Field trips, forays, and demonstrations dealing with various aspects of plant pathology and mycology.

526 Advanced Fungal Biology
(4-2-4) Prereq Pl P 421, 521 or equivalent and graduate standing. Advanced topics in fungal biology, ecology, systematics, evolution and coevolution via discussions of literature and special laboratory projects. Cooperative course taught by WSU, open to UI students.
529 General Plant Pathology 3 (2-3) Graduate-level counterpart of IP P 429; additional requirements. Credit not granted for both IP 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 photoregulation, nitrogen fixation, phytochemistry, the physiology of vascular plants, metabolism, plant-pathogen interactions, hormonal interactions and regulation of growth, crop production physiology, and physiological ecology as well as related areas in agriculture and biology.

Students entering the program must have completed their baccalaureate degree with training in one year each of elementary biology or botany, and physics, chemistry through one semester of organic chemistry, one semester each of plant physiology and genetics, and mathematics (through calculus). Limited undergraduate deficiencies may be remedied by taking the appropriate courses upon enrollment in the graduate program on a provisional basis. Degree requirements for both the MS and PhD degrees include courses in advanced 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 advisor and the supervising committee of graduate faculty. There is no foreign language requirement.

Policies and procedures of the Graduate School apply to all admissions. Interested students may direct their inquiries to 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.

Description of Courses

Plant Physiology

PI PH

515 Seminar in Plant Physiology 1 May be repeated for credit; cumulative maximum 4 hours. A cross-discipline seminar, including botany, crop and soils sciences, horticulture, plant pathology, and plant physiology.

561 Biochemical Signaling 2 Same as MBioS 561.

570 Advanced Topics in Plant Physiology 1 May be repeated for credit; cumulative maximum 3 hours. Oral presentation of a current research paper.

571 Research Proposal 2 May be repeated for credit; cumulative maximum 4 hours. Written and oral presentation of an area of plant physiology.

580 Protein Trafficking in Eucaryotic Cells 3 Prereq MBioS 513; graduate standing. The biochemistry and cell biology involved in protein trafficking among organelles in eucaryotic cells. Cooperative course taught by WSU, open to UI students.

587 Advanced Topics in Plant Biochemistry 2 Same as MBioS 571.

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

700 Master’s Research, Dissertation and/or Examination Variable credit. S, F grading.

800 Doctoral Research, Dissertation and/or Examination Variable credit. S, F grading.

Department of Political Science

Department Chair, S. Stehr; Professors, T. Cook, M. Cottam, L. LeLoup, N. Lovrich, D. Nice, O. Marenin; Associate Professors, A. Appleton, C. Clayton, F. Latze (Criminal Justice Director), A. Mazur, T. Preston, G. Russell; Assistant Professors, D. Brody, K. Mason, M. Pickrell, T. Pratt, M. Smith, 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 resources represented in the department’s teaching and research personnel. Functions of the division include...
Performing research and issuing publications relating to government and public affairs; providing training and consulting services to public agencies and private organizations concerned with public affairs; and administering internship programs to provide practical experience in government. DGSS maintains a collection of specialized government publications and related materials and, in general, acts as a link between teaching and the conduct of public affairs.

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.

Schedule of Studies

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 REQUIREMENTS (123 HOURS) ✔FYDA

36 hours in Pol S, at least 15 of which must be earned at WSU required.

Freshman Year

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

Second Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Communication [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Intercultural [I,G,K] (GER) 3
Pol S 102 [S] (GER) 3

Sophomore Year

First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Foreign Language, if necessary, or Elective 3 or 4
Math Proficiency [N] (GER) 3
Pol S 103 [S] (GER) 3
Science Elective (GER) 4

Second Semester Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Biological [B] Sciences (GER) 4
Foreign Language, if necessary, or Elective 3 or 4
Pol S Elective1 3
Pol S Elective2 3

Junior Year

First Semester Hours
300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Pol S Elective [M] 3
Physical [P] Sciences (GER) 4
Pol S Elective3 6
Complete Writing Portfolio

Second Semester Hours
300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Pol S Elective [M] 3
Cpt S (GER) Stat Elective4 3
Engl 201 [W], 301 [W], or 402 [W] (GER) 3
Pol S Elective5 3

Senior Year

First Semester Hours
300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Elective 3
300-400-level Pol S Elective 3
Electives 6

Second Semester Hours
300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Elective 3
300-400-level Pol S Elective 3
Tier III Course [T] (GER) 3
Elective 3

Global Politics Requirements (120 HOURS) ✔FYDA

33 hours in Pol S, at least 15 of which must be earned at WSU required.

Freshman Year

First Semester Hours
English 101 [W] (GER) 3

PRE-LAW REQUIREMENTS
Description of Courses

Pol S

101 [S] American National Government 3 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 3 Nature of the state; fundamental problems of government and politics; ideological and institutional comparison of democracies and dictatorships.

103 [S] International Politics 3 Creation and operation of national, international, and supranational communities; major world problems since 1945.

198 [S] Political Science Honors 3 Open only to students in the Honors College.

State and Local Government 3 Institutions, processes, and problems, with special reference to the state of Washington.

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

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

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

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

300 The American Constitution 3 Pol S 101. Constitutional principles as established by the Supreme Court and related political developments.

301 Political Simulations 3 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 Media and Politics 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 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 Movies 3 (2-2) Same as Crm J 381.

401 Topics—Study Abroad 3

402 Civil Liberties 3 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 Same as Crm J 405.

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 Voting and Elections 3 Analysis of voting behavior and elections; turnout, influences on voter choice, congressional and presidential elections, campaign finance, and polling.

418 Human Issues in International Development 3 Same as Anth 418. Cooperative course taught by WSU, open to UI students (PolSc 462).

420 Political Parties and Interest Groups 3 Roles, characteristics, and theories of political parties; organization, behavior, and impact of interest 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.

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 (PolSc 501).


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.

GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3 or 4
Pol S 101 [S] (GER) 3
Tier I / II Science [Q,B,P] (GER) 3

Second Semester

Hours

Arts & Humanities [G,H] (GER) 3
Biological Science [B] (GER) 4
GenEd 111 [A] (GER) 3
Intercultural [I,G,K] (GER) 3
Pol S 102 [S] (GER) 3

Sophomore Year

First Semester

Hours

Communication [C,W] (GER) 3
Physical Science GER [P] 4
Pol S 103 [S] (GER) 3
Pol S Comparative Elective 2 or Minor Field Elective 4 3
Social Science [S,K] (GER) 3

Second Semester

Hours

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Science [S,K] (GER) 6
Pol S 1R Elective 3
Pol S Elective 3
Science Elective [B,P] (GER) 1
Minor Field Elective 3
Complete Writing Portfolio

Junior Year

First Semester

Hours

Pol S [M] 3
Pol S Comparative Elective 2 3
Pol S 333 or 438 3
Minor Field Elective 4 or Foreign Language 3 or 4
Political Science IR Elective 3 3

Second Semester

Hours

Arts & Humanities [H,G], Intercultural [I,G,K], or Social Science [S,K] (GER) 3
Pol S [M] 3
Pol S Comparative Elective 2 3
Pol S 1R Elective 3
Minor Field Elective 4 or Foreign Language 3 or 4

Senior Year

First Semester

Hours

Minor Field Elective 3
Political Science Comparative Elective 2 (if necessary) 3
Tier III Course [T] (GER) 3
Electives 6

Second Semester

Hours

Minor Field Elective 4 3
Electives 12

1 Study Abroad.
2 Comparative Politics Electives: Pol S 305, 314, 405 [M], 412, 423, 432, 435, 447, 472 [M], 474, 476 (courses cannot be counted for both Comparative Politics and International Relations).
3 International Relations Electives: 314, 423 [M], 427 [M], 428, 429 (courses cannot be counted for both Comparative Politics and International Relations).
4 May choose from a minor in a Foreign Language or Global Studies.
443 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 [M] 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 [M] The Legislative Process 3 Role of legislature in a democratic system; principles and procedures of representation; election and tenure of lawmakers; legislative organization and procedures.
451 The Presidency 3 Organization and processes of executive institutions at the national level; uses and limits of executive power.
452 Political Leadership 3 An analysis of political leadership, including different conceptions of leadership, recruitment, leader-follower relations, tactics, and evaluation of leaders.
450 [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 unit 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. 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 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 3 Seminar required of all graduate students using this field as a major or a minor; it is a prerequisite of all other graduate seminars in the field.
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. Cooperative course taught by UI (PolSc 556), open to WSU students.
516 Seminar on Law, Courts, and Judicial Politics 3 Prereq graduate standing. Seminar on law, courts, and judicial politics.
530 American Foreign Policy: Theories and Applications 3 Theories of international politics applied to American foreign policy. Cooperative course taught by WSU, open to UI students (PolSc 501).
531 Seminar in International Security 3 International security and arms control politics, negotiations, agreements. Cooperative course taught by WSU; open to UI students (PolSc 561).
532 Seminar in International Political Economy 3 Institutions, politics, and decision-making processes in managing international economic relations.
533 Topics in Political Psychology 3 May be repeated for credit; cumulative maximum 6 hours. Psychological influences on political decision making, bargaining, conflict and conflict resolution options.
534 Seminar in Comparative Politics 3 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught jointly by WSU and UI (PolSc 595).
535 Advanced Issues in Comparative Politics 3 Advanced issues seminar in international and comparative politics.
536 Special Topics in Comparative Politics 3 May be repeated for credit; cumulative maximum 6 hours. Advanced issues seminar in international and comparative politics.
537 Concepts and Methods in Comparative Politics 3 Selected concepts (state, political participation, and methods (cross-national analysis, case study approaches) in comparative politics.
538 International Development and Human Resources 3 Same as Anth 519.
539 The Political Science Profession 1 Methods, problems, and purposes of teaching, research, and vocation in political science. S, F grading.
540 Proseminar in Public Administration 3 Proseminar overviewing basic theories of administrative organization, relationships, and behavior.
541 Seminar in Research Evaluation 3 Same as Crm J 540.
542 Proseminar in Administration, Justice, and Applied Policy Studies 3 May be repeated for credit; cumulative maximum 12 hours. Prereq Pol S 340 or 445. Analytical perspectives and theoretical issues. Cooperative course taught jointly by WSU and UI (PolSc 592).
543 Topics in Public Administration and Policy 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Examination of the literature on the politics of the American public policy process.
544 The Politics of Policy Process 3 American political process; policy making under the constraints of a democratic system; relationship to the (non) achievement of the public interest.
547 Seminar in Public Administration 3 Cooperative course taught by WSU, open to UI students (PolSc 501).
552 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 WSU students.
597 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; Advisor, K. L. Chase.

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 col-

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college. The majority of students who go on to dental school complete a baccalaureate degree. No particular major is required, but almost all dental schools require specific undergraduate coursework and submission of scores from the Dental Aptitude Test (DAT), ordinarily taken in the summer following the student's third college year. A total of 21 credits of elective courses in humanities and social sciences, plus one year of coursework in each of the following areas, will meet the requirements of almost all institutions and also give a good preparation for the DAT.

1. English composition (Engl 101 and an additional [W] course or Engl 198/199)
2. General chemistry (Chem 105/106 or 115/116)
3. Organic chemistry (Chem 340/341/342)
4. Physics (Phys 101/102 or 201/202)
5. Introductory biology (Biol 103/104)

In addition, some institutions require Microbiology (MBioS 302), Biochemistry (MBioS 303), and/or Introductory Psychology (Psych 105).

Admission to a school of dentistry is based on satisfactory completion of the entrance requirements of that school, attainment of satisfactory scholastic record, satisfactory scores on the Dental Admission Test (DAT), the possession of personal qualifications necessary for the study of dentistry, and a single composite letter written by the coordinator.

Additional information can be obtained from D. F. Moffett, Associate Professor and Coordinator, Pre-dental Curriculum, Washington State University, 236 Morrill Hall, Pullman, WA 99164-3524.

## Prelaw Curriculum

**Associate Professor and Coordinator, C. Clayton.**

Students interested in legal education may prepare for admission to law school from any major in any college at the University. The American Bar Association recommends completing baccalaureate degrees before entering law school, attaining as rich an undergraduate education as possible, and developing skills in reading, writing, critical thinking, oral communication, research, and task management.

Admission to law school is based in most cases on a student's Law School Admissions Test (LSAT) score, grade point average, personal statement, letters of recommendation, quality of the institution where undergraduate work is completed, and difficulty and range of course work. The ABA recommends completing a major, but double majors or minors have no effect on admission. Pre-law students are advised to pursue majors in a discipline that interests them: students are more likely to excel in majors they enjoy, and the process of exploring one subject in greater depth will provide valuable preparation for study of the law.

No particular major is recommended and there are no minimum requirements with regard to course work, but the American Bar Association has identified knowledge of certain subjects as important groundwork for law school: history, especially American history; political thought and theory and the American political system; ethical theory and theories of justice; economics; basic math and finance; human behavior and social interaction; diverse cultures both within and outside the United States; international and global issues. For best results students should work closely with their major advisors. Several departments at the University offer pre-law curricula: Communication (226 Murrow Hall), Comparative American Cultures (111 Wilson Hall), English (202 Avery Hall), History (301 Wilson Hall) and Philosophy (316 Bryan Hall), Political Science (801 Johnson Tower), and Sociology (204 Wilson Hall). Additional information can be obtained from Professor Cornell W. Clayton (Washington State University, 817 Johnson Tower, Pullman, WA 99164-4880).

## Premedical Curriculum

**Associate Professor and Coordinator, D. F. Moffett.**

Becoming a medical doctor requires a program of graduate study in medical school as well as undergraduate preparatory coursework. It is unusual for students to be admitted to medical school without a baccalaureate degree. No particular major is required, but almost all medical schools require specific undergraduate courses and the submission of scores from the Medical College Admission Test (MCAT), ordinarily taken in April of the student’s third college year. A total of 21 credits of elective courses in humanities and social sciences, plus one year of coursework in each of the following areas, will meet the requirements of almost all institutions and also give a good preparation for the MCAT.

1. English composition (Engl 101 and an additional [W] course or Engl 198/199)
2. General chemistry (Chem 105/106 or 115/116)
3. Organic chemistry (Chem 340/341/342)
4. Physics (Phys 101/102 or 201/202)
5. Introductory biology (Biol 103/104)
6. Molecular biology (MBioS 301 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 advisor 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 nonscience 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.

## Preveterinary Curriculum

Students interested in veterinary medicine may prepare for admission from any major in the University as long as they meet the minimum requirements for admission. The requirements for admission are listed in this catalog under the College of Veterinary Medicine. Admission to the veterinary program is highly competitive so students are encouraged to choose their major carefully. While there is no baccalaureate degree in preveterinary 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 that 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). The internship provides an opportunity for integration and application of knowledge, and acquisition and honing of skills necessary for effective assessment, intervention, and prevention of alcohol addiction and abuse.

The graduate program leads to advanced degrees
for qualified students who plan careers as psychologists. The course of study for the Doctor of Philosophy degree may be directed toward either a specialization in clinical or experimental psychology. The graduate training program in clinical psychology at Washington State University is accredited by the American Psychological Association.

The department offers courses of study leading to the degrees of Bachelor of Science in Psychology, Master of Science in Psychology, and Doctor of Philosophy. Excellent facilities are available for instruction and research in psychology. There are specially designed facilities for research in learning, memory, sensory processes, perception, animal behavior, physiological psychology, social interaction, and behavior modification. Departmental facilities also include the Psychology Clinic, which is a training clinic. In addition, cooperative arrangements with other units of the university and with outside agencies and institutions make it possible for students to gain first-hand experience in research and professional work. The university maintains a comprehensive library of books and journals in psychology and related fields.

Schedule of Studies

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.

Beyond certain minimum requirements, there is flexibility in the major (and minor) program, in accordance with the needs of the individual student. A person may certify as a major after completion of 30 semester hours, Psych 311 with a grade of 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 advisor 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 REQUIREMENTS (120 HOURS) of FYDA

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biol 101 [B] AND 105 [B], or</td>
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<tr>
<td>Biol 102 [B], or 103 [B] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<th>Second Semester</th>
<th>Hours</th>
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<tr>
<td>Psych 105 [S] (GER) or 198</td>
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</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Communication [C,W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Psych 311</td>
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<th>Second 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>
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<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<tr>
<td>Psych 312 [M]</td>
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<th>Hours</th>
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<tr>
<td>Group II Psych Elective2</td>
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<td>Electives</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Group I Psych Elective2</td>
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<tr>
<td>Group II Psych Elective2</td>
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<tr>
<td>300-400-level Non-Psych Electives</td>
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<tr>
<th>Senior Year</th>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>Elective1</td>
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<tr>
<td>Tier III Humanities or Social Sciences Course (GER)</td>
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<tr>
<td>300-400-level Non-Psych Electives</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
<td></td>
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<tr>
<td>Non-Psych Electives</td>
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<td></td>
</tr>
<tr>
<td>Psych Electives</td>
<td>1-4</td>
<td></td>
</tr>
</tbody>
</table>

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 advisor.

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 advisor is recommended prior to selecting either Psych courses or supporting courses in other areas.

Students in the Honors Program and transfer students should ask about modifications in the above schedule for the Psych majors. Students interested in combining a 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 taken at WSU and at least 9 must be in graded 300-400-level courses.

Psych 105 or 198 is required, and a statistics or research methods course is strongly recommended; electives must be chosen in consultation with a psychology advisor.

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). AlcSt 365, 366; AlcSt/Psych 444 or S W 493; PharP 217; Psych 321 or 333; Psych 440 or S W 393. Recommended electives: AlcSt 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 AlcSt 447 and S 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 advisor. 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 Contempora-

ry psychology; biological, social, and physical

influences on normal and abnormal human be-

havior.

106 Psychology Applied to Daily Living: Dealing with Friends, Alcohol, and Sex 1 Prereq

Psych 105 or c/l. Application of psychological

procedures to the problems of group living, alco-

hol use, sexual decision making and related so-

cial issues.

198 [S] Psychology Honors 3 May substitute for

Psych 105 as a prereq to later courses. Open

only to students in the Honors College.

205 Psychology and Everyday Questions 3 Prereq Psych 105. Scientific analysis of everyday

questions; topics from Psych 105 will be re-exam-

ined for their implications for practical solutions.
365 Problems of Alcohol Addiction and Abuse 3 Prereq 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 Prereq 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 Prereq 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 Psychological Perception 3 Prereq Psych 105. Perception of size, depth, form, shape, illusions, contrast; historical and modern theories and research; applications and demonstrations.


412 Psychological Testing and Measurement 3 Prereq Psych 311. Assessment of behavioral variables in humans; individual differences. Cooperative course taught by WSU, open to UI students (Psych 412).

440 [M] Clinical/Community Psychology 3 Prereq Psych 333. Professional problems; theory, training, relations with clients, institutions, public.

444 Basic Helping Skills 2 (0-6) Prereq 6 hours Psych; sophomore standing. By interview only. Training in basic skills to work with varied types of clients; didactic and role play instruction. S, F grading.

445 Undergraduate Practicum V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours Psych; sophomore standing. By interview only. Supervised experience in local and county agencies; application of psychological principles to para-professional counseling. S, F grading.


466 Environmental Psychology 3 Prereq Psych 105. Psychological concepts applied to the mixture of positive and negative interactions individuals have with their physical environment.

470 Motivation 3 Prereq Psych 105. Different motivational systems; analysis of environmental and biological factors influencing motivation, with emphasis on human motivation.


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

485 Behavioral Decision Theory 3 Same as Econ 485.

490 Cognition and Memory 3 Prereq 6 hours Psych. Human information processing, memory, and cognition.

492 [T] Psychology of Language 3 Prereq Psych 105; completion of one Tier I and three Tier II courses. The cognitive and neuropsychological processes involved in the acquisition and use of language; cross-cultural perspectives on language and thought.

495 Practicum in Personnel Psychology V 2 (0-6) to 6 (0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours Psych. Supervised experience in local industries and organizations; application of personnel psychology and resource management principles to work environments. S, F grading.

496 Cooperative Education Internship V 2-6 May be repeated for credit; cumulative maximum 12 hours. Off-campus cooperative education internship with business, industry, or government unit coordinated through the Professional Experience Program. S, F grading.

497 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 4 hours. S, F grading.

498 Research Participation V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq 9 hours Psych including a lab course. By interview only. Participation in the current research of departmental faculty. S, F grading.

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

502 Research Design V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 16 hours. Research design, equipment, data collection, data analysis, and report writing. S, F grading.

504 History of Psychology: Theoretical and Scientific Foundations 3 Roots of scientific explanation in psychology traced through various philosophical schools and psychological movements.

505 Teaching Introductory Psychology V 1-3 May be repeated for credit; cumulative maximum 4 hours. Prereq graduate standing. Problems and techniques related to teaching introductory psychology. S, F grading.

506 Current Research in Psychology 1 Current research being conducted by psychology faculty and members of associated departments.

507 Topics in Psychology 3 May be repeated for credit.

508 Special Topics in Psychology V 1-3 May be repeated for credit.

511 Analysis of Variance and Experimental Design 3 Prereq Psych 311. Parametric, nonparametric, repeated-measures, and multivariate ANOVA; planned comparisons; confidence intervals and power analysis; experimental design and variants.

512 Correlation, Regression, and Quasi-Experimental Design 3 Prereq Psych 511. Simple and multiple correlation and regression; time-series analysis; factor analysis; field research and quasi-experimental design.

513 Seminar in Quantitative Methods and Research Design 3 May be repeated for credit. Prereq Psych 512. Advanced topics in specialized quantitative procedures and in design of research in psychology.
514 Psychometrics 3 Prereq Psych 512. Scientific construction of behavioral assessment instruments, including validation and reliability; types of scales and responses; statistical scaling; test theory issues.

520 Empirical Approaches to Psychotherapy 3 Major therapy systems, research on process and outcome of therapy.

521 Behavior Modification 3 (2-3) Prereq Psych 390, 520. Learning principles applied to modifying behavior of children and adults in institutions, clinics, and schools.

522 Applied Behavioral Research 3 Research theory and methodology on development of applied programs.

530 Professional, Ethical, and Legal Issues 3 Application of professional, ethical, and legal issues in clinical psychology to such topics as confidentiality, dual-relationships, research, assessment, and intervention.

533 Psychopathology 3 Prereq by interview only. Theoretical and empirical approaches to diagnosis, etiology and treatment of mental disorders. Cooperative course taught by WSU, open to UI students (Psych 575).

534 Clinical Psychopharmacology 3 Prereq Psych 533, 574. Classification, clinical application, and mechanisms of psychotherapeutic drugs used in the treatment of mental disorders.

535 Clinical Assessment and Diagnosis 3 Diagnostic interviewing, conceptualization of clinical problems, case presentations, and treatment planning.

536 Measurement Theory and Personality Assessment 3 Prereq Psych 530, 539. Psychometric theory, theories of personality, objective and projective methods of assessing personality, development of testing and interpretive skills.

537 Psychology Clinic Assessment Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Prereq Psych 539 or by interview only. Supervised practice in psychological assessment in the Psychology Clinic. S, F grading.

538 Psychology Clinic Child Therapy Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Prereq Psych 520, 530, 533, 535, 536, 539, 543, or by interview only. Supervised practice in the clinical application of psychology with children and families in the Psychology Clinic. S, F grading.

539 Measurement Theory and Intellectual Assessment 3 Psychometric theory, theories of intelligence, methods of appraising intelligence in children and adults, and development of testing and interpretive skills.

540 Group Psychotherapy 3 By interview only. Psychotherapeutics in the context of the group.

541 Marriage and Marital Therapy 3 Prereq Psych 530, 535, graduate standing. Introduction to research on marital relationships, clinical models of marital dysfunction, and methods of intervention with distressed couples.

542 Community Psychology 3 Examination of community and its effects on health and behavior; organization of community-based mental health services.

543 Child Clinical Psychology: Empirical Approaches to Assessment and Therapy 3 Research on developmental psychopathology, child assessment, and child therapy.

544 Medical Psychology: Psychological and Pharmacological Interventions 3 Psychological factors and their influence upon the causes and/or course of medical illnesses as well as relevant clinical interventions. Cooperative course taught by WSU, open to UI students (Psych 544).

545 Psychology Clinic Adult Therapy Practicum 3 (0-9) May be repeated for credit; cumulative maximum 18 hours. Prereq Psych 520, 530, 535, 536, 539, or c/. By interview only. Supervised practice in the clinical application of psychology with adults in the Psychology Clinic. S, F grading.

546 Counseling Service Practicum 3 No credit. 1-3 May be repeated for credit; cumulative maximum 12 hours. Prereq Psych 545 or c/. By interview only. Supervised practice in the clinical application of psychology at the WSU Counseling Service. S, F grading.

547 Medical Psychology Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Supervised practice in the clinical application of psychology at the WSU Health and Wellness Service. S, F grading.

548 Behavioral Medicine Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Supervised practice in the clinical application of psychology at the Sacred Heart Medical Center and St. Luke’s Rehabilitation Center. S, F grading.

550 Attitudes and Social Cognition 3 Attitude structure, function, and change. Social cognition and motivation, and attributions. Cooperative course taught by WSU, open to UI students (Psych 520).

551 Group and Interpersonal Processes 3 Theories and research in interpersonal dynamics; cognitive, learning, equity, and attributional concepts. Group performance and interpersonal interaction, social influence, distributive and procedural justice, helping, and attraction.

552 Diversity Issues in Psychology 3 Research, theories, and controversies regarding the role of human diversity in psychotherapy, psychological assessment, and clinical research.

553 Theories of Personality 3 Classical (e.g., psychoanalytic, ego psychology) and contemporary (e.g., object relations social learning, psychological behaviorism) views of personality development.

554 Physiological Psychology 3 May be repeated for credit. Neuroanatomical, neurochemical, and other biological cases of human and animal behavior.

555 The Foundations of Neuropsychology 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq Psych 575. 1-15 May be repeated for credit. S, F grading.

556 Neuropsychological Assessment 3 Prereq Psych 574 and 575. Brain-behavior relationships in humans and the evaluation of cognitive, behavioral, and emotional changes accompanying a variety of neuropsychiatric syndromes.

557 Behavioral Pharmacology 3 Prereq Psych 574. Survey of drugs which affect brain function with emphasis on animal models and clinical applications.

558 Sensory Bases of Behavior 3 Prereq Psych 384. Sensory and physiological aspects of vision, audition, and other senses.

559 Models of Learning 3 Historical and current theory and research in learning and cognition.

560 Experimental Analysis of Behavior 3 Emphasis on conditioning in relation to the experimental evidence currently available; examination of research strategies.

561 Seminar in Learning/Cognition 3 May be repeated for credit. Advanced current topics in learning/cognition.

562 Clinical Internship in Psychology V 2-16 May be repeated for credit; cumulative maximum 16 hours. Prereq passing of prelims and completion of course work for PhD. Clinical training in an internship approved by American Psychological Association or by WSU. S, F grading.

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

564 Research, Thesis, and/or Examination Variable credit. S, F grading.

565 Special Problems, Directed Study and/or Examination Variable credit. S, F grading.

566 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

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

568 Problems of Alcohol Addiction and Abuse 3 Same as Psych 365.

569 Treatment Approaches in Alcohol Abuse/Alcoholism 3 Same as Psych 366.

570 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.

571 Basic Helping Skills 2 (0-6) Same as Psych 444.

572 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.

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

574 Special Problems 3 May be repeated for credit. S, F grading.

575 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

576 Sensory Bases of Behavior 3 Prereq Psych 384. Sensory and physiological aspects of vision, audition, and other senses.

577 Seminar in Physiological/Sensory Psychology 3 May be repeated for credit. Advanced current topics in physiological/sensory psychology.

578 Models of Learning 3 Historical and current theory and research in learning and cognition.

579 Experimental Analysis of Behavior 3 Emphasis on conditioning in relation to the experimental evidence currently available; examination of research strategies.

580 Seminar in Learning/Cognition 3 May be repeated for credit. Advanced current topics in learning/cognition.

581 Clinical Internship in Psychology V 2-16 May be repeated for credit; cumulative maximum 16 hours. Prereq passing of prelims and completion of course work for PhD. Clinical training in an internship approved by American Psychological Association or by WSU. S, F grading.

582 Problems of Alcohol Addiction and Abuse 3 Same as Psych 365.

583 Treatment Approaches in Alcohol Abuse/Alcoholism 3 Same as Psych 366.

584 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.

585 Basic Helping Skills 2 (0-6) Same as Psych 444.

586 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.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

Alcohol Studies

Professor and Department Chair, A. R. Kirschner; 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, 391 (on approval), or Soc 330; 3 hours from Anth/Soc 418, H D 410, or RS 423, 431, 435, 441, 491 or 499 (on approval). The remaining 12 hours may come from any of the above courses or from: Ag Ec 320; Arch 202; ES/EP 335, 486; H D 205; NATRIS 312, 438; Pol S 316, 416; Soc 301, 331, 332, 424. Please contact the department at (509) 335-8623 or kirschner@wsu.edu for more information.

Description of Courses

Rural Sociology

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

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/interest 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.

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

491 Advanced Special Topics V 1-3 May be repeated for credit; cumulative maximum 3 hours. Prereq 6 credits 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 441 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.

Science Courses

Description of Course

Science
Sci 101 Careers, Experience, and Opportunities in the Sciences and Mathematics 1 Introduction to careers in the sciences and mathematics; weekly presentations by guest speakers, researchers, and industry personnel.

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.

Schedule of Studies

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 advisor 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.
Department of Sociology

Soc 101 Introduction to Sociology 3
Soc 320 Introduction to Social Research 3
Soc 321 Quantitative Techniques in Sociology I 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 are required.

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, state and federal 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 both 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 find 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, 424, 430, 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, 330, 356, 384, 453 are recommended.

SOCIETY REQUIREMENTS (121 HOURS)

This is a prototype of one of many ways to complete the Sociology Degree Program in four years. The program built-in flexibility, and students should consult their advisers regarding other acceptable course plans.

Freshman Year

First Semester  Hours
En  101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency  N (GER) 3
Elective 3

Second Semester  Hours
Arts & Humanities [H,G] (GER) 3
Communication [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Science Elective (GER) 4
Elective 3

Sophomore Year

First Semester  Hours
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 6
Biological Sciences [B] (GER) 4
Intercultural [I,G,K] (GER) 3
Elective 3

Second Semester  Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Physical Sciences [P] (GER) 4
Soc 101 [S] (GER) 3
Soc Elective 3
Elective 3

Junior Year

First Semester  Hours
Related Field Electives 6
Soc 320 3
Soc Electives 6
Complete Writing Portfolio 3

Second Semester  Hours
Related Field Electives 6
Soc 321 4
Soc Elective 3

Senior Year

First Semester  Hours
Related Field Electives 9
Soc Electives 6

Second Semester  Hours
Related Field Electives 9
Soc 410 3
Tier III Course [T] (GER) 3

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, 321, 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 or 396; 490, 492, 493, 495 or 496; Soc 101, 320, 321, 424, 433.

**SOCIAL WELFARE REQUIREMENTS (122 HOURS)**

This is a prototype of one of many ways to complete the Sociology Degree Program in four years. The programs has built-in flexibility, and students should consult their advisers regarding other acceptable course plans.

**Freshman Year**

**First Semester**

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math Proficiency [N] (GER) 3
- Social Sciences [S,K] (GER) 3

**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**

**First Semester**

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) or Related Field Elective 3
- Intercultural [I,G,K] (GER) 3
- Related Field Elective 3
- Science Elective (GER) 4
- Soc 101 3

**Second Semester**

- Physical Sciences [P] (GER) 4
- Related Field Electives 6
- Soc 320 3
- SW 190 3

**Junior Year**

**First Semester**

- Related Field Electives 6
- Soc 321 4
- Soc 351 (Soc 330) 3
- SW 390 (or SW 393) 3
- Complete Writing Portfolio

**Second Semester**

- Related Field Electives 6
- Soc 340 (Soc 424) 3
- SW 395 or 396 (SW 396) 3
- SW 495 or 496 3

**Senior Year**

**First Semester**

- Related Field Elective 3
- SW 393 (Elective) 3
- SW 492 1
- SW 493 1
- Tier III Course [T] (GER) and Related Field Elective 3

**Second Semester**

- SW 490 15

1. Related fields courses are approved by the department and chosen/identified in consultation with the major advisor. 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 SW course may be counted toward the minor (subject to the above provisions) except SW 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**

**Sociology**

**Soc**

101 [S,D] Introduction to Sociology 3 Human society and social behavior; effects of groups, organizations, cultures, and institutions.
356 Sociology of Aging 3 Aging as a lifelong process: behavior, personality competencies, social relations changes over the life course; historical, social structural, demographics, 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 [M] Criminology 3 Crime measurement, the correlates of crime, and specific types of crime such as white-collar and drug crime.


363 The Social Organization of Hate Crimes 3 Definition measurement, social context, and social regulation of hate crimes as a social problem; emphasizing their production and social organization.

364 [M] Law and Society 3 Prereq Crm J 101 or Soc 101. Various points of intersection of legal and social systems; special attention given to historical development.

365 Problems of Alcohol Addiction and Abuse 3 Same as Psych 365.

366 Treatment Approaches in Alcohol Abuse/Alcoholism 3 Same as Psych 366.

367 Juvenile Justice and Corrections 3 Same as Crm J 365.

371 Small Group Analysis 3 Prereq Soc 101. Interpersonal relations in small groups; influence and social power.

372 [M] The Sociology of Film 3 The social, economic, and political factors that influence film production and the impact of films on American culture.

373 [S,D] Media, Culture and Society 3 The production of popular culture by media organizations and its effects on society.

375 Aspects of Sustainable Development 3 Same as Econ 375.


391 Special Topics in Sociology V 1-3 May be repeated for credit; cumulative maximum 6 hours.

392 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

393 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

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

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

410 [M] Development of Social Theory 3 Prereq Soc 101. Examination of the foundations of sociological theory; exposes students to original works of theorists. Credit not granted for both Soc 410 and 510.


418 Human Issues in International Development 3 Same as Anth 418.

420 Sociological Methods and Techniques 3 Prereq Soc 320. Introduction to sociological research methods; research procedures; measurement, observation, experimentation, survey methods, sampling, questionnaire construction, analysis.

421 Quantitative Techniques in Sociology II 3 Probability theory; sampling distributions, random variables, matrix approaches to statistical techniques, calculus for statistics and computer applications.


430 [T] Society and Technology 3 Prereq completion of one Tier I and three Tier II courses. Role of technology in social evolution; social impacts and shaping of technology.

433 [T] Urbanization and Community Organization 3 Prereq three 300-400-level social science courses; completion of one Tier I and three Tier II courses. Organization, function, change, development, and decline of communities; applications emphasizing rural or urban settings.

442 [T] Political Sociology 3 Prereq completion of one Tier I and three Tier II courses. Sociological analysis of political institutions and power structures; social and cultural basis of political behavior.

446 Medical Sociology 3 Social factors related to health and illness; organization and change in health care; impacts of health care reform, rising costs, and aging. Credit not granted for both Soc 446 and 546.

455 [T] 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 Pol S courses. Processes of collective behavior and social movements in historical and contemporary societies.

480 Sociology of Race Relations 3 Basic understanding of race relations; major sociological concepts and theories regarding minority and majority group relations. Credit not granted for both Soc 480 and 580.

484 [T,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; adaption of general models to specific problems.

517 Seminar in Contemporary Sociological Theory 3 Recent developments in sociological theory, analysis, application and appraisal of specific theoretical systems.

519 International Development and Human Resources 3 Same as Anth 519.

520 Research Methods in Sociology 3 Methodology of social research at the professional level.

521 Regression Models 3 Prereq Soc 421. Simple and multiple regression, structural equation models, nonlinear applications, applications for discrete dependent variables.

522 Advanced Sociological Methodology 3 May be repeated for credit; cumulative maximum 12 hours. Prereq Soc 521. Scaling theory, sampling theory, experimental design, measurement of association, multivariate analysis, current methods and techniques.

523 Qualitative Methods Practicum 3 Prereq grade standing. Introduction to qualitative research methods as used in social sciences; epistemological underpinnings and empirical techniques.

524 Sociology and Public Policy 3 Graduate-level counterpart of Soc 424; additional requirements. Credit not granted for both Soc 424 and 524.

525 Practicum in Survey Research 3 Prereq Soc 520. Practical experience in design and implementation of telephone and mail surveys; participation in all aspects of conducting a survey.

530 Demography 3 Population studies; causes, effects, and measurement of changes in fertility, mortality, and migration; population estimation and projection.

531 Human Ecology 3 Ecosystem context of human life; change viewed ecologically; sociological use and misuse of ecological concepts; issues in theory and research.

532 Environmental Sociology 3 Societal-environmental interactions; impacts of human societies on the physical environment; environmental impacts on human behavior and social organizations.

533 Social Impact Assessment 3 Sociology’s contribution to environmental impact assessments: methods, contents, and contexts of assessing social impacts of proposed developments. Cooperative course taught by WSU, open to UI students (RRT 504).

534 Energy and Society 3 Energy and societal evolution; energy consumption patterns and quality of life; social impacts of energy shortages and alternative energy systems.

535 Technology and Society 3 Prereq grade standing. Analysis of sociotechnical systems; effects of technology on society; the social shaping of technologies and their environmental impacts.
542 Theories of Social Stratification 3 Marx, Dahrendorf, Weber, Sorokin, Mills, Pareto; problems of stratification research; social class and social policy.

544 Sociology of Religion 3 Role of religion in social structure, process and change; analysis of religious behavior.

545 Sociology of Community 3 Community stability and change; interaction processes; decision making; societal linkages; effects on well-being.

546 Medical Sociology 3 Graduate-level counterpart of Soc 446; additional requirements. Credit not granted for both Soc 446 and 546.

548 Political Sociology 3 Systematic survey of theories and the major research literature in political sociology.

550 Survey of Social Psychology 3 Survey of theories, findings, and methods; self and identities, interaction processes, socialization, emotions, gender relations, group processes and network relations.

551 Comparative Family Systems 3 Comparative research on and theory of marital, family, and kinship relations and behavior.

552 Practicum in Family Research V 1-4 May be repeated for credit; cumulative maximum 12 hours. Research design, measurement, data collection, analysis, and manuscript writing.

553 Social Organization and the Family 3 The family as a social institution; principles of social organization applied to family relationships; macro-level analyses of family structure.

554 Social Psychology of the Family 3 The family as an interacting group; social psychological theories and research applied to family relationships; effects of families on individuals.

555 Sociology of Gender 3 Sociological theory and research on gender and gender inequality in American society.

556 Sociology of Aging 3 Theory and research on changes that individuals undergo over the life course 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 deviance; action programs; and emerging issues.

571 Small Group Theory and Research 3 Theory and methods of small group research; types of groups, 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 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.

Social Welfare and Public Policy

S W

190 Introduction of Social Work 3 Survey of practice; social workers and social service agencies, individual, group, and community practice.

390 Social Welfare History and Policy 3 Prereq S W 190. Current social welfare programs; income maintenance, health services, criminal justice, public housing, child welfare; historical development of social welfare programs.


395 Child Welfare 3 Pre req S W 190. Social work practice in child welfare; adoption, foster homes, child protection, group homes, day care, children's institutions, dependency, traditional and non-traditional family.

396 Social Work with the Aging 3 Prereq S W 190. The aging process; accessing community resources for the elderly; applying social work methods to the elderly and their family systems. Cooperative course taught by WSU, open to UI students that year.

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 Pre req S W 190. Social work values, ethics; technical aspects of interviewing and working with client systems; communication; group work skills.

495 Social Work in Corrections 3 Pre req S W 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 Pre req S W 190. Applying social work methods to the fields of health and mental health with an emphasis on practical skills.

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

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

SOIL SCIENCE

See Department of Crop and Soil Sciences.

Department of Speech and Hearing Sciences

Professor and Department Chair, G. D. Chermak; Professor, C. L. Madison; Professors Emeriti, J. K. Frankis, R. E. Potter, M. E. Wingate; Associate Professors, J. M. Johnson; Assistant Professors, E. Inglebret, J. Ray; Clinical Associate Professors, J. Hasbrouck; Clinical Assistant Professors, S. Bassett, C. Jones, J. Nye, L. Power, L. Vogel; Adjunct Lecturer, M. Mitchell; Instructors, S. Johnston, M. Ratsch.

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.

Schedule of Studies

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 in the major courses, designated [M].

Speech and Hearing Sciences majors are required to satisfactorily complete clinic apprenticeship and clinic practice (SHS 461 and 475) to fulfill degree requirements. Students must present evidence of good character and fitness to participate in clinic. A background investigation conducted by the Washington State Patrol is required to establish good character and fitness requisite to participation in clinic. Majors must also have a tuberculin (TB) skin test prior to participating in clinic apprenticeship and clinic practice. The test is available at Health and Wellness Services.

The Speech and Hearing Sciences Department provides preparation for professional (graduate) training as a speech-language pathologist or audiologist. This course sequence is based on fall enrollment. GERs test is available at Health and Wellness Services. Students must present evidence of 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 REQUIREMENTS (120 HOURS)**

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<thead>
<tr>
<th>Semester</th>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Freshman Year</td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td></td>
<td>Biological Sciences [B] (GER)</td>
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<td></td>
<td>Communication [C,W] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<td>GenEnl 110 [A] (GER)</td>
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<td>Second Semester</td>
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<td>Art &amp; Humanities [H,G] (GER)</td>
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<td></td>
<td>Arts &amp; Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER)</td>
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<td>GenEnl 111 [A] (GER)</td>
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<td></td>
<td>Physical Sciences [P] (GER)</td>
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<td>Psych 105 [S] (GER)/SHS Elective</td>
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<td>Sophomore Year</td>
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<td></td>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<td>SHS 205</td>
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<td>SHS 250</td>
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<td>Second Semester</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td></td>
<td>SHS Electives</td>
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<td>Stat 212 [N] (GER)/SHS Elective</td>
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<td>Junior Year</td>
<td>First Semester</td>
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<td></td>
<td>SHS 201</td>
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<td></td>
<td>SHS 371</td>
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<td>SHS 372</td>
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<td>SHS 378</td>
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<td>SHS Elective</td>
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<td>SHS 202</td>
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<td>SHS 376</td>
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<td>SHS 461</td>
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<td>SHS 472</td>
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<td>SHS 478 [M]</td>
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**Senior Year**

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<td>SHS 377</td>
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<tr>
<td>SHS 475 [M]</td>
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<td>SHS 477</td>
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<td>SHS 482</td>
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<td>Second Semester</td>
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<td>SHS 479</td>
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<td>SHS 480</td>
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<tr>
<td>Tier III Course [T] (GER)</td>
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**Minor in Speech and Hearing Sciences**

A minor in speech and hearing sciences requires a minimum of 16 hours including SHS 205, 371, 372; 8 hours must be 300-400-level courses excluding SHS 461 and 475.

**Minor in Disability Studies**

The minor in Disability Studies requires 18 credit hours, with 9 hours in 300-400-level courses, including CAC 302, SHS 250, and SHS 489. Students select additional courses within or across two designated tracks of Culture and Society—Am St 216, Arch 202, CAC 101, 440, Com 471, H D 350, SHS 201, 202, Soc 102, 331, 340, 360, 373, 455, 474, W St 200, 300—and Science and Rehabilitation—ColPy 478, Econ 455, FSHN 405, MtSt 484, PharP 250, Phil 365, SHS 473, Sp Ed 301, 309, T & L 330, and others in consultation with your advisor.

**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**

<table>
<thead>
<tr>
<th>Speech and Hearing Sciences</th>
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<td>SHS 118 Accent Reduction for International Students</td>
<td>2</td>
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</table>

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 dyslexia.

377 Anatomy and Physiology of the Speech Mechanism 4 Anatomical and physiological basis of speech production and the pathologies and alterations 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 V 1-3 May be repeated for credit; cumulative maximum 9 hours. Study of specialized topics in speech and hearing sciences.

460 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Study of specialized topics in speech and hearing sciences.

461 Clinical Apprenticeship in Speech-Language Pathology and Audiology 2-3 Pre-requisite preparation; observation of and assisting in therapy; state laws; clinical methods.

470 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. By interview only. Study of specialized topics in speech and hearing sciences.

471 Speech-Language Pathology and Audiology in Schools 3 Prereq SHS 461 or CR. Therapy methods and procedures in speech-language pathology and audiology; state/federal laws affecting public school therapy. Cooperative course jointly taught by WSU and UI (EASP 351).

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 major, 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.

478 [M] Language Impairment: Assessment and Therapy 3 Prereq SHS 371. Assessment and habilitation for the preschool and elementary-age child with language disorders.

479 Neurology for Speech-Language Pathology and Audiology 3 Prereq SHS 377. Neuroanatomical and neurophysiological bases of speech production and audition; neuropsychologies 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/j, 475 or c/j, 478. Principles, techniques, and materials involved in exploring the nature of speech and language disorders; planning programs of therapy.

489 [T,D] Disability and Society 3 Prereq completion of one Tier I and three Tier II courses. Perceptions and stereotypes of disability related to theories of marginality and stigmatization; images in films, media, and literature.

490 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. By interview only. Study of specialized topics in speech and hearing sciences.

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 1 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.

556 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. Augmentive 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/j in SHS 375. On-site and off-site clinic operations, policies, procedures; legal, ethical, and professional issues for schools and medical settings.


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 measurements; 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/j. 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 otorhannatous 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 376. 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 Certificate 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; otoacoustic 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 Problems, Directed Study, and/or Examination Variable credit. S, F grading.
Program in Statistics


Statistics is the science that deals with the collection, analysis, display, and interpretation of data. The courses 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 programs in the discipline 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.

Minor in Statistics

The minor in statistics requires 16 credit hours which must be approved by the Program in Statistics. Only courses which do not have significant overlap in statistical content will be approved as counting toward the minor. At least 9 of the 16 hours must be 300-400-level course work and at least 9 of the 16 hours must be from courses carrying a STAT prefix. Students are encouraged to have the courses they wish to count toward a STAT minor approved by the Program as early in their studies as possible.

Description of Courses

Statistics

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.

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

360 Probability and Statistics 3 Same as Math 360.


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/ISP, 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 Stat 510.

412 Biometry 3 Sec 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, 201, 202, or 220; statistics course. Binomial, Poisson, multinomial distribution; contingency tables, Fisher's tests, log-linear models; ordinal data; applications in biology, business, psychology, 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 2 Prereq Stat 212 or 360. Simple and stratified random sampling; systematic sampling; cluster sampling; double sampling, area sampling. Cooperative course taught jointly by WSU and UI (Stat 422).

423 Statistical Methods for Engineers and Scientists 3 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 Math 456 and Math 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 511.

512 Analysis of Variance of Designed Experiments 3 (2-2) Prereq Math 360 or Stat 412 or equivalent. Principles of experimental design and analysis and interpretation of data.

513 Advanced Econometric Application 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 (2-2) Prereq Math 360 or Stat 412 or equivalent. The design and analysis of experiments by linear models.

531 Econometrics 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; unified approach based upon the generalized inverse. Cooperative course taught jointly by WSU and UI (Stat 533).

535 Regression Analysis 3 Prereq Stat 430 or 456. Conceptual development of regression; estimation, prediction, tests of hypotheses, variable selection, diagnostics, model validation, correlation, and nonlinear regression. Cooperative course taught jointly by WSU and UI (Stat 510).


542 Applied Stochastic Models 3 Same as Dec S 542.

544 Applied Stochastic Processes 3 Prereq Stat 430 or 443. Poisson and Markov processes; queuing 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.
A mission of the Department of Teaching and Learning, through its constructivist model of teacher education, is to prepare effective practitioners and scholars who possess the leadership and problem-solving skills necessary to meet the needs of society. The constructivist approach, in contrast to approaches that view the purpose of the teacher as merely transmitting knowledge, requires students to be active and critical participants in the formation of their own intellectual development in a life-long process to evaluate their performance in terms of its effects upon children, schools, and society. Also, teachers must be liberally educated, well grounded in human growth and development, informed and appreciative of cultural and linguistic diversity, committed to egalitarian ideals, capable of communicating and inspiring an interest in learning, competent in the technical aspects of teaching and managing group learning, and reflective about their own beliefs and actions. WSU's constructivist model provides students with a challenging framework for the study of individual and group experiences, responses, and perceptions. This framework forms the basis for research that informs the application and formulation of educational theory and methodology used to advance professional practice.

The Washington State University annual report on teacher preparation, required under Title II, Section 207(b)(2) of the Higher Education Act, is available upon request. Visit our web site at education.wsu.edu/T&L/.

**Teacher Certification**

The College of Education prepares individuals to teach elementary education, early childhood education, and various single subjects. The teacher certificate, awarded by the State Superintendent of Public Instruction upon recommendation by Washington State University, designates the subject area in which the certificate holder is qualified to teach. Teacher preparation is offered at the Pullman, 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, the FBI, and Office of Professional Practices.

2. The degree is awarded and the professional preparation program for a primary endorsement 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 applies also to math, science, and social studies requirements in the elementary and early childhood programs.
   - The cumulative WSU 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.

3. The candidate has achieved a passing score on the state-wide examinations in basic skills, content and in the pedagogy assessment.

4. 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 elementary endorsement course work, plus student teaching at WSU. Transfer students and postbaccalaureate applicants should consult with an advisor 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 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. Student teaching must be completed at an approved WSU site in the state of Washington with supervision by an approved WSU provider.

**Certificate Renewal, Continuing Certificate, Professional Certificate, Add-On Endorsements**

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 642114, 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 elementary education the candidate shall satisfy degree requirements of the Department of Teaching and Learning. To prepare in early childhood education, the candidate shall satisfy the degree requirements of the Department of Human Development. To prepare in a single subject, the candidate shall complete the baccalaureate degree/teaching option offered through the subject matter department, or in general studies. Single-subject primary endorsement 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, physics, science, and social studies. Supporting, (non-degree) endorsements are offered in biology, chemistry, bilingual education, drama, early childhood, earth science, English, English as a second language, French, German, Russian, Spanish, health/fitness, history, mathematics, music, physics, and reading. Non-degree primary endorsements in special education and reading are also offered. Candidates endorsed for single subjects are recommended for assignment in grades S-12 except those endorsed in ESl, bilingual education, foreign languages, health/fitness, music, reading, or special education who are recommended for assignment in grades P-12. Specific course requirements for endorsements are listed under Single Subject Certificate Programs at the end of this section.

To enhance employment opportunities, it is recommended that candidates complete requirements for one or more supporting endorsements in addition to the primary endorsement. Endorsement requirements are subject to change by the State Board of Education and 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. An interview is required for placement. Student teaching must be completed at an approved WSU site in the state of Washington with supervision by an approved WSU provider. The following courses are required field experiences.

**T & L 300, Introductory Field Experience** (1 credit): This first course in the certificate program engages the student in reflection upon the responsibilities and realities of the teaching profession. The student participates and observes daily activities for one week in a P-12 public or private school classroom.

**T & L 402, Instructional Practicum I** (1 credit), **T & L 405, Instructional Practicum II** (1 credit), **T & L 490, Advanced Practicum** (3 credits): Elementary education majors enroll in practica concurrent with each of the three sets of blocked courses. T & L 402 and 405 involve participation in school and community settings to apply concepts learned in blocked courses. Practicum placement and activities are arranged by the course instructors. T & L 490 is taken in the last semester prior to student teaching and involves five weeks full-time in a school setting. The block of courses during that semester are taken during the first 10 weeks of the semester. Practicum placements are arranged by the Department of Teaching and Learning.

**T & L 317, Secondary Practicum and Seminar** (2 credits), **T & L 400, Advanced Field Experience** (2 credits): Secondary education majors enroll in two practicums. T & L 317 is a three-week, full-time experience in a public or private school in the student’s home community in May following completion of WSU’s spring semester. T & L 400 is a 12-week, 5 hrs/week experience in local schools. All practicums involve observation, reflection, and practice in classrooms.

**T & L 415, HD 407, Ag Ed 407, Mus 497 Student Teaching.** A semester of full-time teaching in a public school. Prior to student teaching the certificate candidate will: interview; make application and pay certification fees; satisfactorily complete all course work for the degree and teacher certificate; receive fingerprinting clearance from the Washington State Patrol, the FBI, and the Office of Professional Practices. Student teaching must be completed at an approved WSU site in the state of Washington with supervision by an approved WSU provider.

Masters In Teaching (MIT)
The MIT is a full-time, 15-month, field-based program leading to elementary certification and a master's degree. Applicants must have a bachelor's degree from an accredited institution with a minimum 3.0 g.p.a. in their last 60 semester hours of 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 502, T & L 504, T & L 517, 525, 540, 556, 564, 572, 588, 593, 594, 595, 702; SpEd 520.

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.

**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 of review by faculty.**

In addition to the certificate options described below, WSU Tri-Cities 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.

Bachelor of Arts
Applicants to the bachelor of arts program with 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 equivalent program prerequisites: ComSt 102, Engl 101 and 201, Math 251 and 252, Psych 105, HD 101, four approved sciences and approved study in U.S. history, economics, geography and civics. For admission criteria see WSU Pullman requirements.

Masters in Teaching (MIT)
This two-year, field-based program leading to 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 1350; 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.

Course of Study (46-50 hrs): Ed Ad 506, EdPsy 401, 503, 504, Kin 586, T & L 506, 507, 508, 518, 540, 552,
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) 546-9779, or by email at admissions@vancouver.wsu.edu.

WSU Vancouver seeks to prepare the best possible teachers and therefore seeks highly qualified individuals for admission to the Bachelor of Arts, MIT and secondary certification programs. Admission to, or continued enrollment in, a teacher preparation program may be denied a candidate on the basis of review by 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.

Bachelor of Arts in Education

This Teacher Preparation Program culminates in a bachelor's degree with elementary certification. The program is designed for students who have a direct transfer Associate of Arts degree or who have completed 60 semester hours of study and who have also completed the required program prerequisites. Students can obtain a list of the prerequisites by contacting the Education Department at (360) 546-9673. Students must be admitted to both WSU and the Teacher Preparation Program before beginning education classes. The program is full-time with courses generally offered in the late afternoon and evenings. Students are admitted and begin classes only during the summer session.

Masters in Teaching (MIT)

A full-time, 15-month field-based program leading to elementary certification and a master's degree. Applicants must have a bachelor's degree from an accredited institution with a minimum 3.0 g.p.a. in their last 60 semester hours of graded course work, and submit the MIT application portfolio which is available from the WSU Vancouver Office of Admissions. Applications are available in the summer and must be submitted by December 1 for the program beginning the following May.


Secondary Certification

Candidates may choose postbaccalaureate teacher certification only or a master's degree with 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. In order to have your transcripts evaluated, forward official transcripts in sealed envelopes with a cover letter requesting an evaluation for a specific content area to the above address. 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 selected with advisor approval.

Schedule of Studies

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.

PRESCHOOL-THIRD GRADE CERTIFICATE REQUIREMENTS

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.

BACHELOR OF ARTS IN EDUCATION, ELEMENTARY EDUCATION TEACHER CERTIFICATE PROGRAM (120 HOURS) \(^*\)

Candidates for the undergraduate elementary education teacher certificate program will satisfy degree requirements of the Department of Teaching and Learning. The degree will be awarded 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 does not count toward the total hours required for the degree.

Freshman Year\(^*\)

First Semester Hours

| Biological Sciences [B] (GER) | 4 |
| ComSci 102 [C] or H D 205 [C] (GER) | 3 |

Second Semester Hours

| GenEd 110 [A] (GER) | 3 |
| Math 251 | 3 |
| Mus 153 [H] (GER), if necessary | 3 |
| Psych 105 [S] (GER) | 3 |
| Science Elective [B,P,Q] (GER) | 3 or 4 |
| T & L 300 | 1 |

Sophomore Year

First Semester Hours

| Am St 216 [S,D] or Hist 150 [S,D] (GER) | 3 |
| Engl 201 [W] (GER) | 3 |
| GenEd 111 [A] (GER) | 3 |
| Physical Sciences [P] (GER) | 3 or 4 |
| T & L 301 | 2 |
| Certify Major | |
| Complete Writing Portfolio | |

Second Semester Hours

| Math 252 [N] (GER) | 3 |
| T & L 305 | 2 |
| T & L 306 [M] | 3 |
| T & L 307 | 2 |
| T & L 320 | 3 |
| T & L 330 | 2 |
| T & L 402 | 1 |

Junior Year

First Semester Hours

| Mus 388 | 2 |
| Science Elective [B,P,Q] | 3 |
| T & L 352 | 3 |
| T & L 371 | 3 |
| T & L 385 | 3 |
| T & L 405 | 1 |

Second Semester Hours

| Intercultural [I, G, K] (GER) | 3 |
| T & L 390 | 3 |
| T & L 483 | 3 |
| Tier III Course [T] (GER) | (Am St 473 recommended) 3 |
| Elective | 3 |

Senior Year

First Semester Hours

| 10 weeks work on campus followed by 5 weeks field experience at approved statewide site. EdPsy 401 | 2 |
| Sp Ed 420/421 | 2 or 3 |
| T & L 310 [M] | 2 |
| T & L 403 | 2 |
| T & L 413 | 2 |
| T & L 445 | 2 |
| T & L 490 | 3 |

Second Semester Hours

| T & L 415 | 16 |

\(^*\) During the freshman year, students must qualify to enroll in Math 251, pass the Music 388 competency exam or take Music 153, and begin the University Junior Writing Portfolio, as students must receive a pass before taking T & L 306.

\(^{2}\) Special Education endorsement requires Sp Ed 421.

SPECIFIC SUBJECT TEACHER CERTIFICATE

Department of Teaching and Learning
### REQUIREMENTS

Candidates for specific subject certificates shall declare a major with the subject-matter department and meet the GER and degree requirements of that department. Students completing subject-specific endorsements will follow the Secondary Professional Education Core: Psych 105; EdPsy 402; T&L 300, 301, 302, 303, 317, 328, 400, 404, 415, 445, and 478 unless admitted to a postbaccalaureate or Ed.M. certificate program. Students desiring endorsement in reading, bilingual education, English as a second language, or special education typically will complete the bachelor of arts degree in education and a primary endorsement in elementary education. Students diverging from this pattern should consult with an advisor about appropriate professional core courses.

In addition to meeting requirements of the degree-granting department, the student must meet admission requirements and make formal application to the teacher preparation program prior to enrolling in any professional education courses beyond T & L 300, 301, and 317. It is recommended that candidates begin professional education courses in the sophomore or junior year to meet sequencing requirements. Students should include the following courses within GER selections to fulfill prerequisite and admission to teacher preparation program requirements: ComSt 102; Engl 198 and 199 or Engl 201, 301, 302, or 402; math proficiency; Psych 105.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
<td></td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<td></td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Psych 105 [S] (GER)</td>
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<td></td>
</tr>
<tr>
<td>Science Elective [B,P,Q]</td>
<td>3 or 4</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>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Primary Endorsement/Major</td>
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<thead>
<tr>
<th>Sophomore Year</th>
<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)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Engl 201 [W], 301 [W], or 302 [W]</td>
<td>3</td>
<td></td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Primary Endorsement/Major</td>
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</tr>
<tr>
<td>T &amp; L 300</td>
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<tr>
<td>Certify in Major</td>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Intercultural [I,L,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Primary Endorsement/Major</td>
<td>12</td>
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<tr>
<td>T &amp; L 301</td>
<td>3</td>
</tr>
<tr>
<td>Certify In Teaching &amp; Learning</td>
<td></td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<td>Three-Week May Field Experience (for T &amp; L 317)</td>
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<tr>
<th>Junior Year</th>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Primary Endorsement/Major</td>
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<td></td>
</tr>
<tr>
<td>Supporting Endorsement</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>T &amp; L 302</td>
<td>2</td>
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<tr>
<td>T &amp; L 303</td>
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<td></td>
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<tr>
<td>T &amp; L 317</td>
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#### Second Semester

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<thead>
<tr>
<th>Primary Endorsement/Major</th>
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<tbody>
<tr>
<td>Supporting Endorsement</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 328</td>
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</tr>
<tr>
<td>T &amp; L 478</td>
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#### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Primary Endorsement/Major</td>
<td>3</td>
</tr>
<tr>
<td>Supporting Endorsement</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 404</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 445</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>EdPsy 402</td>
<td>2</td>
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<tr>
<td>Supporting Endorsement</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 400</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Course [T] (GER)</td>
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#### Fifth Year

<table>
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<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Supporting Endorsement or T &amp; L 415</td>
<td>2</td>
</tr>
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</table>

### Agriculture

Primary Endorsement (60 hours): A S 101, Ag Ec 340 or 350; Ag Ed 342, 407, 440, 442, 471; AgFM 201, 402; CropS 101; 300-400-level CropS elective; Hort 201, 3 hrs Hort elective; SoilS 201, plus 17 additional credits in technical agriculture selected with advisor approval. Twenty credits in technical agriculture must be upper division. A valid first aid card is required for vocational certification.

#### Bilingual Education

Supporting Endorsement (18 hours): T&L 333 or 335; 339, 401, 409; 411 or 414; One or more from T&L 335 if only 333 selected above; 410, 412, 472, 473, Anth 350, 355, 450, Engl 354, 443 or 458.

#### Biology

Primary Endorsement (56-58 hours): Biol 103, 104, 301, 372, 405, 430, 499; Chem 105, 106, 240; Hist 381, 382, 453 or Soc 430; Math 140 or 171; MBioS 303; 302 or 401 and Biol 452; 6 hours approved biological sciences electives.

Supporting Endorsement (37 hours): Biol 103, 104, 301, 372, 430; Chem 105, 106, 240; Hist 381, 382, 483 or Soc 430; 6 hours approved biological sciences electives.

#### Chemistry

Primary Endorsement (55-57 hours): Chem 105 or 115; 106 or 116; Chem 220, 222, 340, 341, 342, 499 (1-3 credits); Hist 381, 382, 483 or Soc 430; Math 140 or 171; MBioS 303, 304; Ph S 430;Phys 101, 102, or 201, 202. Additional 9 hours 300-400-level Chem (Chem 331, 333 suggested.)

Supporting Endorsement (34-36 hours): Chem 105 or 115; 106 or 116; Chem 220, 222, 240 or 340, 341; 499; Hist 381, 382, 483 or Soc 430; MBioS 303, 304; Ph S 430; Phys 101.

#### Early Childhood Education

Primary Endorsement (37 hours): H D 201; 202 or 101; 204, 302, 341, 342, 410, 446, 449, 482, SpEd 409.

#### Earth Science

Primary Endorsement (61-63 hours): Geol 101 or 102 (102 preferred), 206, 210, 315, 340, 350, 499; Math 140 or 171; Phys 101, 102; Chem 105, 106; Biol 103; Astr 345; ES/RP 174; Hist 381, 382, 483 or Soc 430; Ph S 430; 3 hours 300-400-level geology elective, geo-morphology or oceanography recommended.

#### English

Primary Endorsement (46 hours): Foundation Courses: One from Hum 101, 103, 198, 302, 304, 335, 350 or 410; Engl 302; One from Engl 108, 199, 209 or 210. British Literature: Engl 305 or 306; 387 or 388; One from 383, 384, 385 or 386. American Literature: Engl 380 or 381; One from Engl 311, 314, 321, 322, 341, 343 or 345. Professional Courses: Engl 300, 323, 324, 326; One from Engl 251, 351, 352, 353, 492, 493, 494 or 495; 9 hours electives in Engl or Hum selected with advisor approval, Engl 325 strongly recommended.

| Supporting Endorsement (21 hours): Engl 209, 210; 201 or 302; 323 | 324 or 326; 6 hours upper division English electives. |

#### English/Language Arts

Primary Endorsement (64 hours): Foundation Courses: One from Hum 101, 103, 198, 302, 304, 335, 350 or 410; Engl 302; One from Engl 108, 199, 209 or 210. British Literature: Engl 305 or 306; 387 or 388; One from 383, 384, 385 or 386. American Literature: Engl 380 or 381; One from Engl 311, 314, 321, 322, 341, 343 or 345. Professional Courses: Engl 300, 323, 324, 326; One from Engl 251, 351, 352, 353, 492, 493, 494 or 495. 6 hours electives in Eng or Hum selected with advisor approval. Journalism (9 hrs): Com 295, Jour 305, 330. Speech (3 hrs): ComSt 102 or 302. Theatre (6 hrs): Theat 163, 260 or 261.

#### Family and Consumer Sciences

Primary Endorsement (59 hours): Ag Ed 440; two from AMT 215, 216, 417; FSHN 120, 130, H D 201, 202, 203, 204, 302, 320, 350, 406, 407, 409, 410, 479,
Health and Fitness
Primary Endorsement (68 hours): Prereqs. Biol 102 or 103; Biol 251; Chem 101 or 105, FSHN 130. Ath T 311, H F 263, 361, 463, 481, MtvSt 199, 262, 264, 361, 380, 393, 415, 461, 481, 483, 484, PEACT 112, Psych 220; Proficiency in 4 of the following 5 PEACT activity areas: aquatics, individual, team, dance, gymnastics.
Supporting Endorsement (23 hours): FSHN 130, H F 263 or valid first aid card, 461, 481, MtvSt 199, 262, 264, 483. Recommended HLED 463 for high school employment.

History
Primary Endorsement (48 hours): Econ 101 or 102; Pol S 101; Psych 105; Hist 101, 102, 110, 111, 300, 422, 469, 480; one from Hist 230, 231, 270, 272, 273, 275; one from CAC 101, 111, 131, 151, 171, Hist 150 or W St 200; 12 hours 300-400-level Hist electives which must include two global/non-western courses.
Supporting Endorsement (24 hours): Hist 101, 102, 110, 111, 422, 490; one from Hist 230, 231, 270, 272, 273, 275; 3 hours upper division history electives.

Mathematics
Primary Endorsement (33 hours): Cpt S 153, Math 171, 172, 220, 273, 303, 315, 330, 360, 398; 320 or 421; 3-hours upper division math elective.

Music
Each primary endorsement requires the passing of a piano proficiency examination, an upper-division exam, a solo half-recital, a 2.5 g.p.a. and a grade of C or better in all music courses.
Primary Endorsement
Choral/Instrumental/General (74 hours): Mus 161, 251, 252, 253, 254, 351, 352, 353, 354, 360, 361; or 455; 480, 481, 482, 483, 487, 488, 489, 490, 491, 493, 494, 497. Performance Studies: 14 hours of which 2 hours must be at the 400-level. Performing Groups: 7 hours, minimum of 1 hour during each of seven semesters, to include at least one semester of Mus 435 for instrumentalists and Mus 428 for vocalists. Include a minimum of 2 hours in choral and 2 hours in instrumental ensemble. Total performance experience (performance studies and performing groups) must include a minimum of 4 hours in choral/vocal music and 4 hours in instrumental music.

Supporting Endorsement (36 hours): Biol 103; Chem 101; Hist 381, 382, 483 or Soc 430; Math 140; Ph S 430; Phys 201, 202, 303, 304, 320, 330, or 410; 499 (4 hours includes observing Phy 101 and 102.)
Supporting Endorsement (36 hours): Biol 103; Chem 105; Hist 381, 382, 483 or Soc 430; Math 140; Ph S 430; Phys 201, 202, 303, 304, 499 (4 hours includes observing Phy and 101 and 102.)

Physics
Primary Endorsement (49 hours): Astr 345 or Phys 380 or Biol 103; Chem 105, 106; Hist 381, 382, 483 or Soc 430; Math 140; Ph S 430; Phys 201, 202, 303, 304, 320, 330, or 410; 499 (4 hours includes observing Phy and 101 and 102.)

Reading
Supporting Endorsement (18-20 hours): T & L 306, 307, 320, 413; 450 or 528; 551, 553.

Science
Primary Endorsement (41 hour core plus option): Astr 345; Chem 105 or 115; 106 or 116; Geol 102, 210; Phys 101 or 201; 102 or 202; Biol 103, 104; Math 140 or 171; one from Hist 381, 382, 483, or Soc 430; Ph S or Biol 430.

Earth Science Option: Chem 222, 340, 341, 398, 481, 499; MBioS 303, 304.
Biology Option: Chem 220, Geol 240; Geol 206, 350; 310 or 340; 403, 499; ES/RE 174.

Special Education
Primary Endorsement (30 hours): This endorsement must be taken in conjunction with another primary endorsement. Students preparing to teach elementary or early childhood education take Sp Ed 301, 401, 402, 403, 404, 409, 421, 440, 470, 490 (4 credits). Students preparing to teach specific subject matter take all of the foregoing plus T & L 306, 320 or 462, 352; Math 251, 252.

BACHELOR OF SCIENCE IN KINESIOLOGY, HEALTH AND FITNESS TEACHER CERTIFICATE PROGRAM (138 HOURS)
This major program prepares individuals to teach physical education, health and fitness at the elementary and/or secondary levels. At all levels of instruction, individuals will acquire knowledge and skills necessary to maintain an active life involving movement, physical fitness and proper nutrition. Students will participate in activities that are designed to help them understand and value important health and fitness concepts and the contributions they make to a healthy lifestyle.

Freshman Year
First Semester
Biol 102 [B] or 103 [B] (GER) 4
Enl 101 [W] (GER) 3
HF 263 2
MtvSt 199 3
PEACT 112 1

Second Semester
Hours
Arts & Humanities [H,G] (GER) 3
Chem 101 [P] or 105 [P] (GER) 4
ComSt 102 (C) (GER) 3
MtvSt 264 3
PEACT Elective 1
T & L 300 1
Certify in Major

Sophomore Year
First Semester
Hours

Junior Year

First Semester
- T & L 311  3
- GenEd 111 [A] (GER)  3
- Intercultural [I,G,K] (GER)  3
- T & L 481  3
- T & L 302  2
- T & L 303  2
- T & L 317  2

Second Semester
- Biol 251  4
- FSHN 130 [B] (GER)  3
- GenEd 110 [A] (GER)  3
- PEACT Elective¹  1
- Psych 230  3
- Complete Writing Portfolio
- Complete May Practicum

Senior Year

First Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER)  3
- T & L 380  3
- T & L 393  1
- T & L 484  3
- PEACT Elective¹  1
- T & L 425  3
- T & L 404  2

Second Semester
- EdPsy 402  2
- HF 463  2
- T & L 415  3
- T & L 400  2
- T & L 445  2
- Tier III Course [T] (GER)  3

Fifth Year
- T & L 415 (student teaching)  16

¹ Selected with advisor approval.

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 certified education major, T & L 301, 317, c// in T & L 303. Development and implementation of curriculum and content literacy, including course outlines and lesson and unit plans.


304 Introduction to Middle Level Education  2 Prereq T & L 300. Study of adolescents; middle level organization and instructional strategies including field component at 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). Attributes, 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 graduated 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 For L 340.


330 Diversity in Schools and Society  2 Prereq admission to teacher preparation program. Gender, linguistics, cultural and learning diversity; concepts, issues, approaches to educating students in a diverse society.

333 Introduction to English as a Second Language (ESL)  3 Foundations of ESL with attention to basic concepts of second language processing in educational settings.

335 Bilingual Bicultural Education  3 Same as 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 educators.

400 Advanced Field Experience V 1 (0-3) to 6 (0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq certified education major; T & L 302, 303, 317. Sixty hours classroom observation and teaching prior to student teaching; weekly seminar; contact department semester prior to enrollment for orientation and approved placement. S, F grading.

401 Practicum in Bilingual/ESL Education  2 (0-6) May be repeated for credit; cumulative maximum 6 hours. Prereq T & L 333, 335, or graduate standing; Work with students from diverse cultural and linguistic backgrounds in an educational setting.

402 Instructional Practicum 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.
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, developments, issues, and/or applications in selected areas of education.

522 Topics in Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Recent research, development, issues, and/or applications in selected areas of education.

523 Topics in Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Recent research, development, issues, and/or applications in selected areas of education.

524 Topics in Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Recent research, development, issues, and/or applications in selected areas of education.

525 Classroom Management Seminar 2 or 3 Contemporary issues in management of elementary, middle school, and secondary classrooms.

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 530.

532 Children's Literature in the Curriculum 2 Prereq T & L 320 or teaching experience. Graduate-level counterpart of T & L 433; additional requirements. Credit not granted for both T & L 433 and 532.

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. Integrations in selected areas of education.

538 Writing Across the Curriculum 3 Writing for learning at grade levels K-12.

539 Innovations in Language Arts 3 Prereq T & L 303 or 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 Teaching 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 I 3 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 Comprehension through Literature 3 Prereq teaching experience. Key theoretical concepts and their implications for improved comprehension instruction, using children's literature.

560 Research in Teaching 3 May be repeated for credit; cumulative maximum 6 hours. Prereq teaching experience. Recent developments in research on teaching; both quantitative and qualitative research methodologies emphasized.

561 Elementary School Mathematics 3 Prereq T & L 352; Math 252; teaching experience. Research on curriculum and instruction issues in elementary school mathematics.


563 Seminar in Precollege Mathematics Education 3 Prereq T & L 542 or 562. May be repeated for credit; cumulative maximum 6 hours. Research on curriculum and instruction in mathematics education in grades K-12.

564 Elementary School Mathematics Methods 3 Introduction to research, theory, and methods of teaching K-8 mathematics; emphasis on integrating theory and practice.

571 Elementary School Science 3 Prereq T & L 371; teaching experience. Theories and research underlying science programs with classroom implications.

572 Elementary School Science Methods 3 Theoretical base to design and implement appropriate standards-based elementary science instruction.

573 Children's Literature and Hands-On Science 3 Prereq graduate standing. Students learn how to bring together language arts and science curricula to instill in children a curiosity about the world around them.

574 Science for All: An Individual and Multicultural Perspective 3 Prereq teaching experience. Implications of cultural and individual diversity for understanding western scientific and mathematical thought; an activity-based, educational perspective.

577 The At-Risk Learner 2 Strategies for working with at-risk students.

578 School and Community Interventions for At-Risk Students 2 How schools and communities work together to meet the at-risk challenge.

580 Multicultural Education in a Global Society 3 Graduate-level counterpart of T & L 480; additional requirements. Credit not granted for more than one of T & L 480, 580, 582.

582 Multicultural and Global Perspectives in Education 2 Concepts, theories and applications of multicultural and global perspectives in teaching and learning. Credit not granted for more than one of T & L 480, 580, 582.

583 Problem Solving in Elementary and Middle Level Education 3 Prereq admission to MIT program. Integration of knowledge and skills to address complex cases in teaching and learning.

586 Issues in At-risk Education 2 or 3 School and community resources to assist at-risk students and families.

588 Action Research: Teachers as Research 3 Prereq teaching experience. Theoretical concepts, research, issues, models, and strategies for implementation of action research.

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.

594 Art and Music Education 2 Instruction covering the theory and classroom practice of art and music.

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 certified education major; Sp Ed 401; c// in T & L 310, 403, 413, 445, 490 (3 credits); EdPsy 401. Roles and responsibilities of special education professionals in inclusion programs, including legal aspects and collaboration. Credit not granted for both Sp Ed 421 and 521.

430 Special Topics in Instruction V 1-3 May be repeated for credit; cumulative maximum 6 hours. New developments in research and practice in program development.

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 522.

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 and Fitness

HF

263 (Hi Ed) First Aid 2 (1-3) First aid; CPR; accident prevention; American Red Cross certification awarded to those who qualify.

361 (Hi Ed) Health and Wellness 3 Knowledge of the multi-dimensional aspects of wellness and concepts necessary for a positive lifestyle through self-assessment.

392 (MvtS) Practicum in Special Populations V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. S, F grading.

463 (Hi Ed) 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 (Hi Ed) Health Education Methods 3 Prereq HF 361. Methods and materials for teaching Health Education.

483 (MvtS) Fitness Education Methods 3 (2-3) Prereq MvtS 481. Basic principles, theory, practice of development and maintenance of fitness for health and physical performance; emphasis on application for teachers.

484 (MvtS) Principles of Movement for Individuals with Disabilities 3 Knowledge, understanding, and skills for teaching movement activities to individuals with disabilities.

490 (Hi Ed) Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Same as MvtS 490. S, F grading.

496 (Hi Ed) Special Topics V 1-3 May be repeated for credit; cumulative maximum 9 hours. Special topics in health.

499 (Hi Ed) 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 degree of Doctor of Veterinary Medicine, Bachelor of Science in Veterinary Science, Master of Science in Veterinary Science, and Doctor of Philosophy. Additional information, including requirements for admission, is contained in the general information section of this catalog.

The College of Veterinary Medicine at Washington State University is accredited by the American Veterinary Medical Association.

The following program is an outline of the minimum requirements necessary for application to professional study in the College of Veterinary Medicine.

PREVETERINARY REQUIREMENTS
College of Veterinary Medicine

Honors students complete Honors Requirements, social sciences, or the Tier III course.

V M 511P 4
V M 510P 10
V M 500P 1

First Semester

Hours

Second Semester

V M 512P
V M 520P
V M 521P
V M 534P
V M 545P

First Year

The professional curriculum for the Doctor of Veterinary Medicine degree is outlined below. A total of 147 semester hours is required for the degree. The minimum basic requirements are:

1. Arts and Humanities 3-6
2. Communication Proficiency 6
   (3 hours must be in written communications)
3. Intercultural Studies 3
4. Social Sciences 3-6
5. World Civilizations 6
6. Math Proficiency 3
7. Writing Portfolio

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

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 upon completion of one year of undergraduate study and the four-year professional program. The last three years of this program are a combination of Honors College courses and regular university classes which fulfill the preprofessional requirements. The last four years are the traditional Doctor of Veterinary Medicine program plus the completion of an honors thesis. Applicants should identify themselves to the Honors College as soon as students decide to enter W5U, because number of positions is limited.

J oint 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 prerequisite for entry into the combined degree program.

Scho le of Studies

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

First Semester

Hours

V M 568P
Second Semester

V M S12P
V M S20P
V M S21P
V M S34P
V M S45P

Second Year

First Semester

V M S22P
V M S35P
V M S36P
V M S46P
V M S89P

Second Semester

V M S23P
V M S37P
V M S43P
V M S51P
V M S87P
V M S88P

Third Year

First Semester

V M S43P
V M S52P
V M S53P
V M S54P or S55P
V M S69P
V M S83P

Second Semester

V M S70P
V M S71P
V M S72P
V M S90P
Electives

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 W5U. This is a seven-year program leading to the Doctor of Veterinary Medicine degree after satisfactory completion of the curriculum. It consists of three years of a unique undergraduate preprofessional education and the four-year professional program. The first three years of this program are a combination of Honors College courses and regular university classes which fulfill the preprofessional requirements. The last four years are the traditional Doctor of Veterinary Medicine program plus the completion of an honors thesis. Applicants should identify themselves to the Honors College as soon as students decide to enter W5U, 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 prerequisite 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 organ systems.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.

513 Advanced Neuroanatomy 4 Prereq anatomy or physiology course that included neuroanatomy. Advanced gross and microscopic anatomy of the mammalian central nervous system. Cooperative course taught by WSU, open to UI students (Zool 513).

592 Seminar 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592).

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

700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

Veterinary 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 5 (3-3-2) 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 5 (0-15) Prereq first year in Vet Med or graduate student. Detailed microscopic 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 511P. 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.

517P Applied Anatomy of Small Animals 2 (1-3) Prereq V M 512P. Applied anatomy of small animals including surgical anatomy.

518P Applied Anatomy of Large Animals 2 (1-3) Prereq V M 512P. Applied anatomy of large animals including surgical anatomy.

519P Anatomy of the Avian and Exotic Species 1 (0-2) Prereq V M 511P. Detailed macroscopic functional morphology of selected avian and exotic species, emphasizing the specialized anatomical adaptations of these animals.

520P Veterinary Physiology 5 (4-3) Prereq V M 510P. Physiology of domestic animals. Cooperative course taught by WSU, open to UI students (VS 518).

521P Mammalian Neuroscience 3 (2-3) Prereq V M 510P. 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 522P. Pharmacology and toxicology of the systems of domestic animals. Cooperative course taught by WSU, open to UI students (VS 526).

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 differences between exotic and domestic animal behavior. Cooperative course taught by WSU, open to UI students (Zool 526).

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 Principles of Life Science Research 1 Prereq by permission only. Seminars/discussions of practical issues confronting life science researchers with emphasis and overviews of disciplines related to biomedical research. S, F grading.

505 Design and Analysis of Biomedical Experiments 4 Prereq Math 107; statistics course. Design of experiments with application to clinical and basic biomedical research; choosing, applying, and evaluating appropriate data analysis methods.

521 Cardiorespiratory 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 522P. Practical veterinary pharmacology techniques and clinical applications.

528 Behavioral Mechanisms in Physiology 3 Examination of the physiological transduction mechanism that enables animals to interact behaviorally with their environment. Cooperative course taught by WSU, open to UI students (Zool 528).

529 Cellular and Molecular Neurobiology 4 Prereq biochemistry. Basic biochemical processes in the nervous system and their significance for normal and abnormal function. Cooperative course taught by WSU, open to UI students (Zool 529).

530 General and Comparative Neurophysiology 4 Same as Neuro 530.

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 534).

535 Pathophysiology of Blood 2 Physiology of erythron, hemostatic system and transfusion medicine.

537 Physiology and Biochemistry of Neuropeptides 3 Prereq MBioS 513 or V M 521P. Synthesis and metabolism, use as neurotransmitters and neurohormones, mechanisms of receptor interactions. Cooperative course taught by WSU, open to UI students (Zool 537).

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 (AVS 538).

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 543), 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 542), open to WSU students.

545 Experimental Design 1 (0-2) May be repeated for credit; cumulative maximum 6 hours. Same as Neuro 545. 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 564).

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.
Department of Veterinary Clinical Sciences


Description of Courses

Vocational Medicine

V M


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.

504P International Field Studies 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, agriculture 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.

563P 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.

569P Large Animal Medicine I 6 (3-3) Prereq third year Vet Med. Diagnosis and treatment of large animal infectious diseases.

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 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.

593P Pain and Analgesics 2 Prereq VM 587P. This is a supplemental core course for DVM students; anatomy and physiology of pain; recognition and treatment of pain in veterinary patients.

598P Introduction to Clinics 1 (0-3) Prereq 3rd year Vet Med. Introduction to the practice of veterinary medicine and surgery within the Veterinary Teaching Hospital including basic training and presentation in small animal medicine and surgery.

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.


612P Small Animal Surgery 4 (0-12) Prereq fourth year Vet Med. Surgical cases in clinic, ward rounds, case-discussions by students, seminars by faculty, design of surgical exercises. S, F grading.

613P Clinical Elective at Oregon State University 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 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 Teaching 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 clinical medicine or surgery. 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 with the Small Animal Medicine Exotic Practice Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

617P Clinical Neurology V 1 (0-3) to 3 (0-9) Prereq fourth year DVM student. Rotation will emphasize neuroanatomical localization, differential diagnosis, diagnostic testing, and treatments. S, F grading.

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 Agricultural 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, UL, 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) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience in small animal reproductive medicine and management. 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.


652P Technical and Diagnostic Radiology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq fourth year Vet Med. Laboratory exercises and instructional sessions to increase proficiency in clinical diagnostic radiology. S, F grading.

653P Imaging Services 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 and laboratory experience with the Radiology Section in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

657P Clinical Pathology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq fourth year Vet Med. Clinical laboratory diagnosis and interpretation. S, F grading.

675P Emergency and Critical Care V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med. Required rotation for all students through the Emergency and Critical Care Services, Veterinary Teaching Hospital. S, F grading.

676P Veterinary Research Practicum V 1 (0-3) to 8 (0-24) May be repeated for credit; cumulative maximum 14 hours. Prereq fourth year Vet Med, enrollment in research track program or approved for research career track. Individualized research project. S, F grading.

690P Externship V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq fourth year Vet Med. Theory of practice of veterinary medicine in a non-university situation. S, F grading.

691P Guided Preceptorship V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med. Guided preceptorship in an accepted extramural clinical or laboratory setting. S, F grading.

692P Government, Corporate, and Zoological Practice Elective V 1 (0-3) to 6 (0-18) May be repeated for credit; cumulative maximum 10 hours. Prereq fourth year Vet Med. Elective experience in government, corporate, and zoological veterinary medicine arranged through nationwide matching program. S, F grading.

693P Laboratory 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 and laboratory experience with major research facilities such as the Department of Comparative Medicine, University of Washington. S, F grading.

699P Advanced Clinical Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Advanced clinical subjects developed as courses for fourth year veterinary students. S, F grading.

Veterinary Clinical Medicine and Surgery V MS

361 (261) Agricultural Animal Health 3 Prereq one semester animal science or biological science. Introduction to basic concepts of infectious, noninfectious, and parasitic diseases of animals of agricultural and public health importance.

367 Prevention and Management of Equine Health Problems 3 Basic health care of horses with respect to good health care and recognizing and responding to disease and injury situations.

444 [M] Physiology of Disease 3 Same as A S 444.

498 Nikon University Seminar 2 (1-3) Prereq forth or fifth year veterinary DVM students from Nikon University. Lectures and laboratory sessions in small animal, exotic animal, and equine veterinary medicine and surgery. S, F grading.

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

582 Seminar in Clinical Medicine 1 May be repeated for credit.

583 Advanced Anesthesiology 2 Prereq DVM degree. Advanced veterinary anesthesiology as applied to clinical practice.
584 Comparative Theriogenology 1 Prereq DVM degree. Lectures from WSU College of Veterinary Medicine and Department of Animal Sciences and from UI Department of Animal and Veterinary Science.

585 Selected Topics in Advanced Clinical Neu rology 1 or 2 May be repeated for credit; cumulative maximum 10 hours. Prereq DVM degree. Advanced veterinary neurology as applied to clinical practice.

587 Hospital Rotation 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Supervised practical experience in all service areas of the veterinary hospital. Cooperative course taught by WSU, open to UI students (VS 587).

589 Advanced Clinical Veterinary Medicine V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Special topics.

591 Advanced Clinical Diagnosis V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Advanced course in systems clinical and laboratory examination.

592 Seminar 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592). S, F grading.

594 Advanced Small Animal Surgery 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Clinical experimental techniques.

595 Advanced Laboratory Diagnosis V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Advanced clinical laboratory diagnosis and interpretation.

596 Advanced Radiology 2 (1-3) Prereq DVM degree. Advanced study in the field of veterinary radiology and radiation treatment.

597 Diagnosis and Treatment of Surgically Correctable Soft Tissue Diseases in Small Animals V 1-2 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM or equivalent or preapproval. Review of recent advances in diagnosis and treatment of diseases in the field of small animal surgery.

598 Surgery Residents Seminar 1 May be repeated for credit. Prereq DVM degree. Surgery residents’ and interns’ presentations of case reports, literature reviews and research. S, F grading.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

**Department of Veterinary Microbiology and Pathology**


**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 533P. 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 peruses publications of international 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 M 541 or 441/541. Discussion and molecular laboratory for detection and identification of infectious agents for the diagnosis of animal diseases.

572 Advanced Topics in Microbiology, Parasi tology, or Immunology V1-3 May be repeated for credit; cumulative maximum 4 hours. Advanced topics in microbiology, parasitology, or immunology presented in short-course, or workshop format.

591 Seminar in Diagnostic Microbiology 1 May be repeated for credit; cumulative maximum 8 hours. Seminar in diagnostic veterinary microbiology.

592 Advances in Immunobiology 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592).

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

700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

**Veterinary Pathology**

V Pa 410 Survey of Pathobiology 3 Overview of pathobiology experimental oncology, epidemiology, and aging that emphasizes detecting, understanding and preventing disease.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.
501 Case-based Learning in Veterinary Pathology 1 (0-3) to 3 (0-9) Prereq second year Vet Med or DVM degree. Principles of pathophysiology, infectious disease, laboratory diagnosis, zoonoses, and food safety learned through the development of multistep teaching cases.

525 Introductory Readings in Veterinary Pathology 1 (0-3) May be repeated for credit; cumulative maximum 4 hours. Supervised introductory readings of publications, books, and research proposals.

542 Advanced Diagnostic Pathology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq V M 546P. Necropsy laboratory for techniques and skills in performing and interpreting necropsy material.

543 Laboratory Animal Pathology 3 May be repeated for credit; cumulative maximum 6 hours. Prereq V M 559P. Pathology of principal diseases of laboratory animals.


545 Mechanisms of Disease 5 Prereq MBioS 440 or V M 534P, 545P. Biochemical and immunological mechanisms involved in disease processes from the comparative standpoint.

547 Advanced Veterinary Parasitology 3 Prereq graduate or advanced undergraduate. Mechanisms involved in host-parasite relationships important to control of parasitic infections.

548 Introduction to Research 1 Introduction to research.

555 Research in Progress Seminar 1 May be repeated for credit; cumulative maximum 8 hours. Presentation of on-going student research project results.

569 Research Proposal 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Written preparation and oral presentation of a research proposal.

571 Advanced Topics in Pathology V 1-3 May be repeated for credit; cumulative maximum 4 hours. Advanced topics in pathology presented in short-course, or workshop, format.

592 Anatomic Pathology Seminar 1 May be repeated for credit. Histopathologic description and diagnosis.

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

700 Master's Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

Department of Women's Studies

Associate Professor and Department Chair, N. Sturgeon; Assistant Professors, M. Bloodsworth, L. Heidenreich; Instructors, J. Meuth, M. Sciacchitano.

Women's Studies is an interdisciplinary field of research and teaching that places gender and women at the center of inquiry. Central to our consideration of gender are the ways class, race, ethnicity, nationality, sexual orientation, age, and ability shape the female and male experience. Women's Studies places the social construction of gender in the context of national and international political and economic relations. The Bachelor's of Arts in Women's Studies is designed to achieve four major objectives:

1. to facilitate the understanding of continuing social change in structures and systems organized around gender, race, class, and sexuality;
2. to provide students with a systematic knowledge of the multidisciplinary scholarship about and by women in the field;
3. to enhance the qualifications of students preparing for careers in business, education, government, communications, the sciences and social sciences, among others; and
4. to further university and social goals of gender equality and social justice.

The department offers a major and minor in Women's Studies. The major requires a minimum of 39 credit hours which must include W St 200, 300, 332, 410, 484, and 481 or 485. The minor requires a minimum of 16 credit hours which must include W St 200, 300, and either 481 or 485. A Bachelor of Arts in Humanities, Social Sciences, or Liberal Arts, concentrated in Women's Studies, is available through the General Studies Program.

Schedule of Studies

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.

WOMEN'S STUDIES REQUIREMENTS (120 HOURS)

Freshman Year

First Semester

Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Science Elective (GER) 4
W St 200 [S,D] (GER) 3

Second Semester

Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
GenEd 111 [A] (GER) 3
Social Sciences [S,K] (GER) 3
W St Humanities Elective 3

Sophomore Year

First Semester

Communication Proficiency [C,W] (GER) 3
Math Proficiency [N] (GER) 3
W St 300 [S] M (GER) 3
W St Humanities Elective 3
Electives 3

Second Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Intercultural [I,G,K] (GER) 3
W St 332 [I] (GER) 3

W St Social Science Electives 6
Prepare for Women's Studies Internship (W St 410)

Junior Year

First Semester

Hours

300-400-level W St Elective 3
Arts & Humanities [H,G], Intercultural [I,G,K], or Social Sciences [S,K] (GER) 3
Physical Sciences [P] (GER) 4
W St 484 [T,D] (GER) 3
Electives 3
Complete Writing Portfolio

Second Semester

Hours

Arts & Humanities [H,G], Intercultural [I,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 [T] (GER) 3
Electives 3

1 Consult advisor.

Description of Courses

Women's Studies

W St 105 [S,D] Realizing Justice in a Multi-Cultural Society 3 Same as Crm J 110.

150 [S,D] Marital and Sexual Life Styles 3 Same as Soc 150.

200 [S,D] Introduction to Women's Studies 3 Multi-disciplinary perspectives on women and on their past, present, and potential contributions.


214 Gender and Culture in America 3 Same as Anth 214.

216 [S,D] American Culture 3 Same as Hist/Engl 216.


230 Human Sexuality 3 Same as Psy 230.

235 [H,D] African American History 3 Same as CAC 235/Hist 205.

255 [S,D] Chicana/o History 3 Same as CAC 255.

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

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

298 [S,D] History of Women in American Society 3 Same as Hist 298.
300 [S,M] Intersections of Race, Class 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 Analysis of the development of masculinity in its biological and cultural forms.

305 [S] Gender and Politics 3 Same as Pol S 305.

306 [H,M] Introduction to Literary Criticism 3 Same as Engl 308.

308 [H] Women Artists I, Middle Ages-1900 3 Same as F A 308.

309 [H] Women Writers 3 Same as Engl 309.


311 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subjects/issues relating to women.

312 [H,D] Philosophy and Feminism 3 Same as Phil 312.

315 [S,D] Women in Management and Leadership 3 Analysis of women's historical and contemporary role in American management.

316 [K] Gender in Cross Cultural Perspective 3 Same as Anth 316.

320 Resource Management and Problem Solving 3 Same as H D 320.

321 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subjects/issues relating to women.

324 [S,D] Psychology of Women 3 Same as Psych 324.

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 [I] 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.

340 [I] Third World Women and Film 3 Focus on the intersections of race, gender, class, sexuality, and nation in “third world” women's films.

350 [S] European Women's History, 1400-1800 3 Same as Hist 350.

351 [S,D] The Family 3 Same as Soc 351.


369 Queer Identities in Contemporary Cultures 3 Prereq CAC 101 or W St 200. Provides a structural critique of heteronormativity and examines L/G/B/T challenges to dominant sex and gender issues in the U.S.

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 feminisms 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.
Quick Reference—New and Revised Courses

Listed below are the new and revised undergraduate courses that have been approved since the publication of last year’s 2001-2002 catalog. Complete course descriptions may be found in the course listings under each respective prefix.

NOTES:
1. Courses that have changed number or prefix since the last catalog year are indicated by showing the previous number or prefix in parenthesis at the beginning of the title.
2. Courses that fulfill General Education Requirements are noted with GER indicators, which appear in brackets at the beginning of the title. (See the General Education Program section in this catalog for complete information on GER indicators).
3. Courses that are offered under more than one prefix are approved as “crosslisted” courses.
4. Courses that are to be taught with both an undergraduate component (400-level course) and a graduate component (500-level course) are approved as “conjoint” courses.
5. Courses that are offered to both WSU students and students at the University of Idaho are approved as “cooperative” courses.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Number</th>
<th>Course Title</th>
<th>Request</th>
<th>Approved Change</th>
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A

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Appendix—Academic Regulations

UNDERGRADUATE ADMISSION REQUIREMENTS

1. GENERAL REQUIREMENTS
   (a) To be eligible for admission to Washington State University, an applicant must be a high school graduate or its equivalent, or have completed a more advanced credential from an accredited college or university (e.g., an Associate of Arts or Associate of Science degree).
   (b) The total number of new students admitted for any one semester will be limited to 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:

- **English**: Four years (including at least one year each of composition and literature).
- **Mathematics**: Three years (one year of geometry and two years of algebra including an introductory component of trigonometry).
- **Science**: Two years (including at least one year of laboratory).
- **Social Science**: Three years (including at least one year of history).
- **Foreign Language**: Two years of 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.

Applicants from unaccredited high schools may be required to pass validating examinations.

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.

3. 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.

(f) Completion of lower-division General Education Requirements will be granted to students who have been awarded at least a 2.00 grade point average transfer requirement.

(i) Completion of lower-division General Education Requirements will be granted to students who have completed at least 70 quarter credit hours toward completion of an approved A.A. degree or a Transfer Associate (A.A.) degree from a Washington community college. The Associate of Arts—Oregon transfer degree from an Oregon community college guarantees completion of the lower-division General Education Requirements, but does not guarantee junior standing or 60 semester credits.

(g) Additional general education, cultural diversity, and foreign language requirements, as required by Washington State University, must be met prior to the completion of a baccalaureate degree. Students are responsible for checking specific major requirements in the year prior to transferring.

(h) Completion of lower-division General Education Requirements will be granted to students who have completed all of the lower-division General Education Requirements at another regionally accredited Washington baccalaureate institution, provided the sending institution so certifies.

9. GRADE POINTS REQUIRED. Students entering with advanced standing must earn twice as many grade points for graduation as the number of hours which they have enrolled in this or any other institution.

14. CREDIT FROM NON-ACCREDITED INSTITUTIONS. Special examinations for advanced standing credit for work done in non-accredited institutions will be allowed only by permission of the Admissions Subcommittee.

15. CREDIT BY EXAMINATIONS. Subject to standards established in consultation with academic departments concerned, credit may be granted to entering or enrolled undergraduate students via various means including external examinations, institutional examinations, and approved military service schools. Credits by examination shall yield no grade points. Such credits may partially fulfill General Education Requirements for graduation. External examinations will include but not be limited to:
   - Advanced Placement (AP) Program examinations of the College Entrance Examinations Board; general and subject College Level Examination Program (CLEP); and the Washington Pre-College Test Program (WPCT).
(a) Advanced Placement Program. Credit for AP examinations will be granted in an amount equal to the 100-200-level course or courses in the particular discipline tested, as approved by the specific academic department. The acceptable score for receiving credit is published in the catalog for the year in which the AP examination is taken.

<table>
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<tr>
<th>AP Examination</th>
<th>Score</th>
<th>WSU Course (credits)</th>
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</thead>
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<tr>
<td>Art: Studio (Drawing)</td>
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<td>Fine Arts 110 (3)</td>
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<td>Art: Studio (General)</td>
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<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 specifics.

(c) Challenge Examinations. Matriculated students currently registered at Washington State University, with permission of their adviser or department chairperson and of the chairperson of the department offering the course, may take challenge examinations for university credit in courses in which they are not registered. Students may not take challenge examinations in courses in which they have audited, or in which they have received a final grade. Upper-division students may not receive credit by challenge examination in lower-division courses in their major field. Undergraduate students may not receive credit by challenge examination in any course prerequisite to a course in which they are enrolled or have received a final grade. The maximum credit for challenge examinations is 30 semester hours unless permission is obtained from the student's academic dean. The fee for all challenge petitions is $195 per course.

(d) Military Credit. Credit will be granted for satisfactory completion of:

(1) Military service schools in the amount recommended by the American Council of Education in the publication, Guide to the Evaluation of Educational Experiences in the Armed Forces.

(2) United States Armed Forces Institute correspondence courses (under the rules applicable to other correspondence work).

(3) Danes Credit: Elective credit for DANES Subject Standardized Tests (DSSTs) will be granted for college-level academic subjects (non-vocational/technical courses) using the minimum score and credit amount recommendations of the American Council 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 visitations requires official approval on the request for Permit to Audit card. Students may seek permission, after the start of classes, to audit a lecture course by securing the approval of the class instructor. Those wishing to audit or change from credit to audit must pay the appropriate fee and submit the signed audit card to the Office of the Registrar before the end of the fourth week of instruction in the semester. An enrollment change from audit to credit is limited to the first two weeks of instruction. A maximum of two audits are allowed for any semester or term. A registration fee per audit hour is charged for any semester or term for other than regularly enrolled full-fee-paying students. Senior citizens are exempt from this fee under the provisions of RCW 28B.15.540, provided the prescribed eligibility requirements are met. Personnel who have received authorization for the faculty/staff fee waiver are exempt from the audit fee up to 6 hours (including audits) in any one semester or 4 hours (including audits) in the summer session. Said limitation includes any combination of credit and audit hours. Audit fee is non-refundable.

21. NO CREDIT FOR AUDITING. No university credit will be allowed for auditing courses, nor may students apply for or take special examinations for university credit in courses which they have audited. Students may not take challenge examinations (see Rule 15c) in courses they have audited. (Audit enrollments will be recorded on the student's permanent record by listing the departmental prefix, course number and the statement, "OFFICIAL AUDIT NO CREDIT").

23. MAKE-UP HOURS FOR UNIVERSITY HOLIDAYS. The presence of our one-day holidays in the academic calendar leads to fewer days of instruction for certain classes. Instructors have authority to require students to make-up lecture and laboratory contact hours, including scheduling such hours on evenings and Saturdays; whenever university holidays create unequal opportunities and time demands for students enrolled in the course. The make-up hours for a given course or section must be identified in the WSU Schedule of Classes and also in the course syllabus.

CLASS STANDING OF STUDENTS

25. CLASS STANDING. Freshman Standing—below 30 semester hours; Sophomore Standing—30 to 59 1/2 hours; Junior Standing—60 to 89 1/2 hours; Senior Standing—90 and above hours.

CREDIT

27. CREDIT DEFINITION. Academic credit is a measure of the total 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.

28. HIGH SCHOOL STUDENTS. High school students may enroll at Washington State University provided they are admitted to the university and pay the appropriate fees. Such enrollments may be for high school or university credit or both. For fall and spring semesters, all eligible high school students enroll through Running Start. For Summer Session, special fees may apply.

29. WORK FROM HIGH SCHOOLS, BUSINESS COLLEGES, AND COLLEGES AND UNIVERSITIES WITHOUT REGIONAL ACCREDITATION. No university credit shall be given for work from high schools, business colleges, or colleges and universities without regional accreditation.

31. CREDIT TO HIGH SCHOOL STUDENTS FOR COURSES COMPLETED PRIOR TO HIGH SCHOOL GRADUATION. Washington State University encourages students to complete rigorous college preparatory courses in high school, or to take college courses while in high school if they have adequate preparation. In some cases college credit may be awarded when consistent with the following conditions:

(a) High School Courses: Some high schools may offer instruction at the college level, and when consistent with university and academic department policies, college credit will be awarded if student achievement is validated by an approved national examination such as Advanced Placement or International Baccalaureate, or a review or examination administered by the university.

(b) Running Start Program:
   (1) Credit will be awarded for college courses taken prior to high school graduation when such courses are completed through the state of Washington's Running Start Program.
   (2) Courses offered by Washington State University to high school students participating in Running Start will have an enrollment of at least seventy percent of regularly admitted students in each course section.

(c) Other Courses: College credit may be awarded for courses taken in high school when consistent with the following conditions:
   (1) The course must also be currently available on the campus of the regionally accredited college or university and must be listed in the college or university catalog. The course, regardless of setting, must use the college or university curriculum.
   (2) Students interested in credit must register and pay fees at the beginning of the term and be subject to the same grading and tuition refund policies as students on the campus of the regionally accredited college or university.
   (3) The faculty teaching the course in high school must carry a regular or adjunct faculty appointment at the regionally accredited college or university.
   (4) The students taking the course in the high school must be assessed and graded in the same manner as students taking the course on the campus of the regionally accredited college or university. Student work, whether completed for the course offered on-campus or at the high school, must be graded and evaluated by the same standards.

34. REPEAT COURSES. Students may ONLY repeat a course in which they have received a grade of C- or below, a withdrawal (W), or when a course may be repeated for additional credit. Students may not take the same course twice in any given term (fall, spring, or summer).

a. Repeating courses graded C- or below. To improve the cumulative or resident grade point average, a student may only repeat courses in which a C- or below was received. When such a course is repeated, only the last grade contributes to the grade point average and total hours earned. However, the series of repeats and grades is retained on the student's academic record.

1. Only courses identified as acceptable equivalents according to the appropriate department, the Transfer Guide, or the Admissions Office are treated as repeats. If courses deemed equivalent in content differ in credit hours, the credit hours of the repeat course supersede the credit hours of the original course.

2. Once a student has graduated from WSU, repeated courses cannot change the pre-degree transcript.

(b) Repeating for additional credit.

(1) Some courses have been approved for repeat credit, i.e., the student may re-enroll in the course during a subsequent semester and credit may be accumulated. Such courses are designated in the WSU catalog as "May be repeated for credit" and will list the maximum credit limitation.

(2) Courses which have been approved for repeat credit, such as topics, may offer multiple sections of a course during any one semester. Students may 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 decertified 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 re-instated.

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 reinstatement and petitions for credit restoration will be considered by the Academic Advising and Reinstatement Subcommittee for former WSU students. Requests for admission for transfer students may be considered by the Admissions Subcommittee or their designee in the Office of Admissions.

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 President 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.

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 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 majors permission to take, on a pass, fail basis, courses in their major field or courses needed to meet departmental requirements. Departments have the prerogative of requesting, from the Office of the Registrar, the letter grade for courses a prospective major has taken on a pass, fail basis. Departments and programs may refuse to accept courses needed to meet the above requirements if the courses were completed on a pass, fail basis before the student was accepted into the department or program.

52. PREREQUISITE COURSES. All prerequisites shall be satisfactorily completed before the student may register in a course. The instructor may waive the prerequisite in the case of a student who has demonstrated competence or who has had academic experience equivalent to that represented by the prerequisite.

53. CERTIFICATION OF A MAJOR. An undergraduate 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 12 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-available basis, when the cumulative and major grade point averages are at or above the minimum level required for retention in the university (2.00) except in those departments which have limitations on certification.

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 Schedule of Classes (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. ADDING A COURSE. Students may add course enrollments only through the 5th day of the semester. (NOTE: If the course is being added pass, fail the approval of the student’s faculty adviser is also required.) A student wishing to petition for an exception to the five-day deadline listed above must obtain the approval of the instructor.

67. DROPPING A COURSE. A student may drop a course without record up to the end of the 30th day of the semester in which the course is offered or according to a prorated schedule for shorter academic terms.

68. WITHDRAWAL FROM A COURSE BETWEEN THE 5TH WEEK AND THE END OF THE 9TH WEEK. A student may, with the payment of a service fee withdraw from a course between the 5th week and the end of the 9th week with a grade of W. For undergraduates who enter WSU in fall 1998 or later, the maximum number of WSU withdrawals is 6, not counting withdrawals that result from the cancellation of enrollment. 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.

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. Only two of these withdrawals can come after the 9th week of the semester. 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. CANCELLATION OF ENROLLMENT. Students who wish to withdraw from the institution and disenroll from all of their classes initiate the cancellation through the Office of Student Affairs at WSU Pullman or the Student Services Office at WSU Spokane, WSU Tri-Cities or WSU Vancouver, or through the Distance Degree Programs Office. Students seeking to cancel their enrollment after completing one or more courses may petition for an exception to the academic calendar deadlines in the event of extraordinary circumstances (see Academic Regulation 57).

(a) Students canceling their enrollment during the first four weeks of the semester will have their permanent records marked “withdraw date.” (Individual course enrollments will not be recorded.)

(b) Students canceling their enrollment after the fourth week through the last day of instruction (end of the 15th week) will have their permanent records marked “withdrawal date,” and a grade of W will be recorded for each course enrollment.

(c) Students on academic probation during the semester of their cancellation must obtain permission of the Student Advising and Learning Center to re-enroll.

ATTENDANCE

71. ADMISSION TO CLASSES. Instructors shall not permit a student to be enrolled in a class or admit a student more than three times as a visitor without an official enrollment notice.

72. CLASS ATTENDANCE DURING THE FIRST WEEK TO ENSURE ENROLLMENT. Students who have not attended class and laboratory meetings during the first week of the semester will be dropped from the course by the department. (Students should not assume that they have been dropped without verification from the department or Registrar's Office.) Students having extenuating circumstances which prevent their attendance during the first week should notify the Office of Student Affairs. Student Affairs will notify instructors of the absence and the reason for it. Valid reasons for missing classes do not relieve the student of making up the work missed.

73. ABSENCES. Absences impede a student's academic progress and should be avoided.

(a) UNIVERSITY SPONSORED. Any student who is required to participate in off-campus, university-sponsored activities such as field trips, musical performances, judging teams, intercollegiate athletic events, etc., should obtain an official Class Absence Request form from the faculty or staff member supervising the off-campus activity. The form must contain specific information concerning the activity and date, be signed by the supervising faculty or staff member, and be submitted by the student at least one week in advance to the individual instructors of the student's classes. It is requested that a student not be penalized for absence from class provided a properly signed Class Absence Request form has been filed with the instructor prior to the absence. These university-sponsored absences are subject to an instructor's attendance policy and are not intended to imply additional acceptable absences. In all instances, it is the student's responsibility to make up all work missed. Problems 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 schedule of classes by the Registrar based on previous enrollment for that semester. After publication, the schedule cannot be altered except as provided.

76. SCHEDULING ALL COMMON MORNING/EVENING EXAMS. Undergraduate (100-400-level) courses having an enrollment of at least two percent of the total student body or courses with multiple lecture sections may schedule no more than three examinations each semester at the periods of 7:00 to 8:00 a.m., 6:00 to 7:15 p.m., and 8:30 to 9:45 p.m., Monday through Friday, with the exception of Monday morning and Friday evening. The actual test-taking may not exceed the regularly scheduled lecture time (30 or 75 minutes)—however, instructors may require that students arrive up to 15 minutes early to check in. Permission is to be obtained for a large group exam, all sections of the course must give the exam on the same day and within the same time block unless given during the regular scheduled class time. One class lecture period shall be omitted to compensate for each hour of examination. A class lecture period lost to Labor Day, Veterans Day, Martin Luther King, Jr. Day, and/or Presidents Day holiday(s) may be counted toward this compensation for an evening exam. Proposed examination dates must be submitted to the Registrar's Office no later than the first week of each semester.

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 integri-
ty of the testing process, and fairness to all the students. If the instructor believes the request not to be in good faith, or if the instructor and the student are unable to agree on arrangements, the student or the instructor should seek the assistance of the department chair, cognizant dean, or the Vice Provost for Academic Affairs, in that order. The student may also contact the University Ombudsman. Students should understand that fairness in the examination process is an important consideration in the educational process and that they have a duty to cooperate in making alternate arrangements.

83. ACCOMMODATION OF DISABILITIES IN THE ADMINISTRATION OF EXAMINATIONS. Washington State University is committed to providing access to education for all of its students. In addition, federal law states that academic requirements must be modified on a case-by-case basis to afford qualified students with handicaps an equal educational opportunity. The nature of certain disabilities may necessitate accommodation of these disabilities in the administration of exams. It is the policy of the university to provide reasonable accommodation consistent with the fair and secure administration of its programs.

A student with a disability who may require special accommodation should contact the Student Disability Resource Center (DRC) when he or she arrives on the WSU Pullman campus. On the branch campuses a student should contact the Office of Student Services. A file documenting the disability will be established, and an accommodation form initiated. The instructor may ask for verification of a disability when a student requests an accommodation for an examination. The Office of Student Services or DRC provides the disabled student with a disability with an accommodation form verifying a disability and specifying the appropriate testing accommodation designed to fit the individual needs of that student. If the instructor disagrees with the arrangements as presented in the form, the instructor and/or student should seek the assistance of the DRC, department chair, cognizant dean or Vice Provost for Academic Affairs, in that order. The student and instructor may also contact the University Ombudsman or Center for Human Rights.

88. PENALTY FOR ACADEMIC DISHONESTY. Cases of academic dishonesty shall be processed in accordance with the Academic Integrity Policy, as printed in the Student Handbook and the Faculty Manual and as available from the Office of Student Affairs.

89. FINAL GRADE SUBMITTAL. Final grades will be submitted to the Registrar's Office by 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. Department may be requested to submit final grades for summer courses earlier than the official submission deadline to facilitate grade reporting to students.)

GRADES AND GRADE POINTS

90. GRADES AND GRADE POINTS. Washington State University uses letter grades and the four (4) point maximum grading scale. The grade A is the highest possible grade, and grades below D are considered failing. Plus (+) or minus (-) symbols are used to indicate grades that fall above or below the letter grades, but grades of A+ and D- are not used. For purposes of calculating grade points and averages, the plus (+) is equal to .3 and minus (-) equals -.7 (e.g., a grade B+ is equivalent to 3.3 and A is 4.0). 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 Schedules of Classes.) 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 midterm indicating satisfactory progress.

90g. P. (Passing.) A satisfactory grade for a course taken under the pass, fail Grading Option. Instructors will turn in regular letter grades for all students enrolled in courses under the pass, fail option but grades will appear on the student's permanent record as P (Passing) or F (Failure).

90h. I. (Incomplete.) The term is used to indicate that a grade has been deferred. It is for students who for reasons beyond their control are unable to complete their work on time. It is strongly recommended that students who are granted an Incomplete limit their total number of credits to 18 credits (including credits for the Incomplete course and any new courses) during the semester when they are finishing an Incomplete. Undergraduates or graduates who receive an I grade in an undergraduate course (100-499) have up to the end of the ensuing year to complete the course, unless a shorter interval is specified by the instructor. If the incomplete is not made up during the specified time or the student repeats the course, the I is changed to an F. (See Rule 34.) Faculty are required to submit an Incomplete Grade Report (IGR) to the departmental office with every I given. The IGR must specify conditions and requirements for completing the Incomplete, as well as any time limitations less than one year.

90i. W. This is the term to be used if the student has filed, in the Registrar's Office, official notice of a withdrawal from the course prior to the end of the 9th week, or withdrew passing in accordance with Rule 69, or withdrew from the university in accordance with Rule 70.

90j. X. Denotes continuing progress toward completion of special problems, research, thesis, doctoral dissertation (i.e., 499, 600, 700, 702, 800), or flexible enrollment courses; X grades are converted to S or to a letter grade upon satisfactory completion. An X grade may also be used when no final grade is reported due to instructor's illness or absence from town.

92. GRADE RECORDS. Class grade records (the records from which final grades for a given class are determined) are university records which must be maintained for five years after the end of the term. Department chairs or directors are responsible for identifying appropriate storage location, which may include the instructor's campus office. Both the chair or director or their designees and the instructor shall have ready access to these records.

93. RETENTION OF FINAL EXAMINATIONS, FINAL PROJECTS, AND FINAL PAPERS. Final examinations, final projects, and final papers are university records which must be maintained for one year after the end of the term, unless they are returned directly to the student. Department chairs or directors are responsible for identifying appropriate storage location, which may include the instructor's campus office. Both the chair or the director or their designees and the instructor shall have ready access to these final examinations, final projects, and final papers.

98. CORRECTION OF GRADE ERRORS. An instructor may not change a grade after it has been filed with the Registrar, except in the case of clerical error, which the instructor may correct by so certifying to the Registrar. Such change must be approved (signature required) by the chairperson of the department in which the course was offered. Grade corrections must be processed within one year of the end of the term for which the original grade was given. In extenuating circumstances, exceptions to the one-year limit for correction of grade errors may be considered by petition to the Registrar's Office.

99. GRADUATE STUDENT GRADES. On a program leading to an advanced degree, graduate students must attain a minimum grade point average of 3.00 on their graduate programs and a minimum grade point average of 3.00 in all 400-499 level and graduate courses. No grade below C is accepted in any course for graduate credit.

100. THE GRADE POINT SYSTEM
A provides 4.0 grade points per credit hour.
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. Complainants must be present in writing to the dean within 20 business days of the chair's decision. The written statement should describe the complaint, indicate how it affects the individual or unit, and include the remedy sought from the dean. The decision of the dean is the final step and shall be made within 20 business days. The University Ombudsman is available at any stage for advice or assistance in resolving academic complaints. At the branch campuses, the procedure is identical except that the academic area coordinator shall substitute for the department chair and the campus dean shall substitute for the college dean.

105. FINAL GRADE APPEALS PROCESS. If a chair, dean, Graduate School Dean, or ombudsman finds that a change of a final grade is warranted on the basis of academic wrongdoing, they may refer the case to the University Grade Appeals Board for review within one semester of the posting of the grade (excluding summer term). Students may not take a grade appeal directly to the Board. In the case of graduate students, the Dean of the Graduate School may refer a case to the Board upon completion of the Graduate School appeal process, as published in the Graduate School Bulletin. The University Grade Appeals Board shall have jurisdiction over decisions of any faculty member and/or administrator on matters of University course grading appeals. The decision of the board is final and not subject to further appeal.

GRADUATION

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 adviser may waive or alter them. The student has the ultimate responsibility for meeting university, college and departmental graduation requirements.

109. PETITIONS FOR UNDERGRADUATE GRADUATION REQUIREMENTS. Students may petition for a change in graduation requirements or by obtaining the signatures of their department chairperson or director and dean on the appropriate form available in the undergraduate degree office of the Registrar's Office.

114. REQUIREMENTS FOR UNDERGRADUATE DEGREES

(a) The four-year degree (BA, BS, B FA, B Lib A, B Mus):

1. Meet the General Education Requirements for Graduation.
2. Earn twice as many grade points as the number of hours enrolled in graded course work, in this or any institution for which a grade has been received.
3. Earn twice as many grade points in the major subject as the number of hours enrolled graded course work in that major subject at Washington State University.
4. Complete any of the four-year programs.
5. Complete the senior year under the direction of the college in which the degree is to be granted. If any portion of the final year's work is to be completed at another institution, advance approval must be obtained, in writing from both the department chairperson and the dean of the college.
6. Earn a minimum of 120 semester hours of credit, no more than 8 of which may be PACT (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.
8. The award of a degree is conditioned upon the student's good standing in the university and satisfaction of all University graduation requirements.
9. “Good standing” means the student has resolved any unpaid fees or acts of academic or behavioral misconduct, and complied with all sanctions imposed as a result of the misconduct. The University shall deny the award of a degree if the student is dismissed from the University based on his or her misconduct. (See Rule 45 and the Standards of Conduct for Students.)

(b) The five-year degree (B Arch, BS Cst 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 PACT (Physical Education Activity) courses. (See Rule 6.)

115. REQUIREMENTS FOR THE DOCTOR OF VETERINARY MEDICINE DEGREE (DVM)

(a) Complete the four-year professional program.
(b) Earn a baccalaureate degree from an accredited institution.
(c) Earn twice as many grade points as the number of graded hours required in the professional program.

116. REQUIREMENTS FOR MASTER'S DEGREES

(a) Spend not less than two semesters in residence (except for external programs approved by the Graduate Studies Committee).
(b) Earn not less than 30 semester hours of credit with a minimum of 21 semester hours of course work for a thesis degree program or 26 semester hours of course work for a non thesis degree program.
(c) Earn a minimum grade point average of 3.00 on a graduate program in all upper division and graduate course work completed for the master's degree.
(d) Earn a minimum grade point average of 3.00 for all course work taken as a graduate student.
(e) Successfully complete graduate examinations.

117. REQUIREMENTS FOR DOCTOR'S DEGREES

(a) Spend not less than six semesters beyond the baccalaureate degree at least four of which must be at Washington State University.
(b) Spend not less than a minimum of two consecutive semesters in residence at Washington State University.
(c) Earn not less than 72 semester credit hours beyond the baccalaureate degree to include a minimum of 34 semester hours (45 semester hours for the Doctor of Arts degree and 42 semester hours for the Doctor of Education degree) of 400-
and 500-level course work listed in the *Graduate Study Bulletin*.

(d) Earn a minimum grade point average of 3.00 on a graduate program and in all 300-400-level and graduate course work completed for the doctor's degree.

(e) Earn a minimum grade point average of 3.00 for all course work taken as a graduate student.

(f) Successfully complete graduate examinations.

118. TWO OR MORE BACHELOR'S DEGREES FROM WSU. One four-year undergraduate degree requires a minimum of 120 semester hours. For each additional bachelor's degree, the student must complete an additional 30 semester hours and satisfy all requirements of the second degree program.

121. SUMMER SESSION CREDITS. Credit earned during summer sessions may be applied toward the fulfillment of requirements for baccalaureate and advanced degrees in the same manner and subject to the same rules as credit earned during semesters of regular academic years.

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 in a single semester at Washington State University.

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

137. RECOGNITION FOR SELECTED BACCALAUREATE DEGREE CANDIDATES. Candidates for baccalaureate degrees who have completed at least 30 hours of graded work (grades in which grade points are awarded) at Washington State University will graduate *summa cum laude* if the cumulative grade point average for work completed at Washington State University is 3.90 or better, will graduate *magna cum laude* if the minimum cumulative grade point average is 3.70 but less than 3.90, and will graduate *cum laude* if the minimum cumulative grade point average is 3.50 but less than 3.70.

The appropriate Latin phrase will be printed on the diploma and on the final transcript. Qualified students electing to participate in the Honors College who complete its requirements satisfactorily, regardless of whether they qualify to graduate *summa cum laude*, *magna cum laude*, or *cum laude*, will receive a certificate of completion and a printed notation on the final transcript.

Computation of graduation honors will be done prior to the end of the final semester to allow for publication of the appropriate honors in advance of graduation. However, following the student's final semester, the Registrar will recompute the student's 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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