1999-2000
How to Use this Catalog

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

General Information iv-38

General Education Requirements and Courses 39-45

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

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

Departments, Degree Programs, and Courses 47-249

The information in this section includes the following:

- Listings of faculty, descriptions of academic fields, and departmental requirements, in alphabetical order by department name.
- A complete listing of courses needed to graduate. The degree program requirements are shown in a semester-by-semester sequence to help you plan your schedule. You will find the degree programs organized by department. For instance, the Marketing degree program is found under the Departments of Business. Do note that departmental requirements are set at the time you certify in your major (see page 34 for details).
- A description of the courses offered by each department. Undergraduate courses are numbered from 100 through 499. 100- and 200-level courses are suggested for first- and second-year students, 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 Degree Program Requirements

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

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

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

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

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

(2) Footnotes are frequently used to 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.

Course Title

Bio S 104 [B] Introductory Biology 4 (3-3) Prereq Bio S 103 (Bio S 101 or 102 with a grade of A or B may be substituted); two semesters Chem or c//. Continuation of Bio S 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.
General Education and Writing Proficiency Requirements

Past changes are summarized in the chart on the following page. For more detailed information about the General Education Program, see pages 39-45.

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 38.

A. The Structure of the General Education Program

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

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

Tier II: 22 semester credit hours
- Communication Proficiency [W], [C] 3
- Arts and Humanities# [H], [G] 3
- Social Sciences# [S], [K] 3
- Arts and Humanities/Social Sciences# [H], [G], [S], [K] 3
- Intercultural [I], [G], [K] 3
- Sciences* [B], [P] 7

Tier III: 3 semester credit hours
- Capstone Course

* 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 equivalent), 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. 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

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

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.

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

For more information, see pages 39 and 40.
# Graduation Requirement Phase-In Timeline

## World Civilizations [A] 6 hours
- [B] [P] [Q] 2 hours including one lab additional
- [H] [G] [S] [K] [I] 6 hours additional

## Foreign Language - one year (two semesters or three quarters) at the university level or two years of one language at the high school level
- Writing in the Major [M] two courses

## College of Liberal Arts
- College of Sciences

### Fall 1995 and After
- World Civilizations [A] 6 hours
- Communication Proficiency [C] [W] 6 hours
  - At least 3 hours must be [W]
  - Writing Placement Exam required if no transfer or AP credit for Engl 101 or equivalent
- Intercultural Studies [I] [G] [K] 3 hours
- Arts and Humanities [H] [G] 3 hours
- Social Sciences [S] [K] 3 hours
- Additional Arts and Humanities or Social Sciences [H] [G] [S] [K] [I] 3 hours
- Mathematics Proficiency [N]
- Sciences [B] [P] [Q] 10 hours, including one lab
  - At least 3 hours [B] and 3 hours [P]
- Capstone Course
- University Writing Portfolio
- Writing in the Major [M] two courses

### Fall 1993 Through Spring 1995
- World Civilizations [A] 6 hours
- Communication Proficiency [C] [W] 6 hours
  - At least 3 hours must be [W]
  - Writing Placement Exam required if no transfer or AP credit for Engl 101 or equivalent
- Intercultural Studies [I] [G] [K] 3 hours
- Arts and Humanities [H] [G] 3 hours
- Social Sciences [S] [K] [U] 3 hours
- Additional Arts and Humanities or Social Sciences [H] [G] [S] [K] [I] 3 hours
- Mathematics Proficiency [N]
- Sciences [B] [P] [U] 10 hours, including one lab
  - At least 3 hours [B] and 3 hours [P]
- Capstone Course not required
- University Writing Portfolio
- Writing in the Major [M] two courses

## College of Liberal Arts
- College of Sciences

### Entered WSU as Freshman Fall 1991 Through Spring 1993
- World Civilizations [A] 3 hours
- Communication Proficiency [C] [W] 6 hours
  - At least 3 hours must be [W]
  - Writing Placement Exam required if no transfer or AP credit for Engl 101 or equivalent
- Intercultural Studies [I] [G] [K] 3 hours
- Arts and Humanities [H] [G] 6 hours
- Social Sciences [S] [K] 6 hours
- Mathematics Proficiency [N] [O]
- Sciences [B] [P] [U] [Z] [O] 10 hours, including one lab
- University Writing Portfolio
- Writing in the Major [M] two courses

### College of Liberal Arts
- College of Sciences

### Fall 1991 Through Spring 1993
- World Civilizations [A] 6 hours
- Communication Proficiency [C] [W] 6 hours
  - At least 3 hours must be [W]
  - Writing Placement Exam required if no transfer or AP credit for Engl 101 or equivalent
- Intercultural Studies [I] [G] [K] 3 hours
- Arts and Humanities [H] [G] 6 hours
- Social Sciences [S] [K] [U] 6 hours
- Mathematics Proficiency [N] [O]
- Sciences [B] [P] [U] [Z] [O] 10 hours, including one lab
- University Writing Portfolio
- Writing in the Major [M] two courses

### College of Liberal Arts
- College of Sciences

### Entered WSU as Transfer Student and Begun Post-Secondary Education Before Fall 1991 or Entered WSU as Freshman Before Fall 1991
- World Civilizations [A] not required
- Communication Proficiency [C] [W] 6 hours
  - At least 3 hours must be [W]
  - Writing Placement Exam required if no transfer or AP credit for Engl 101 or equivalent
- Intercultural Studies [I] [G] [K] 3 hours
- Arts and Humanities [H] [G] 6 hours
- Social Sciences [S] [K] [U] 6 hours
- Mathematics Proficiency [N] [O] not required
- Sciences [B] [P] [U] [Z] [O] 10 hours, including one lab
- University Writing Portfolio Required for transfer students Fall 1991 and after
- Writing in the Major [M] two courses. Required for transfer students Fall 1991 and after

## Minimum University Graduation Requirements
- 120 total hours
- 40 upper-division hours
- 2.0 overall g.p.a.

Summer enrollment by itself does not constitute college admission.

Running Start students are held to university graduation requirements based on high school graduation date.

Acceptable Associate of Arts (AA) or Associate of Science (AS) degree from a Washington community college or Associate of Arts-Oregon Transfer degree from an Oregon community college fulfills all lower-division university graduation requirements. University Writing Portfolio, Writing in the Major courses, and the Tier III capstone course are not fulfilled by the associate degree. Majors in the College of Liberal Arts and the College of Sciences must also complete the additional college requirements.

Students who entered WSU as freshmen spring 1991 or before are held to the 1985 General University Requirements (GURs).

University Honors College students do not complete GERs.

Prepared by Student Advising and Learning Center and Registrar’s Office
Board of Regents

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Governor of the State of Washington
Advisory Member Ex Officio

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Issaquah

Peter J. Goldmark, Vice President
Okanogan

Richard R. Albrecht
Seattle

Kenneth Alhadeff
Seattle

Phyllis J. Campbell
Issaquah

Richard A. Davis
Spokane

Robert D. Fukai
Spokane

Joe King
Ellensburg

William D. Marler
Bainbridge Island

Janelle Milodragovich (student)
Pullman

Samuel H. Smith, Secretary
Samuel L. Kindred, Treasurer

Officers of the University

EXECUTIVE OFFICERS

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President

Gretchen M. Bataille
Provost

Samuel L. Kindred
Vice President for Business Affairs

Constance H. Kravas
Vice President for University Advancement

Thomas L. Purce
Vice President for Extended University Affairs

Sally P. Savage
Vice President for Administration

Gregory P. Royer
Executive Director of Budget and Planning

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Karl A. Boehmke
Budget Director

Ernest J. Renfro
Assistant Vice President for Business Affairs and Controller

ACADEMIC DEANS

Nancy L. Baker
Director of Libraries

Anjan Bose
Interim Dean, College of Engineering and Architecture

G. Dennis Clifton
Interim Dean, College of Pharmacy

Barbara Couture
Dean, College of Liberal Arts

Harold A. Dengerink
Campus Executive Officer and Dean, WSU Vancouver

Dorothy M. Detlor
Dean, Intercollegiate Center for Nursing Education

William H. Gray
Campus Executive Officer and Dean, WSU Spokane

Larry G. James
Interim Campus Executive Officer and Dean, WSU Tri-Cities

Glenn L. Johnson
Interim Dean, College of Business and Economics

Terry F. McElwain
Interim Dean, College of Veterinary Medicine

Judy N. Mitchell
Dean, College of Education

Leon J. Radziemski
Dean, College of Sciences

James J. Zuiches
Dean, College of Agriculture and Home Economics

LEGAL COUNSEL

Antoinette Ursich
Senior Assistant Attorney General
## Academic Calendar

### First Semester

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<tbody>
<tr>
<td>Classes begin, Monday</td>
<td>Aug 23</td>
<td>Aug 28</td>
<td>Aug 27</td>
<td>Aug 26</td>
</tr>
<tr>
<td>Labor Day holiday</td>
<td>Sept 6</td>
<td>Sept 4</td>
<td>Sept 3</td>
<td>Sept 2</td>
</tr>
<tr>
<td>Midsemester grades due, 8:00 a.m.</td>
<td>Oct 13</td>
<td>Oct 18</td>
<td>Oct 17</td>
<td>Oct 16</td>
</tr>
<tr>
<td>Veterans Day holiday</td>
<td>Nov 11</td>
<td>Nov 10</td>
<td>Nov 12</td>
<td>Nov 11</td>
</tr>
<tr>
<td>Thanksgiving Vacation</td>
<td>Nov 22-26</td>
<td>Nov 20-24</td>
<td>Nov 19-23</td>
<td>Nov 25-29</td>
</tr>
<tr>
<td>Final Examinations, Monday through Friday</td>
<td>Dec 13-17</td>
<td>Dec 18-22</td>
<td>Dec 17-21</td>
<td>Dec 16-20</td>
</tr>
<tr>
<td>Final grades due, 4:00 p.m.</td>
<td>Dec 21</td>
<td>Dec 28</td>
<td>Dec 27</td>
<td>Dec 26</td>
</tr>
</tbody>
</table>

### Second Semester

<table>
<thead>
<tr>
<th>Event</th>
<th>Jan 10</th>
<th>Jan 16</th>
<th>Jan 14</th>
<th>Jan 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin Luther King, Jr. Day holiday</td>
<td>Jan 17</td>
<td>Jan 15</td>
<td>Jan 21</td>
<td>Jan 20</td>
</tr>
<tr>
<td>Presidents Day holiday</td>
<td>Feb 21</td>
<td>Feb 19</td>
<td>Feb 18</td>
<td>Feb 17</td>
</tr>
<tr>
<td>Midsemester grades due, 8:00 a.m.</td>
<td>Mar 1</td>
<td>Mar 7</td>
<td>Mar 6</td>
<td>Mar 5</td>
</tr>
<tr>
<td>Spring Vacation</td>
<td>Mar 13-17</td>
<td>Mar 19-23</td>
<td>Mar 18-22</td>
<td>Mar 17-21</td>
</tr>
<tr>
<td>Final Examinations, Monday through Friday</td>
<td>May 1-5</td>
<td>May 7-11</td>
<td>May 6-10</td>
<td>May 5-9</td>
</tr>
<tr>
<td>Commencement</td>
<td>May 6</td>
<td>May 12</td>
<td>May 11</td>
<td>May 10</td>
</tr>
<tr>
<td>Final grades due, 4:00 p.m.</td>
<td>May 9</td>
<td>May 15</td>
<td>May 14</td>
<td>May 13</td>
</tr>
</tbody>
</table>

### Summer Session

<table>
<thead>
<tr>
<th>Event</th>
<th>May 8</th>
<th>May 14</th>
<th>May 13</th>
<th>May 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Session begins</td>
<td>May 29</td>
<td>May 28</td>
<td>May 27</td>
<td>May 26</td>
</tr>
<tr>
<td>Memorial Day holiday</td>
<td>June 5</td>
<td>June 11</td>
<td>June 10</td>
<td>June 9</td>
</tr>
<tr>
<td>Eight-Week Session begins</td>
<td>June 19</td>
<td>June 25</td>
<td>June 24</td>
<td>June 23</td>
</tr>
<tr>
<td>Late Six-Week Session begins</td>
<td>July 4</td>
<td>July 4</td>
<td>July 4</td>
<td>July 4</td>
</tr>
<tr>
<td>Independence Day holiday</td>
<td>July 28</td>
<td>Aug 3</td>
<td>Aug 2</td>
<td>Aug 1</td>
</tr>
<tr>
<td>Summer Session ends, Friday</td>
<td>Aug 1</td>
<td>Aug 7</td>
<td>Aug 6</td>
<td>Aug 5</td>
</tr>
</tbody>
</table>

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 Colleges of the Northwest Association of Schools and Colleges
American Assembly of Collegiate Schools of Business: The International Assembly for Management Education
American Association for Accreditation of Laboratory Animal Care
American Association of Colleges for Teacher Education
American Association of Veterinary Laboratory Diagnosticians
American Chemical Society
American Council for Construction Education
American Council on Pharmaceutical Education

American Dietetic Association
American Nurses Credentialing Center
American Psychological Association
American Society of Landscape Architects
American Speech-Language-Hearing Association
American Veterinary Medical Association
Computer Science Accreditation Commission of the Computing Sciences Accreditation Board
Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology
Foundation for Interior Design Education Research
National Association for the Education of Young Children
National Architectural Accrediting Board
National Association of Schools of Music
National Athletic Trainers Association
National Council for Accreditation of Teacher Education
National League for Nursing
National Recreation and Park Association
Society for Range Management
Society of American Foresters
University Council for Educational Administration
Washington State Board of Education
Washington State Commission for Quality Assurance in Nursing
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  - The Center for Human Rights
  - The Office of Multicultural Student Services
  - Museums and Collections
  - Music and Theatre
  - Jewett Observatory and University Planetarium
  - The Ombudsman Office
  - Speech and Hearing Clinic
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Washington State University

Washington State University, the state’s land-grant university, prepares individuals for productive lives and professional careers, conducts basic and applied research, and provides public service statewide. Founded in Pullman in 1890, WSU became a multicampus system in 1989 with the establishment of campuses in Spokane, the Tri-Cities, and Vancouver. Degree and non-degree courses are available as well through regional Learning Centers around the state and through the Extended Degree Program.

The university consists of ten colleges and a graduate school. For more than a century, WSU has offered strong and varied academic programs. The liberal arts and sciences have always occupied 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.

The university offers nearly 100 major fields of study. 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. In addition, WSU’s University Honors College is one of the oldest and most well-respected, all-university programs for academically talented students. *Money* magazine has called WSU a “public ivy” and rated the Honors College one of the best in the nation.

Washington’s only statewide university, WSU has Cooperative Extension offices in all 39 counties, eight regional learning centers, seven research and extension facilities in various locations, and 24 Small Business Development Centers statewide. The Intercollegiate College for Nursing Education (ICNE)/WSU College of Nursing has a satellite nursing center in Yakima, and students can take WHETS courses from Wenatchee (via WSU Vancouver). The university runs the Washington Higher Education Telecommunication System (WHETS), which transmits live, interactive instruction to the branch campuses and other sites. WSU offers several bachelor’s degrees via a variety of distance learning technologies to placebound students within Washington and nationwide, including those in social sciences, human development, business administration, and criminal justice.

WSU’s instructional faculty of approximately 1,100, including a substantial number of scholars with national and international reputations, is responsible for instruction that opens students’ minds to the most recent knowledge and discoveries. The opportunity for students to know and work closely with their instructors is one advantage of a medium-sized, residential campus such as WSU Pullman. Personal attention from faculty is also a hallmark of the branch campuses.

The heart of the WSU system is the Pullman campus. WSU has about 17,000 students, including those in Pullman and at the ICNE/College of Nursing. Of these, about 15,000 are undergraduates and nearly 2,000 are graduate students. Pullman is one of the largest residential campuses west of the Mississippi, including those in Pullman more than 90 foreign countries come together in a community in which education is the principal industry and human development the primary concern.

More than 3,000 students are enrolled at WSU campuses in Spokane, the Tri-Cities, and Vancouver. The branch campuses serve placebound individuals who have had limited opportunities to complete bachelor’s and master’s degrees.

WSU’s main campus is located in the Palouse country of southeast Washington, where much of the nation’s finest wheat and legumes are produced. Several small but expanding high-tech firms are diversifying Pullman’s economy. The 600-acre campus features modern classrooms and laboratories, libraries, museums, student residences, recreational and athletic facilities, student union, and a community hospital. A recent library addition has doubled WSU’s library capacity.

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

A nine-hole golf course, 16 all-weather tennis courts, and three swimming pools, including one of Olympic dimensions, are on the Pullman campus. 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. A Student Recreation Center is under construction and is expected to be open by early 2001.

For more information, visit our web site, www.wsu.edu.

Degrees Granted

Academic Degrees

- Accounting, M Acct
- Agribusiness, BS, MA
- Agricultural Economics, BS, MA, PhD
- Agricultural Molecular Genetics and Cell Biology, BS
- Agricultural Technology and Management, BS
- Agriculture, BS
- American Studies, BA, MA, PhD
- Animal Sciences, BS, MS, PhD
- Anthropology, BA, MA, PhD
- Apparel, Merchandising, and Textiles, BA, MA
- Architectural Studies, BS
- Architecture, B Arch, MS
- Asian Studies, BA
- Biochemistry, BS, MS, PhD
- Biological Systems Engineering, BS
- Biology, BS, MS
- Botany, MS, PhD
- Business Administration, BA, MBA, PhD
- Chemical Engineering, BS, MS, PhD
- Chemistry, BS, MA, MS, PhD
- Civil Engineering, BS, MS, PhD
- Communication, BA, MA
- Comparative American Cultures, BA
- Computer Engineering, BS
- Computer Science, BA, BS, MS, PhD
- Construction Management, BS
- Criminal Justice, BA, MA
- Crop Science, BS, MS, PhD
- Economics, BA, M, PhD
- Education, BA, EdM, MA, MIT, EdD, PhD
- Electrical and Computer Engineering, PhD
- Electrical Engineering, BS, MS
- English, MA, MS, PhD
- 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
- Geological Engineering, MS
- Geology, BS, MS, PhD
- Health Policy and Administration, MPH
- History, BA, MA, PhD
- Home Economics, BS
- Horticulture, BS, MS, PhD
- Hotel and Restaurant Administration, BA
- Human Development, BA, MA
- Human Nutrition, MS
- Humanities, BA
- Individual Interdisciplinary, DA, PhD
- Integrated Cropping Systems, BS
- Interior Design, BA, MA
- Kinesiology, BS, MS
- Landscape Architecture, BLA, MS
- Liberal Arts, B Lib A
- Manufacturing Engineering, BS
- Materials Science, PhD
- Materials Science and Engineering, BS, MS
- Mathematics, BS, MS, DA, PhD
- Mechanical Engineering, BS, MS, PhD
- Microbiology, BS, MS, PhD
- Music, BA, B Mus, BA
- Natural Resource Management, BA
- 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
- Political Science, BA, MA, PhD
- Psychology, BS, MS, PhD
- Public Affairs, BA, MPA
- Recreation Administration and Leisure Studies, BA, MA
- 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, MA, MAT
- Veterinary Medicine, DVM
- Veterinary Science, BS, MS, PhD
- Women’s Studies, BA
- Zoology, BS, MS, PhD
The Libraries

The University Libraries are an integral part of the WSU educational experience. Over three million books, journals, newspapers, microforms, CD-ROMs and other electronic resources, technical reports, maps, manuscripts, art prints, and photographs and other publications support WSU’s commitment to teaching, research, and public service. The Libraries are depositories for U.S. documents, municipal and state documents, those from foreign countries, as well as publications of the U.N.

The Libraries share an integrated online system called Griffin with Eastern Washington University. Griffin indexes the library holdings of both institutions and provides access to a wide assortment of electronic indexes and full-text databases. Reference librarians provide personal assistance using modern methods of information retrieval. For the most part, collections are maintained in easily accessible, open-stack arrangements. Limited study facilities are available. Special service programs include instruction in library use; accessing national computerized information systems; and accessing resources of other libraries, national and international, through inter-library cooperation.

The Holland/New Library provides extensive collections in the social sciences, business, 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 books, manuscripts, 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 Services houses the Learning Resource Center and provides videotapes, films, slides, audio tapes and other media for classroom instruction, LRC use, local checkout and national circulation. 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 collections in these disciplines, as well as automated bibliographic retrieval, user services, and a graduate student study room. 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 the plant and entomological sciences. The biomedical collections and services offered by 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 community college and adult education.

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

In addition, library resources and facilities are available on the three branch campuses: Spokane, Tri-Cities, and Vancouver.

The libraries operate without interruption, except for designated holidays, throughout the calendar year. For full and detailed information about the WSU Libraries, visit the homepage: www.wsulibs.wsu.edu.

The Summer Session

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

During summer session, courses are offered in most university departments to meet the needs of new freshmen and transfer students who wish to get an early start on their degree programs. Courses in a variety of academic areas are offered for continuing undergraduate and graduate students as well as for others qualified to pursue 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. Application and housing forms with published deadline dates are included in the Summer Session Bulletin.


WSU Foundation

Private support to Washington State University since the foundation was created in 1979 has had a tremendous impact on the quality of programs at WSU. The foundation has raised more than $350 million for WSU’s priorities of furthering great teaching, increasing access and diversity, fostering WSU’s special experience for students, and advancing research to serve Washington and the world. All gifts go in full to the area designated by the donor. The foundation administers donations in the best interests of both the donor and the university. Inquiries may be addressed to the President, WSU Foundation, Pullman, WA 99164-1042.
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, game 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 (called Little Main Street) including a U.S. Post Office, hairstyling salon, travel service, floral shop, credit union, and bank machines.

Other groups with within Compton Union include the Associated Students of Washington State University (ASWSU), Associated Women Students, 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, 3.0 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 advisors of the year at its annual induction reception. Visit our web site, webl.french.wsu.edu/golden_key/index.

Mortar Board. Mortar Board is a national honor society of college seniors recognized for their scholarship, outstanding and continual leadership, and dedicated service to the 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 minorning 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 Honorary

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

Student Government

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

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

Student Publications

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

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

The Chinook is the university yearbook issued each August to over 9,000 buyers.
Student Services and Facilities

Career Services

Career Services offers a variety of career related resources and 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. Each semester, Career Services offers a one-credit course (University 100) to help students enhance their career decision-making skills and better understand how to connect their academic experiences with the world of work. An interactive computer-assisted program (called SIGI+) is also available to help students with self-assessment and information about career options. The Career Resource Center maintains information on WSU majors, occupations, job search and graduate school preparation materials, and employer literature and directories.

A variety of workshops are regularly scheduled on topics such as Resume Preparation, Interviewing, Internship Strategies, Job Searching on the Internet, and Applying to Graduate/Professional School. Counselors also offer daily drop-in hours for review of resumes and cover letters. In addition, Career Services sponsors two major career fairs each year.

Through on-campus interviews, students can interview for internship and permanent employment with more than 300 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 JOBTRAK Corporation.

Career Services offers placement/credential file service. Primarily used by education graduates or students applying to graduate or professional schools, placement/credential files hold letters of recommendation. For more information about whether you need to establish a file, contact Career Services.

To access job and internship listings, register with us, check scheduled workshop/drop-in hours 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 in two locations. One hundred and thirty-five children (ages 18 months to 12 years) are housed in the main center on Olympia Avenue and 25 children (ages six weeks to 18 months) are located in Commons Hall 103. Licensed by the Washington Department of Social and Health Services and accredited by the National Academy for Early Childhood Programs, the centers are 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 centers are 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 Services

WSU Counseling Services offers specialized individual and group counseling and consultation services without charge to any regularly enrolled student. 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.


The Disability Resource Center

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

The center provides disability awareness training for WSU faculty, staff, and students. The center works cooperatively with university programs to encourage compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. The DRC promotes self-advocacy for students with disabilities and teaches them self-advocacy skills. For additional information contact the Disability Resource Center, room 206, Administration Annex, (509) 335-1566, lawanda@wsu.edu, or www.wsu.edu/DRC.

Educational Telecommunications and Technology


Northwest Public Television, a member of the Public Broadcasting Service, produces and broadcasts local and national programs. KTNW-TV extends coverage to the Tri-Cities and Walla Walla areas while KWSU-TV broadcasts in the Pullman region. The signal of Northwest Public Television is extended by two community-owned translators in central Washington.

WHETS is a statewide interactive distance learning video system which serves 30 classrooms in Moscow, Pullman, Richland, Seattle, Spokane, Boeing, Wenatchee, Yakima, and Longview. Instructional support activities also include WA 8, a university-oriented Pullman cable channel; KUGR-FM, a student-operated commercial radio station; and telecommunications support for academic departments.

Gay, Lesbian, Bisexual, and Allies Program and Center

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

For more information about the GLBA Program, contact the program office, Compton Union Building, Room B19A, (509) 335-6388.
Human Relations and Educational Services Program

The Human Relations and Educational Services Program (HRES) assists in managing and resolving disputes by peaceful and constructive means for employees, students, and the greater university community. The HRES offers a number of conflict resolution services including: consultation, facilitation, mediation, and organizational intervention. The HRES takes a preventative approach to resolving disputes, offering a variety of educational services that include internships, training, workshops, and classroom presentations. The office is located in French Administration Building, Room 132. The program is open year-round and may be reached at (509) 335-6648, hres@wsu.edu, or www.wsu.edu/~chr/.

The Center for Human Rights

The mission of the Center for Human Rights is to assist WSU in achieving affirmative action, equal economic and educational opportunity, and fair and equitable treatment for all of WSU's constituents. Its services are available to all administrative/professional employees, faculty, classified staff, and students. The Center for Human Rights is responsible for:

- EEO/AA: Training Search Committee Members in the proper application of EEO/AA laws and regulations, and WSU recruitment procedure.
- CHR monitors the hiring of classified staff, faculty, and exempt positions for EEO/AA compliance. CHR coordinates a team of EEO representatives from each college and administrative unit who provide assistance with search processes. They promote the establishment of fair and objective criteria for evaluating candidates and updating managers on progress toward achieving affirmative action and equal employment opportunity goals.
- Complaint Investigation: Investigating complaints of all forms of alleged illegal discrimination, including sexual harassment; prohibiting forms of discrimination including race, sex, religion, age, color, creed, national or ethnic origin, physical, mental or sensory disability, marital status, sexual orientation, and status as a Vietnam-era veteran. Assisting managers and supervisors in investigating discrimination and sexual harassment complaints.
- Compliance: Developing the university's annual affirmative action plan; preparing EEO reports and maintaining applicant flow data collected from searches; conducting audits of the university's work environment for posters, materials, and activities that are inappropriate and violate WSU's discrimination policy; and interface with State and Federal government agencies regarding compliance, audits, and reporting.
- Training and Education: Provide the WSU community with educational programs for issues regarding equal opportunity, affirmative action, sexual harassment, and complaint investigation.

For more information contact the Center for Human Rights, French Administration Building 225, Pullman, WA 99164-1022, (509) 335-8288, FAX (509) 335-1259, rights@mail.wsu.edu, or www.wsu.edu:8080/~chr/.

The Office of Multicultural Student Services

The Office of Multicultural Student Services' primary purpose is to provide services and programs that recruit, matriculate, and graduate students of color (African American, Asian American and Pacific Islander, Chicano/Latino, and Native American). Other goals are to expand cultural awareness, to celebrate our differences and similarities, and to heighten the appreciation of cultural and racial diversity within the university and the Pullman communities.

The unit is comprised of an Administrative area, Community Relations, Multicultural Recruitment Services, multicultural student centers (African American, Asian American and Pacific Islander, Chicano/Latino, and Native American), and the Talmadge Anderson Heritage House.

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 advisors, advocate for students, assist in problem solving, direct and develop programs, make referrals to other departments and services on campus, and provide information on scholarships, internships, careers, and graduate programs. Each counselor has an office in their 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 report on faculty and graduate student research projects from around the globe.

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

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

The Museum of Art

The Museum of Art was established in 1974 around a core collection of American paintings assembled by former WSU President E. O. Holland and former WSU Regent Charles Orton. Dedicated to serving the educational purposes of WSU and the people of the state of Washington, the museum presents changing exhibitions on the Pullman campus and branch campuses ranging from fine arts and 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 a special exhibition each summer.

The exhibition gallery of the Museum of Art is open and free to the public seven days a week from September to 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.

Conner Museum

The Charles R. Conner Museum, located on the first floor of Science Hall, exhibits fishes, amphibians, reptiles, a dinosaur skeleton, and several hundred mounted birds and mammals, including deer, antelope, mountain sheep, moun- tain 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, ecol- ogy 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 locali- ties in the western U.S. It is the largest display of its kind in the western U.S. Also included in the collection is a large selection of cut and polished agate, geodes and dinosaur bone.

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

The Minnie Barstow Drucker Memorial Collection of Oriental Art consists of oriental furniture, accessories, art, textiles, and costumes. The collection was given to the university in 1944 by the late Arthur E. 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 in White Hall by writing directly to the Department of Apparel, Merchandising, and Interior Design or by calling (509) 335-3823 for an appointment.

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 housed in White Hall. Tours may be arranged by calling (509) 335-3823.

James Entomological Collection

One of the largest insect collections in the Pacific Northwest, the Maurice T. James Collection houses over one million insect specimens and an extensive working library. Adult and immature stages of all insect groups and many related arthropods are represented with particular strengths in the flies, beetles, and butterflies. Primarily of regional significance, the collection also includes considerable material from the New World tropics, eastern North America, and Asia. The collection functions essentially as a research facility by providing specimens on loan to recognized scientists worldwide, by offering identification services to university extension entomologists, and by serving as a repository of type specimens and other materials. Public tours and interpretive presentations for groups can be arranged in advance by calling (509) 335-3394. The collection is located in the Food Science and Human Nutrition Building, Room 157.

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.

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 from 9:00 a.m. to 4:00 p.m., five days a week, and by appointment by calling (509) 335-3250; staff provide assistance to persons wanting to identify and learn about plants. Facilities include a small reference library, a wet lab, reprint and slide collections, computers, and special botanical indices.

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 of Washington and nine of the 11 soil orders in Soil Taxonomy. Soils that are particularly well represented in the collection are those of the Palouse region and those from eastern and central Washington that contain layers of volcanic ash from the many prehistoric and historic eruptions of volcanoes in the Cascade region. The collection is the work of Henry W. Smith, emeritus professor of soils at Washington State University. The soil monoliths constitute a very valuable resource for both teaching and research within the Department of Crop and Soil Sciences. The collection is located in Johnson Hall, Room 114, and may be viewed from an observation window any time the building is open. Persons or groups interested in touring the collection should contact Alan Busacca at (509) 335-1859.

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 “Arts and Lectures on the Palouse” calendar and in a monthly calendar of events which is available on the SMTA web site at www.wsu.edu/Music_and_Theatre/calendar.html or by calling (509) 335-8525, the SMTA events line. The Music Program, in addition to the presentations listed above, supports several performance organizations with enrollment open to all WSU students by audition. Students interested in continuing their musical experience through participation in one of the ensembles are encouraged to contact the Music Program for further information; call (509) 335-7757.

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

Jewett Observatory and University Planetarium

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

The University Planetarium is located in Sloan Hall, Room 231. Information about open house and group tours of either the observatory or the planetarium can be obtained by contacting the Program in Astronomy, (509) 335-6868.

The Ombudsman Office

The Ombudsman Office is a neutral and independent resource designated by the university to receive and investigate complaints, grievances, and suggestions and seek prompt, equitable, and reasonable solutions to personal and organizational problems. Students, faculty, and staff may contact the office for confidential information and assistance. The office supplements rather than replaces other regular university appeal and grievance procedures. The office, located in Wilson 2, is open during the academic year from 8:00 a.m. to 5:00 p.m.; phone (509) 335-1195.

Speech and Hearing Clinic

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

Application may be made to the Speech and Hearing Clinic of the Department of Speech and Hearing Sciences, Daggy Hall, Room 133, (509) 335-1509.

Student Advising and Learning Center (SALC)

The Student Advising and Learning Center, located in Lighty Student Services Building, Room 260, provides students responsive and timely services, programs, and academic advising prior to and after enrolling at the university, facilitating their enrollment, retention, academic success and progress to graduation. Students with questions on academic programs, degree requirements, certification into majors, services available, or students in need of help with study skills, reading, writing, test taking, or advising should contact the center, (509) 335-6000. The center faculty and staff are responsible for:

• Coordination of advising.
• Access to Freshman Seminar Program.
Student Services and Facilities

- Operating the Transfer Center and providing assistance to transfer students.
- Assistance with study skills.
- Assistance with writing skills (in cooperation with the Writing Lab).
- Assistance with test-taking skills.
- Access to computer-based learning and multimedia development.
- Tutoring in a wide range of subjects.
- SALT 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 SALT program upon entrance to the university or as a retention condition. Students may also be referred to the SALT 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

Information Technology offers the Student Computing Services Labs, a group of labs that include both IBM and Macintosh computers. Internet, word processing, spreadsheet, multimedia, and other commonly used software are available. In addition, a variety of special hardware such as laser printers, color printers, scanners, CD-ROM burners, and others are provided. A lab monitor is always on duty in each lab to assist customers. Semester, yearlong and hourly passes are available. To purchase a SCS lab pass, choose Optional Services on METRO or present your Student ID card to the monitor on duty in any SCS lab.

The SCS Student HelpDesk and the ITB lab have been consolidated and are located in ITB 2091. HelpDesk consultants are available to answer questions about UNIX and Network ID accounts. For students living off-campus, the HelpDesk provides support for installation of modems and configuration to the WSU dial-up modem pool. Help is available for any Information Technology service by coming to the HelpDesk in the ITB lab, or calling (509) 335-HELP.

Other labs are located at Gannon Goldsworthy, Duncan Dunn, Stephen-son Center, Streit Residence Halls, Todd Hall and the CUB.

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 Residential Computing Consultants (RCCs) who live in or near every residence hall at WSU. In addition to performing installations and troubleshooting, the RCCs are available for general computing support questions.

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 see patients by appointment, with urgent care for emergencies available as well. A registered nurse is available to students by telephone 24 hours a day. Located in the 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 except for the lunch hour. The cost of medications can be charged to student accounts. Call (509) 335-5742 for information.

The Health and Wellness Services Wellness Programs are staffed by a substance abuse counselor, a sexuality education coordinator, a fitness coordinator, and health educators. Located in the center of campus in room 301 of the Administration Annex Building, the Wellness Programs’ offices are open from 9 a.m. to 5 p.m. Monday through Friday. Call (509) 335-9555 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/maingraph.html.

WSU Telephone Service for Students

The Information Technology Phone Desk provides telephone service to all University housing. Residents of University apartments, with the exception of Yakama, may select WSU Centranet phone service or contract directly with GTE.

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.

WSU Centranet service is billed through the student account and has a lower installation fee than GTE, but a higher monthly fee. WSU Centranet limits the caller to AT&T 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.

GTE service is available by contacting GTE directly. With GTE, a resident has their choice of long distance carrier, and four different monthly service plans. While GTE’s installation fees are higher than WSU Centra-net service, the monthly fees are less expensive, before city and state tariffs.

GTE service is not available in tandem with WSU Centranet service; students must choose one or the other.

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.

If you have questions, visit the I-P Phone Desk in ITB 2088 or call (509)335-3663.

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:8080/~wrc/women.htm.
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.

Independent Study: As part of EDP, 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 EDP.

Conferences and Institutes (C & I): This division plans and conducts noncredit programs, including conferences, institutes, seminars, short courses, and workshops to sites throughout the state of Washington and beyond. Offices are located in Pullman and Puyallup. The division draws upon the instructional resources of the university and outside content experts to meet dynamic and varied professional continuing education and training needs. Clients include business and industrial firms, government agencies, schools, professional associations and others interested in increasing their knowledge and professional competencies. Call 1-800-942-4978 or visit our web site at www.eus.wsu.edu/cii/ 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 ✔FYDA next to the degree program sequence in this catalog. Students who are interested in the program may contact their departmental advisor.

University Honors College

The University Honors College (UHC) at Washington State University is one of the oldest and most well-known honors colleges in the nation. A free-standing academic unit, the UHC offers highly motivated and talented students an alternative curriculum taken in place of general education requirements. The UHC provides an enriched intellectual experience for its students. They pursue a broad and comprehensive general program as they specialize in their chosen majors. Through completion of an enriched series of small classes, seminars and independent study options, students admitted into the UHC acquire a greater understanding of the natural and social sciences, of the arts, of language and literature, and of the historical and philosophical development of the cultures of the world. The University Honors College aims to support the best possible teaching and learning circumstances for participating faculty and students. It has as its primary goal the fostering of genuine intellectual curiosity and the encouragement of a life-long commitment to learning.

Over 1200 students are enrolled in the University Honors College. They come from all departments and colleges of the university, from agriculture to zoology, from engineering to English, from fine arts to economics. Honors is not a major in and of itself. Honors students, like other students, major in particular departments in preparation for professional careers. Yet in place of fulfilling the General Education Requirements expected of other students, honors students pursue an enriched, often interdisciplinary curriculum designed for active learners. During their four years at the university, honors students receive extensive advising through the Honors College and through their own academic departments. Honors students and regular students fulfill approximately the same number of required general education hours, but they do so in different classes. Honors courses are small and are taught by established faculty members. Based on an enriched, interactive model rather than an accelerated curricular model, 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 10-15 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 information obtained from the student and from high school advisors. During the spring or summer preceding their first year, eligible students will receive letters inviting them to join the University Honors College. Those who do not receive such letters but wish to investigate possible participation in the college should contact the Honors Center for information. The eligibility of transfer and international students is evaluated on a case-by-case basis.

Students who are not admitted in the initial selection may petition to enter the University Honors College at any time after the end of their first semester but no later than the beginning of their junior year. To continue participation in the UHC a student must maintain an overall B+ average (3.2). Students in the University Honors College are not required to complete the General Education Requirements. For more information on the University Honors College, please refer to the departmental section of this catalog. Visit our web site at www.wsu.edu/~honors/.
International Programs

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

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

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

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

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

Development Cooperation has administrative responsibility for the establishment, facilitation and coordination of university research, economic development and inter-institutional coordination in developing and industrialized countries. For more information about International Programs contact the IP Administration Office, French 130, 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.

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, 451 Avery Hall.

The Freshman Seminar – Students who enroll in the two-credit Freshman Seminar through GenEd 104, 105, or U H 105 participate in activities and projects that introduce them to researching, writing, and thinking at the college level. Each small group of seminar students also enrolls in a second class to provide each other additional support as they make the transition to the university. Contact: The Student Advising and Learning Center (SALC)—335-7421, 260 Lighty, or Office of General Education, 335-5699, Administration Annex, 301B.

Discovery Courses – Discovery courses are one-credit courses led by highly respected members of the University faculty who teach small groups of students about the latest research trends in a variety of fields. Discovery courses are numbered 138 in the course listings and are offered by a variety of departments. Contact: The Student Advising and Learning Center (SALC)—335-7421, 260 Lighty.

The Tenieve Program – Groups of students who participate in this program enroll in several courses together and live in the same residence hall. Students in the Tenieve (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, 451 Avery Hall.

For All Students

The University Writing Center – Throughout their careers at WSU, students may take advantage of the assistance of writing tutors in the Writing Center, 451 Avery Hall on a walk-in basis, as well as through an online web site, owl.wsu.edu. Contact: WSU Writing Programs—335-7695, 451 Avery Hall.

Research and Writing Tutorials – Students who wish to seek tutoring for any of a variety of subjects, including those involving research skills and writing, may pay a small fee for tutoring through the Student Advising and Learning Center. Students should also contact academic departments for possible tutoring assistance. Contact: The Student Advising and Learning Center (SALC)—335-7421, 260 Lighty.
Apache Point Observatory

The Apache Point Observatory (APO) includes a 3.5-meter telescope operated by the Astrophysical Research Consortium (ARC), of which WSU is a member. The telescope is located in the Sacramento Mountains in southern New Mexico and has state-of-the-art instrumentation for optical and near-infrared observing. The telescope is generally operated remotely with commands and data transferred over the Internet, although observers are required on site in some cases. Additional information about the observatory is maintained on the APO web site, http://www.apo.nmsu.edu, or by calling the Program in Astronomy at (509) 335-6868.

Laboratory for Atmospheric Research

The Laboratory for Atmospheric Research provides a recognized center of atmospheric studies at Washington State University. The laboratory, which is administered through the Department of Civil and Environmental Engineering, provides students with graduate training in the atmospheric sciences. Students are encouraged to participate in the various grant-supported research projects of the laboratory. Since atmospheric research requires an interdisciplinary approach, both the faculty within the laboratory and those who work cooperatively on joint research programs have diverse disciplinary backgrounds. Research areas include those of interest to the citizens and industries of the state, the nation, and the world. Thus, the laboratory is engaged in research aspects of meteorology, atmospheric chemistry, pollution abatement, global climate issues, and effects of atmospheric pollutants. Much of the research involves field measurement programs which have taken the faculty, staff, and students to such diverse places as China, the Antarctic Continent, the Caribbean, and the Pacific Ocean as well as numerous sites in the United States. Sampling platforms used include mobile trailers, towers, aircraft, and ships. Analytical technique development in the laboratory and computerized data interpretation including atmospheric modeling round out the laboratory research. Visit our web site at www.wsu.edu/NIS/ResearchFacilities.html#Laboratory-for-Atmospheric-Research.

Electron Microscopy Center

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

Environmental Research Center

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

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

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

GeoAnalytical Laboratory

The GeoAnalytical Laboratory is housed in the Geology Department and provides analytical services, primarily for geological research, using the most up-to-date analytical equipment. The laboratory comprises an automated Cameca electron microprobe for quantitative micro analysis and elemental mapping, a Siemens X-ray powder diffractometer for phase identification and crystal structure, an automated Rigaku XRF and Sciex ICP/MS for routine major, trace and rare earth element analysis, and a Finnigan-Mat gas source mass spectrometer for oxygen and hydrogen isotope ratio determinations. Most of this equipment is available to other departments and other institutions for a reasonable fee.

Other facilities available in the laboratory include rock slabbing, the making of thin and polished petrography sections, and microphotography.

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 several platforms:

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

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

- IT supports connections to external networks such as the Internet and the Washington State K-20 Educational Telecommunications Network. Continuing efforts include enhancing the capabilities of WSU’s networks through the use of new networking technologies and establishing high-performance connections to national research networks, such as those being developed by the Internet2 organization and others.
- The distributed digital telephone switch network provides telephone and voice mail services for telephones on WSU’s four campuses and the Intercollegiate Center for Nursing Education 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.

**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.

**Social and Economic Sciences Research Center**

The Social and Economic Sciences Research Center has three primary goals: (1) to conduct research in the social, economic, and behavioral sciences that is responsive to the needs and concerns of the state, region, and local communities; (2) to maintain a telephone, mail, and face-to-face survey capability that can be utilized by university faculty and others for conducting research that improves the quality of social science, behavioral, and economic data; and (3) to provide research training for both undergraduate and graduate students in the social sciences. The clientele of the Social and Economic Sciences Research Center include the students, faculty, and administration of Washington State University, and the citizens and agencies of the state. Research facilities include the Public Opinion Laboratory, consisting of 52 personal computers, interviewing stations, laser printers, and related mail survey equipment, and a data processing center. The professional-technical staff of the center provides assistance in all facets of the research enterprise.

Faculty and students from social, behavioral, economic, and educational disciplines participate in center projects. Cooperation with other research centers and departments in the university lends a strong interdisciplinary emphasis to the work of the center.

Further information may be obtained by calling (509) 335-1511 or by visiting our web site at survey.sesrc.wsu.edu.

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**State of Washington Water Research Center**

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

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

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 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 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 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.ce.wsu.edu/wwrc.
General Information

Admission to Washington State University is granted without regard to age, sex, race, religion, color, creed, handicap, national or ethnic origin, or marital status. Admission to the university is granted to eligible applicants prior to registration but not after the tenth day of classes for each semester.

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

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

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

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

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

Retention of Students

The grade point average for freshmen entering from high school in the fall semester 1997 was 3.40. Of the 2,301 freshmen who entered in the fall semester 1996, 2,183 were enrolled in the spring of 1997, and 1,966 continued their enrollment in the fall semester 1997.

Freshman Admission Requirements

Freshman applicants will be considered for admission on the basis of an Admissions Index (AI) which will be calculated using the high school grade point average and test information taken from the results of the Washington Pre-College Test (WPCT) if taken prior to June 1, 1989, the Scholastic Aptitude Test (SAT) or the American College Test (ACT). The AI is calculated on the official transcript information provided at the time of application. In addition, freshman applicants will be required to submit a high school transcript showing completion of no less than the following course work in grades 9-12:

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

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

Applicants who have not graduated from high school at the time of application must maintain a satisfactory record, complete all required courses specified for admission to WSU, and provide evidence of graduation prior to enrollment.

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

Graduates of unaccredited high schools may be required to pass special validating examinations and should write to the Director of Admissions for further information.

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

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

Students who have been offered admission to the university may be invited to join WSU’s Honors Program 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 Program, P.O. Box 645120, Pullman, WA 99164-5120, or call (509) 335-4505.

Transfer Admission Requirements

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

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

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

A complete application includes the application form, an official transcript sent directly from each college or university attended showing work completed at the time of application, and a $35 nonrefundable application fee. Final and complete 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.

Associate Degree Transfer

Students who have completed a Direct Transfer Associate (A.A. or A.S.) degree at a Washington community college or the Associate of Arts for Oregon Transfer degree from an Oregon 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-di-
Admission and Financial Aid

vision General Education Requirements for graduation. Students will also be re-
moved to meet the upper-division General Education Requirements as well as
any departmental and college graduation requirements.

Washington State University recognizes academic credits earned at oth-
er collegiate institutions which are essentially equivalent in academic level
and content to work offered at WSU. Toward this end, the university sub-
scribes to the "Policy on Inter-College Transfer and Articulation Among
Washington Public Colleges and Universities" endorsed by the public col-
leges 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 may complete the Direct Transfer Associate (A.A. or A.S.) degree
from a Washington or Oregon community college after their initial enroll-
ment at WSU, provided the degree is completed in advance of earning 15
semester hours of credit at WSU. No more than two WSU courses may be
used to complete the Direct Transfer Associate (A.A. or A.S.) degree.

Transfer students are encouraged to contact the Office of Admissions, (509)
335-5586, with any questions regarding the transfer of credit.

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. Stu-
dents are encouraged to contact the Office of Admissions for details.

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

The WSU branch campuses, located in Spokane, Tri-Cities, and Vancouver,
offer a variety of undergraduate and graduate degree programs. All three
branches have graduate education; WSU Tri-Cities and WSU Vancouver also
offer 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 a branch campus. In some instanc-
es, students are allowed to attend a local community college and a WSU branch
campus concurrently. Contact the branch campus directly for more information
about this policy as well as specific admission requirements.

Academic programs offered and branch campus addresses are listed on pages 33
and 34 of this catalog. Applications can be obtained from the branch campuses
or the Pullman Office of Admissions. A complete application includes the application
form, an official transcript sent directly from each college or university attended
showing work completed at the time of application, and a $35 nonrefundable ap-
plication 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 Not Enrolled the Previous Semester

Students formerly enrolled at Washington State University and who wish to
return must submit a Former Student Application for Admission. Preference
will be given to applications received by May 1 for fall semester and Decem-
ber 1 for spring semester. Applications submitted after the tenth day of class-
es, in any semester, will not be considered.

Former students returning whose previous academic record at Washing-
ton State University is unsatisfactory will be required to follow established
academic reinstatement procedures prior to admission.

Former students returning who have attended other institutions since last
enrolled at Washington State University must submit an official transcript
directly from each institution attended. Applicants will normally be required
to have at least a 2.0 (C) cumulative g.p.a. in all such work.

Requests for a Former Student Application should be made to the Office
of Admissions or at www.wsu.edu/admissions.

Foreign Student Admission Requirements

Washington State University encourages the application of qualified stu-
dents from other nations to complement its cosmopolitan student commu-
nity. Applicants must submit TOEFL scores, evidence of adequate financial
resources to meet the costs of the proposed study, an International Under-
graduate Application for Admission, and the Educational Credential Eval-

ators application for secondary and post-secondary course work complet-
ed outside of the United States. Please contact the Office of Admissions at
(509) 335-5586 or at www.wsu.edu/admissions for further information.

High School Cooperative Program

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

Limited Enrollment Programs

Since academic departments may establish additional requirements for admis-
son or certification to specific programs, eligibility for admission to Wash-
ington State University does not ensure acceptance into any department or pro-
gram 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, edu-
cation, engineering, fine arts, hotel and restaurant administration, interior de-
gn, landscape architecture, mathematics, music, nursing, psychology, phar-
macy, and veterinary medicine are unable to accept all interested students. In
these situations, and others which may arise in the future, the most highly
qualified students will be selected up to the enrollment limits in the specific
programs. Students applying for admission to selective programs should con-
tact 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 Sep-
tember 1 for spring. Deadlines are subject to change.

Selection of a Major

Students seeking a university degree must organize their efforts in a particu-
lar department or group of related courses. This is the student’s major in-
terest 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 in-
terest 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 in-
terest 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 el-
igible to certify a major after the completion of 24 semester hours. 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 require-
ments. 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 con-
sult the department concerned. Formal certification of a minor or second
major is completed after the student has finished 60 semester hours. Ap-
proved minors are identified in the departmental section of this catalog.

Credit by Examination

Recognizing the natural ability and education experience of many of its ap-
licants, 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 par-
ticular 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 completion of any GERs that have been met through the CLEP examinations. No additional numerical credit will be awarded for these courses.

Matriculated students currently registered may take a special examination for university credit in a course in which they are not registered. Such credits yield no grade points but may yield credit toward completion of 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. The payment should be sent directly to the Controller, WSU, Pullman, WA 99164-1025, not later than May 1 for freshmen and transfers seeking admission for the fall semester. The payment deadline is December 1 for all spring semester applicants.

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 1999-2000 Undergraduate Yearly Expenses

<table>
<thead>
<tr>
<th></th>
<th>Resident</th>
<th>Nonresident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>$3,498</td>
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<tr>
<td>Room and Board</td>
<td>5,436</td>
<td>5,436</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>805</td>
<td>805</td>
</tr>
<tr>
<td>Transportation</td>
<td>3,022</td>
<td>3,022</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>$12,761</td>
<td>$20,133</td>
</tr>
</tbody>
</table>

Note: The above costs are subject to change.

Other Costs
$120 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. 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, 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 financial aid to attend WSU must submit the federal form called the Free Application for Federal Student Aid (FAFSA). These applications are available from all colleges and universities, public high schools, public libraries, and 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. Please allow 7-10 days for mail time. If you miss the priority deadline, we still encourage you to apply. After the March 1 deadline, processing and awarding is done on a date-received basis. Loans are available to all students. Questions should be directed to the Office of Student Financial Aid, Lighty Student Services Building, Room 380, P.O. Box 641068, Pullman WA 99164-1068, (509) 335-9711, faoserv@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.

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

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

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

Federal Veterans Benefits
The Veterans Affairs Office cooperates with the Veterans Administration in carrying out the provisions of the public laws established to give educational benefits to veterans and qualifying dependents of veterans whose death or permanent and total disability is service connected.

Students should apply for admission to the university and for their VA benefits simultaneously. Application for benefits should be made to the WSU Veterans Affairs Office. There is currently at least a two-month delay between approval of the application and receipt of the first monthly benefits check for most students.

Students receiving benefits may be eligible for tutorial assistance or for 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 Children of Law Enforcement Officers and Firefighters
Students who are the children of law enforcement officers or firefighters who lost their lives or became totally disabled in the line of duty while employed by any public law enforcement agency or full-time or volunteer fire department in the state of Washington may be exempted from the payment of full tuition. Washington law defines a totally disabled individual for waiver purposes as a person who has become permanently disabled for life by bodily injury or disease and is thereby prevented from performing any occupation or gainful pursuit. Students claiming this special exemption should apply to the Veterans Affairs Office, French Administration Building, Room 346, and provide legal documentation of the death or disablement under the conditions prescribed for eligibility in RCW 28B.15.380.
Waiver of Fees for Persons Age 60 and Over

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

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

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

Credit Enrollments: Enrollment for credit under the fee waiver is limited to 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 card. 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 Time Schedule.

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 who have been certified by the agency as eligible. The state employee must be admitted to the university and submit an approved tuition waiver request form to the Registrar’s Office 15 working days before the beginning of each semester. Participants will be assessed a $5 nonrefundable fee and are subject to the same limitation as fee waiver students age 60 and over, listed above. Contact the branch campus registration office or the Pullman Registrar’s Office for forms.
Twenty-one residence halls, including coeducational, single-sex and age-restricted halls, provide space for 4,600 students at the university. Additionally, 2,200 students reside in Greek chapter houses. Many of these living communities focus around particular academic, social or international issues. These include a Scholars Hall, Wellness Hall, and a Science, Engineering, and Math Hall, as well as an International House and halls designed specifically for the success of new students. Twenty-six (Inter)National Fraternities and 14 (Inter) National Sororities currently maintain chapters ranging in size from 40 to 110 people. Most sororities and fraternities maintain chapter houses. Facilities for physically challenged students are also provided.

Students living in residence halls, fraternities and sororities elect their own officers, and each community affords many opportunities for leadership experience. The Residence Hall Association acts on behalf of the residence halls, as well as coordinates university-wide hall programming. Panhellenic and Interfraternity Council are the governing bodies for the Greek system and work together to promote scholarship and other programming activities. Residence hall information may be obtained by writing to Housing Services, Streit-Perham Administrative Office, P.O. Box 641726, Pullman, WA 99164-1726. For information on sororities and fraternities, please write to Panhellenic and/or Interfraternity Council, Streit-Perham Administrative Office, P.O. Box 641724, Pullman, WA 99164-1724, or visit our web site at www.wsu.edu/hdrl/.

**Housing Regulations**

All single undergraduate freshmen under 20 years of age are required to live in organized living groups which are officially recognized by the university (residence halls, fraternities, and sororities) unless they are residing with parents or legal guardians. Exemptions are granted when students demonstrate to Student Affairs that (1) they have attended an institution of higher education as regularly enrolled students for at least two regular semesters or three regular quarters (30 semester hours), (2) they are living with immediate family in a family situation (mother and/or father, legal guardian, married brother or sister, aunt or uncle, 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, multiple occupancy with a level-two dining account for the 1999-2000 academic year is $4,618. This amount is to be paid prior to registration or on an arranged installment basis. A security deposit and a signed housing and dining contract are required before space can be reserved.

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

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

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

Washington State University is not liable for the loss of money or valuable 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 694 unfurnished apartments (one-, two-, and three-bedroom) for families and 39 furnished, studio apartments for unmarried graduate students. Furniture may be rented when available through the furniture rental program. Apartments are assigned from a waiting list based on the date the completed application and $60 refundable deposit are received. Units for use by handicapped students are available on a limited basis. Information and applications may be requested by calling Housing Reservations at (509) 335-4577. Written requests may be mailed to: Housing Reservations, WSU Housing Services, P.O. Box 41726, Pullman, WA 99164-1726.

**Single Student Apartments**

The university operates 266 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 full groups (one person per bedroom) of the same sex. Units are two-, three-, and four-bedroom and are completely furnished except for linen, kitchen utensils, cleaning equipment, and study lamps. Assignments are made from a waiting list based on the date a completed group application is received. Information and applications may be requested by calling Housing Reservations at (509) 335-4577. Written requests may be mailed to: Housing Reservations, WSU Housing Services, P.O. Box 641726, Pullman, WA 99164-1726.
## Tuition and Fees

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

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

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

### ESTIMATED 1999-2000 REGISTRATION FEES

<table>
<thead>
<tr>
<th></th>
<th>FULL-TIME FEES</th>
<th>PART-TIME FEES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>per semester</td>
<td>per credit hour (per credit hour; minimum charge: 2 credit hours)</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>DVM</td>
</tr>
<tr>
<td>Resident (10-18)</td>
<td>$1,766.00</td>
<td>$4,536.00</td>
</tr>
<tr>
<td>Resident (19 hrs and above)</td>
<td>$1,766.00+</td>
<td>$4,536.00+</td>
</tr>
<tr>
<td>Resident-WAMI</td>
<td>4,287.00</td>
<td></td>
</tr>
<tr>
<td>Nonresident (10-18 hrs)</td>
<td>5,488.00</td>
<td>11,519.00</td>
</tr>
<tr>
<td>Nonresident (19 hrs and above)</td>
<td>5,488.00+</td>
<td>11,519.00+</td>
</tr>
</tbody>
</table>

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

### SPECIAL REGISTRATION FEES 1999-2000

| High School Cooperative Program | $239.00 |
| V M 601P and 602P                | 2,065.00 |
| Graduate Leave Status            | 25.00   |
| Auditing a Course                |         |
| charge for each audit hour       |         |
| (does not apply to full-fee-paying students) | 54.00   |
| Challenging a Course             |         |
| charge for each challenge examination petition | 165.00 |
| (See Rule 15.)                   |         |

Consult Time Schedule for additional fees related to specific courses.

### OTHER FEES AND CHARGES (not necessarily applicable to all students)

<table>
<thead>
<tr>
<th>Adding a course</th>
<th>charge for each course added after the 30th day or dropped after 10th day of semester</th>
<th>$5.00</th>
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</thead>
<tbody>
<tr>
<td>Admission application, undergraduate (nonrefundable)</td>
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<tr>
<td>Basic Skills Proficiency Test</td>
<td>35.00</td>
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<tr>
<td>Copyright</td>
<td>35.00</td>
<td></td>
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<tr>
<td>Dishonored checks, service charge</td>
<td>15.00</td>
<td></td>
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<tr>
<td>Entrance qualifying graduates of unaccredited high schools test</td>
<td>10.00</td>
<td></td>
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<tr>
<td>Foreign language reading examination</td>
<td>10.00</td>
<td></td>
</tr>
<tr>
<td>Foreign Student Orientation (required of all new foreign students)</td>
<td>25.00</td>
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</tr>
</tbody>
</table>

### Resident Status

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

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

A resident student is one who is either financially dependent upon a parent or legal guardian who maintains a bona fide domicile in the state of Washington or a financially independent student who maintains a bona fide domicile in the state of Washington for other than educational purposes. Financial dependence or independence shall be determined by the amount and source of student finances and whether or not the student has been claimed as a deduction on federal income tax forms in the calendar year immediately preceding the semester for which residency is sought. The term domicile denotes a person’s true, fixed and permanent home and place of habitation.

Active duty U.S. military personnel stationed in Washington may request a waiver of non-resident fees through the WSU Veterans Affairs Office. Their spouses and dependent children shall be classified resident.

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

1. Registration of motor vehicles, motor homes, travel trailers, boats or other personal property.
2. Driver’s license.
3. Employment records.
4. Income tax returns.
5. Voter registration.
6. Selective service registration.
7. Purchase of primary residence, lease agreement or monthly rental receipts.
8. Resident status of students in schools attended outside the state of Washington.
9. Membership in professional, business, civic or other organizations.
10. Records of checking or savings accounts and safety deposit box rental.

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

Applications for change in 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.

Appeals of institutional determination of classification shall be subject to court review only under procedures described in Chapter RCW 28B.19. 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 employed by an academic department in support of instructional or research programs involving not less than 20 hours per week; (3) 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; (4) is active-duty military personnel for the first 12 months stationed in the state of Washington; or (5) 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.

Refund Policy

Tuition, operating, and student services and activities fees will be refunded in full if the student officially withdraws from the university prior to the sixth day of class of the semester for which fees have been charged. If official withdrawal occurs after the fifth day of the semester, the following refund will apply:

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

Weeks during which the university is on vacation for the entire week do not count in this refund schedule.

For students disenrolled for nonpayment, only 50% of the charges for tuition, operating, and student service and activity fees will be cancelled. Thus, such students will be liable for the balance remaining.

If a student has the optional student medical insurance, the student must come to French Administration Building, Room 232, and cancel it or the student will be liable for the premium.

An administrative fee of the lesser of 5% of the assessed tuition and mandatory fees or $100 will be charged against the refund. Other amounts owed by students, for benefits or services received, will be deducted from the refunded fees.

For short courses and sessions of less than four weeks' duration, the refund period is 24 hours after the official start of the session.
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, ongoing 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.

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 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.

College programs in home economics (also known as family and consumer science) prepare students for positions as dietitians, parent educators, consumer and family management consultants, 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 advisor 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 advisor jointly have the responsibility of selecting courses to fit the student’s native ability and professional interests consistent with departmental and general education requirements. Students are encouraged to do more than satisfy the minimum requirements.

Agriculture Degrees

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science in Agriculture</td>
<td></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>
<tr>
<td>Integrated Pest Management</td>
<td>Entomology</td>
</tr>
<tr>
<td>Bachelor of Science</td>
<td></td>
</tr>
<tr>
<td>Agribusiness</td>
<td>Agricultural Economics</td>
</tr>
<tr>
<td>Agricultural Economics</td>
<td>Agricultural Economics</td>
</tr>
<tr>
<td>(including agricultural production and resource management; and food and resource economics)</td>
<td>Biological Systems Engineering</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</td>
<td>Crop and Soil Sciences</td>
</tr>
<tr>
<td>(including technical, business and industry, science, and turf management)</td>
<td></td>
</tr>
<tr>
<td>Food Science and Human</td>
<td>Food Science and Human</td>
</tr>
<tr>
<td>Nutrition</td>
<td>Nutrition</td>
</tr>
<tr>
<td>Genetics and Cell Biology</td>
<td>Genetics and Cell Biology</td>
</tr>
<tr>
<td>Horticulture</td>
<td>Horticulture and Landscape Architecture</td>
</tr>
<tr>
<td>(including fruit and vegetable production and ornamental horticulture)</td>
<td></td>
</tr>
<tr>
<td>Natural Resource Management</td>
<td>Natural Resource Sciences</td>
</tr>
<tr>
<td>Forestry</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td></td>
</tr>
<tr>
<td>Wildlife</td>
<td></td>
</tr>
<tr>
<td>Wildland Recreation</td>
<td></td>
</tr>
<tr>
<td>Natural Resource Sciences</td>
<td>Natural Resource Sciences</td>
</tr>
<tr>
<td>Wildlife</td>
<td></td>
</tr>
<tr>
<td>Plant Sciences</td>
<td>Crop and Soil Sciences</td>
</tr>
<tr>
<td>Soil Science</td>
<td>(including environmental and soil management)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor of Landscape Architecture</td>
<td></td>
</tr>
<tr>
<td>Landscape Architecture</td>
<td>Horticulture and Landscape Architecture</td>
</tr>
</tbody>
</table>

Graduate School
COLLEGE OF BUSINESS AND ECONOMICS

Glenn L. Johnson, Interim Dean

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

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

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

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

To have selected high quality graduate programs designed to satisfy market needs.

To produce scholarly work that is useful in the application and creation of knowledge, enhances the educational experience of our students, is valuable to business and government, and adds to the reputation of the College of Business and Economics.

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

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

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

<table>
<thead>
<tr>
<th>Bachelor of Arts</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>Human Resources/Personnel</td>
</tr>
<tr>
<td>Business Admin</td>
<td>International Business</td>
</tr>
<tr>
<td>Business Economics</td>
<td>Management Information Systems</td>
</tr>
<tr>
<td>Business Law</td>
<td>Real Estate</td>
</tr>
<tr>
<td>Decision Sciences</td>
<td>Marketing</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>Risk Management and Insurance</td>
</tr>
<tr>
<td>Finance</td>
<td>General Business</td>
</tr>
</tbody>
</table>

Within the college a specialized Bachelor of Arts degree is offered in the area of Hotel and Restaurant Administration.
The Department of Economics offers a Bachelor of Arts in Economics, with specializations in such areas as:

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

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

Minors

Minors are available in the following business administration fields: business administration, business law, decision sciences, finance, human resource/personnel, international business, management, management information systems, marketing, real estate, and risk management and insurance. Minors in economics, sustainable development, and hotel and restaurant administration are also available. For specific information regarding minor requirements, see the Business Administration, Economics, and Hotel and Restaurant Administration sections of this catalog.

Admission

All students interested in pursuing the Bachelor of Arts degree in business or hotel and restaurant administration should certify as PreBA/PreHA majors upon completion of 24 semester hours, 6 of which must be in business or economics core courses, and have a 2.0 cumulative/major 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 30 semester hours, 6 of which must be in economics core courses.

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

Diversity, Recruitment, and Retention

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

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

Degrees

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

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

**Department or Area**
- Business Administration
- Accounting and Business Law
- Economics
- Business Administration
- Business Administration
- Business Administration

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

**Department or Area**
- Business Administration
- Business Administration
- Business Administration

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

**Department or Area**
- Business Administration
- Business Administration
- Business Administration

**Degrees: Spokane Campus**
- Master of Technology Management
- Bachelor of Arts
- Master of Business Administration
- Master of Technology Management

**Department or Area**
- Business Administration
- Business Administration
- Business Administration
- Business Administration

**SCHOOL OF ACCOUNTING, INFORMATION SYSTEMS, AND BUSINESS LAW**

Robert R. Greenberg, Director

**Mission:**

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

**Goals:**

The goals of the School of Accounting, Information Systems, and Business Law are as follows:

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

**COLLEGE OF EDUCATION**

Judy Nichols Mitchell, Dean

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

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

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

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

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

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

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

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

<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 Recreation Administration and Leisure Studies</td>
<td>Kinesiology and Leisure Studies</td>
</tr>
<tr>
<td>Bachelor of Science in Kinesiology</td>
<td>Kinesiology and Leisure Studies</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, Counseling, Curriculum, Educational Psychology, Elementary Education, Literacy</td>
</tr>
<tr>
<td>Master of Arts in Recreation and Leisure Studies</td>
<td>Recreation Administration and Leisure Studies</td>
</tr>
<tr>
<td>Master of Arts in Education</td>
<td>Administration, Counseling, Curriculum, Educational Psychology, Elementary Education, Literacy</td>
</tr>
<tr>
<td>Master in Teaching</td>
<td>Elementary Education</td>
</tr>
<tr>
<td>Master of Science in Kinesiology</td>
<td>Exercise Science, Movement Studies</td>
</tr>
<tr>
<td>Doctor of Education</td>
<td>Educational Administration, Curriculum, Educational Psychology, Elementary Education, Literacy</td>
</tr>
<tr>
<td>Doctor of Philosophy (Education)</td>
<td>Administration, Counseling Psychology, Educational Psychology, Teaching and Learning</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 develop a coherent plan for integrating 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.

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>Biological Systems Engineering</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Computer Engineering</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Construction Management</td>
</tr>
</tbody>
</table>
Bachelor of Science (continued)

- Electrical Engineering
- Manufacturing Engineering (Vancouver)
- Materials Science and Engineering
- Mechanical Engineering

Master of Engineering Management

- Engineering Management (Spokane, Tri-Cities, Vancouver)

Master of Science

- Architecture
- Chemical Engineering
- Civil Engineering
- Computer Science
- Electrical Engineering
- Engineering
- Environmental Engineering
- Materials Science and Engineering
- Mechanical Engineering

Doctor of Philosophy

- Chemical Engineering
- Civil Engineering
- Computer Science
- Electrical Engineering
- Engineering Science
- Materials Science (Interdisciplinary Program)
- Mechanical Engineering

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 Accreditation Board for Engineering and Technology (ABET). Accreditation for the manufacturing engineering and computer engineering degrees will be sought with their first graduating classes.

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

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

Computer Science

Computer science has its principal bases in the engineering sciences and mathematics. Computer science encompasses the theory and techniques by which information is encoded, stored, communicated, transformed, and analyzed. It deals particularly with the theory of algorithms, the step-by-step procedures for solving a problem or accomplishing some goal. Students study computer software and hardware systems for efficient solution of practical problems. The undergraduate program in computer science, offered through the School of Electrical Engineering and Computer Science, is accredited by the Computing Sciences Accreditation Board (CSAB). Curricular specializations available include artificial intelligence, communications, computer engineering, computer graphics, mathematics, management information systems, robotics and control, 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.

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 advisors in their indicated major for the period prior to their being certified in a major. Students may certify into a major after they have completed at least 24 semester credit hours and a prerequisite set of courses for the specific major.

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

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

Prospective students in construction management are assigned to a construction management advisor and go through a step-by-step screening process scheduled at the end of their second year of studies.

THE GRADUATE SCHOOL

Karen P. DePauw, 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 curriculum. For many, the Graduate School of Washington State University will provide advantageous and attractive opportunities.

Prospective graduate students should prepare themselves adequately, both in the fundamental subject matter necessary for their advanced work and in the other branches of learning, so that they may intelligently fulfill their responsibilities of leadership and service to society.

In a graduate program, a student is required to complete appropriate advanced courses, to participate in seminars, and to make an original contribution to knowledge. At least one academic year of graduate study, or the equivalent, is necessary for the completion of a program leading to a master’s degree. A doctor’s degree is awarded in recognition of distinctive scholarship.

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

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

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

Exemption may be granted to graduate students only, graduate students are subject to the usual procedures and regulations of the institution and to such Graduate School rules and procedures as outlined on the following pages and in the Graduate School Policies and Procedures.

Opportunities for advanced study and research under members of the graduate faculty are offered in the Graduate School. Graduate instruction and research are carried on in most of the regularly organized departments. Programs of study leading to advanced degrees are under the governance of the Graduate Studies Committee. The graduate faculty consists of the President of Washington State University, the deans of the various academic units, the chairs of the academic departments and programs in which advanced degree programs are offered, and selected other members of the faculty. Members of the graduate faculty have the responsibility of offering courses limited to graduate students, guiding graduate seminars, serving as thesis advisors and members of thesis committees, administering Graduate School examinations (master’s, preliminary, and doctoral) and, from time to time, serving as members of the Graduate Studies Committee. Graduate students have opportunities for studying and working in a close professional relationship with the members of the 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 resources science, food science, genetics and cell biology, geology, history, horticulture, individual interdisciplinary studies, materials science, mathematics, mechanical engineering, microbiology, neuroscience, nutrition, pharmacology and toxicology, physics, plant pathology, plant physiology, political science, psychology, sociology, soil science, veterinary science, and zoology.

Doctor of Arts

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

Master of Arts and Master of Science

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

Other Degrees

Courses of study leading to the Doctor of Education and Master of Education degrees are offered in the Department of Educational Leadership and Counseling Psychology and the Department of Teaching and Learning. A student may undertake a program for the degree of Master of Accounting, Master of Business Administration, Master of Engineering Management, Master of Fine Arts, Master of Health Policy and Administration, Master of Nursing, Master of Public Affairs, Master of Regional Planning, Master of Technology Management, or Master in Teaching. A program of study leading to the degree of Master of Arts in Teaching (MAT) is offered in theatre arts and drama.
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 for undergraduate credit must obtain approval of the major advisor and the chair of the department or program in which the course is offered.

Registration

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

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

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

Registration Policy for Graduate Students Completing Degree Requirements

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

Scholarship Standards

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

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

Requirements for a Graduate Degree

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

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

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

Time Limit

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

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

Assistantships, Fellowships, and Scholarships

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

As most appointments are made by April 1, it is desirable to have applications completed by March 15.

Washington State University subscribes to the following resolution of the Council of Graduate Schools in the United States regarding scholars, fellows, trainees, and graduate assistants. “Acceptance of an offer of financial support (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by a prospective or enrolled graduate student completes an agreement that both student and graduate school expect to honor. In that context, conditions affecting such offers and their acceptance must be defined carefully and understood by all parties. Students are under no obligation to respond to offers of financial support prior to April 15. Earlier deadlines for acceptance of such offers violate the intent of this Resolution. In those instances in which a student accepts an offer before April 15, and subsequently desires to withdraw that acceptance, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer. It is further agreed by the institutions and organization subscribing to the above Resolution that a copy of this Resolution should accompany every scholarship, fellowship, traineeship, and assistantship offer.”

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

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 pre-law) to students who will then enter professional schools. At the same time these curricula are designed to provide a basic liberal education.

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

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

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

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

Visit our web site at www.wsu.edu/~libarts/.

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 theatre arts and drama. In addition, several special curricula are offered and are listed alphabetically in this catalog as follows: alcohol studies, American studies, Asia program, Canadian area studies, general studies (classics, 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 English, history and philosophy.

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

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<thead>
<tr>
<th>Degree</th>
<th>Department or Area</th>
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<tbody>
<tr>
<td>Bachelor of Arts</td>
<td>American Studies</td>
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<tr>
<td>Bachelor of Fine Arts</td>
<td>Anthropology</td>
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<tr>
<td>Bachelor of Science</td>
<td>Asian Studies</td>
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<td></td>
<td>Communication</td>
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<td>Comparative American Cultures</td>
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<td></td>
<td>Criminal Justice</td>
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<td></td>
<td>English</td>
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<td></td>
<td>Fine Arts</td>
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<td></td>
<td>Foreign Languages and Literatures</td>
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<td>General Studies</td>
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<td></td>
<td>humanities</td>
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<td>social sciences</td>
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<tr>
<td></td>
<td>History</td>
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<td></td>
<td>Liberal Arts</td>
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<td></td>
<td>Music</td>
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<td></td>
<td>Philosophy</td>
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<tr>
<td></td>
<td>Political Science</td>
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<td>Social Studies</td>
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<td></td>
<td>Sociology</td>
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<td></td>
<td>Speech and Hearing Sciences</td>
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<td></td>
<td>Theatre Arts and Drama</td>
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<td></td>
<td>Women's Studies</td>
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<td></td>
<td>Fine Arts</td>
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<tr>
<td></td>
<td>Music</td>
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<tr>
<td></td>
<td>Psychology</td>
</tr>
<tr>
<td></td>
<td>American Studies</td>
</tr>
<tr>
<td></td>
<td>Anthropology</td>
</tr>
</tbody>
</table>

Master of Arts in Teaching (MAT)
Master of Fine Arts
Master of Science
Doctor of Philosophy

COLLEGE OF NURSING/
INTERCOLLEGIATE CENTER FOR NURSING EDUCATION

Dorothy M. Detlor, Dean

The Intercollegiate Center for Nursing Education (ICNE)/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 within the state and in the larger 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
ICNE/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, the Wenatchee site, 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, nursing homes, 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 or may be taken 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 Center for Nursing Education building in Spokane, the outreach site in Yakima, the Wenatchee site, 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, (which includes the Wenatchee site), or WSU Vancouver must do so through the Admissions Office at the respective sites. Applications are available until February 15 for full semester consideration. Students are encouraged to contact an advisor at their respective campus for lower-division advising.

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

Since the number of applicants to the ICNE/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 acute care nursing, psychiatric/mental health nursing, community health nursing, and family nurse practitioner positions. The program is accredited by the National League for Nursing. Degree requirements (except the family nurse practitioner program) can be completed in three semesters of full-time study. However, four semesters are required for the family nurse practitioner curriculum. Individualized programs can be arranged to facilitate part-time study. Applications must be complete by March 15 for fall admission and by November 15 for spring admission.

Professional Development
The Professional Development Program focuses on specific learning needs of Registered Nurses and other professional health care workers. The technology and resource strengths of the ICNE/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.

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

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

COLLEGE OF PHARMACY

G. Dennis Clifton, Interim Dean

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

The application period each academic year is from December 1 to March 1. Because the number of applicants to the professional program exceeds the number that can be admitted, no assurance can be given that those who successfully complete the pre-pharmacy requirements will be admitted to the Doctor of Pharmacy program. For additional information regarding the Doctor of Pharmacy curriculum, please see the College of Pharmacy home page at www.phar.wsu.edu, or contact the College of Pharmacy Office of Student Affairs at (509) 335-1402.

Degrees
The College of Pharmacy offers the following degree programs: Doctor of Pharmacy (Pharm.D.), Master of Science (Pharmacology and Toxicology), and Doctor of Philosophy (Pharmacology and Toxicology).

COLLEGE OF SCIENCES

Leon J. Radziemski, 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 international 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, Shock Physics Laboratory, Geoanalytical Laboratory, Ownbey Herbarium, Conner Zoological Museum, Hudson Biological Reserve, and Meyer’s Point Biological Study Site are all facilities within the college. A strong technical services unit provides instrument shops, electronics construction and repair, graphics, and glassblowing. The college shares support and use of several university-wide facilities such as the Laboratories for Bioanalysis and Biotechnology, and the Environmental Research Center.

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

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>Biology, Chemistry, Environmental Science, General Studies, Genetics and Cell Biology, Geology, Mathematics, Microbiology, Physics, Zoology</td>
</tr>
<tr>
<td>Master of Arts</td>
<td>Chemistry, Biochemistry, Biology, Botany</td>
</tr>
<tr>
<td>Master of Science</td>
<td>Chemistry, Environmental Science, Genetics and Cell Biology, Geology, Mathematics, Microbiology, Physics, Zoology</td>
</tr>
<tr>
<td>Master of Regional Planning</td>
<td>Regional Planning</td>
</tr>
<tr>
<td>Doctor of Arts</td>
<td>Mathematics, Biochemistry, Botany, Chemistry</td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Genetics and Cell Biology, 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.

COLLEGE OF VETERINARY MEDICINE

Terry F. McElwain, Interim Dean

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

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

Admission

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

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

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

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

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

A student seeking to enter the four-year program must fill out a VMCAS (veterinary medical college application service) application. VMCAS applications can be obtained from the Office of Student Services, College of Veterinary Medicine, Pullman, WA 99164-7012 and must be completed and returned to the VMCAS office by October 1 of the year preceding the fall semester in which the applicant wishes to enroll. Records of all applicants will be forwarded by VMCAS to the Washington Oregon Idaho (WOI) Admissions committee. The committee, with the approval of the Board of Regents, selects those students to be admitted to the first year of the professional program. Applicants will be notified of their acceptance or denial on or before March 15. Successful applicants who are not currently enrolled at WSU will be asked to fill out a uniform undergraduate application for admission to WSU. Unsuccessful applicants who wish to be considered the next year must present new applications.

In accordance with policies adopted by the Board of Regents, preference for admission to the College of Veterinary Medicine is as follows:

1. To qualified students coming from homes in the states of Washington, Idaho, and Oregon.
2. To qualified students certified and financed by the Western Interstate Commission for Higher Education (WICHE) Compact states.
3. To all other qualified students.

Western Regional Higher Education Compact

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

Students must apply to their home state for certification in addition to making application to the College of Veterinary Medicine, Washington State University. Additional information regarding regional veterinary education may be obtained from, The Executive Director, Western Interstate Commission for Higher Education, P.O. Drawer P, Boulder, CO 80302.

WOI Regional Program in Veterinary Medical Education

Washington State University has agreed to engage in a regional program in veterinary medicine with the University of Idaho and Oregon State University. The regional program involves instruction on the WSU campus, at the Caine Center (UI), and on the Oregon State University campus. Specific quotas of students from Idaho and Oregon have been established under the terms of this agreement.

Degrees

The College of Veterinary Medicine offers courses of study leading to the degrees of Doctor of Veterinary Medicine. Bachelor of Science in Veterinary Science, Bachelor of Science in Neuroscience, Master of Science in Veterinary Science, Master of Science in Neurosciences, and Doctor of Philosophy (Neuroscience and Veterinary Science).
Branch Campuses

WASHINGTON STATE UNIVERSITY AT SPOKANE
William H. Gray, Campus Executive Officer and Dean

Washington State University at Spokane is a full-service urban campus and a primary provider of graduate and research programs for Spokane. Now occupying five floors of its downtown headquarters, the university continues to expand research, public service, and academic opportunities to other locations throughout the Inland Northwest. Partnerships with the Spokane medical community have resulted in research and teaching opportunities with Eastern State Hospital, Deaconess Medical Center, Sacred Heart Medical Center, Veterans Hospital, Kootenai County Medical Center, and Shriners Hospital. WSU computer science and engineering courses are housed at the Spokane Intercolligate Research and Technology Institute (SIRTI), located at the Riverpoint campus.

The WSU Speech and Hearing Sciences Department and EWU's Communication Disorders Department jointly offer diagnostic and rehabilitative services for individuals of all ages with a variety of speech, language, and hearing problems, including problems resulting from brain injury or neuromuscular disability. Fitting of hearing aids, assistive and personal listening devices, auditory training, and lip-reading instruction also are provided. The clinic provides a training center for graduate students from both programs, as well as a service to the community. It is located on the sixth floor of WSU Spokane's downtown headquarters.

WSU Spokane's first specially designed facility at Spokane's Riverpoint Higher Education Park is the Phase 1 Classroom Building. It houses the interdisciplinary Design Institute, a unique collaboration among the design disciplines at WSU. Students and faculty from architecture, construction management, interior design, and landscape architecture work and learn together in a team-oriented, urban environment. Design programs offered in Spokane include the fourth and fifth years of the respective degree programs, and graduate programs in architecture, interior design, and landscape architecture. A Doctor of Design is planned for the end of the decade. Criminal justice and health policy and administration are also housed at Riverpoint, as is the Cooperative Academic Library Services (CALS). CALS serves WSU students in Spokane and Eastern Washington University (EWU) students enrolled in Spokane classes.

Spokane offers a unique educational environment and access to clinical populations for WSU graduate students and researchers. WSU Spokane's research roles are further achieved through the following facilities and other programs, institutes, and projects.

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

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 and Eastern State Hospital. Research activities are intended to improve the care and treatment of mentally ill individuals by determining the effectiveness of new treatment methods and evaluating the impact of changes in public policy.

Education and training activities are directed toward improving the quality and competence of persons providing care and treatment to mentally ill persons. Institute staff conduct research and training in a variety of settings with both providers and consumers of mental health care.

Washington State Institute for Community-Oriented Policing (WSICOP), housed at WSU Spokane, is a partnership between WSU, the Washington Association of Sheriffs and Police Chiefs, and the Washington Criminal Justice Training Commission. WSICOP helps further the mission of community policing by providing training to police officials and community members, by giving technical assistance to law enforcement agencies, and by conducting research on the implementation and effects of community-oriented policing. In addition, WSICOP provides a centralized forum for information sharing and problem solving among community-oriented policing agencies and for dissemination of research findings at state and federal levels.

WSU Spokane's 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), jointly sponsored by WSU and UW, 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 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 are located at SIRTI.

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, electrical engineering, engineering management, health policy and administration, human nutrition, interior design, landscape architecture, mechanical engineering, speech and hearing sciences (communication disorders), and technology management. Course work and internships for student teachers and for experienced educators seeking the superintendent's credential and principal's certification through the College of Education 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 certificate programs in managed care and other specialty areas for professional development.

For details, contact:
Enrollment Services, WSU Spokane
601 West First Avenue
Spokane, Washington 99201-3899
(509) 358-7500
enroll@wsu.edu
www.spuke.spokane.wsu.edu
WASHINGTON STATE UNIVERSITY AT TRI-CITIES

Larry James, Interim Campus Executive Officer and Dean

WSU Tri-Cities in Richland delivers upper-division undergraduate and graduate education to the citizens of the 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, and nursing.

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

Research provided through WSU Tri-Cities responds to the unique needs of the region. Major efforts include the Earth and Environmental Sciences Laboratory, exploring subsurface saturation and flow; 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 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 has been established as 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 Columbia Basin region. WSU Radio and Television Services programming and development for KFAE-FM and KTNW-TV are facilitated through offices and studios on the Tri-Cities campus. The University Center for Professional Education serves thousands of citizens each year with non-credit courses and seminars. Cooperative Extension regional offices and faculty expertise are also housed on this campus. The Yakima Valley/Tri-Cities Mathematics, Engineering, Science Achievement (MESA) program prepares youth in underrepresented groups to pursue education and careers in these fields.

Finally, WSU Business LINKS provides counseling, training and mentoring to emerging and expanding businesses. It also coordinates the Business Information Center.

The Consolidated Information Center, WSU Tri-Cities newest building on campus, merges the WSU Tri-Cities library with the Hanford Technical Library and provides access to the entire WSU library system. It also houses the Department of Energy Reading Room, WSU Tri-Cities Business LINKS, the University Center for Professional Education and Classroom exhibit space.

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

WASHINGTON STATE UNIVERSITY AT VANCOUVER

Harold Dengerink, Campus Executive Officer and Dean

Established specifically to serve the residents of the six-county region of Southwest Washington, Washington State University at Vancouver offers junior, senior, and graduate-level courses to more than 1,500 students. WSU Vancouver has nearly 2,000 alumni, and in 1999 celebrates its ten-year anniversary.

The Programs—WSU Vancouver is located on 351 acres seven miles north of the Portland-Vancouver metropolitan area. Bachelor’s degrees include biology, business, English, environmental science, human development, humanities, manufacturing engineering, natural resource sciences, nursing, psychology, public affairs, and social science. Within those degree programs are more than 20 fields of study, allowing students to concentrate their studies on everything from anthropology to women’s studies.

Master’s degrees include business administration (MBA), education (Ed.M.), engineering management (MEM), public affairs (MPA), nursing (MSN), technology management (MTM), and teaching (MET).

Academic programming is geared to serving the unique needs of the region. For instance, the B.S. in Manufacturing Engineering is the first degree of its kind in the state, developed in response to demonstrated community need for educated engineers to accommodate the region’s growing high-tech industry. Future academic programs include bachelor’s degrees in computer science and electronic communications.

The Campus and Student Life—The campus features four academic buildings, as well as a bookstore, gallery, a food court, and walking/biking paths. Facilities also include engineering, nursing, science, computer, and psychology laboratories, as well as library and fitness facilities.

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

Faculty and Research—With more than 80 full-time, Ph.D. faculty, WSU Vancouver’s academic expertise covers a variety of subjects, with faculty actively involved in research in such areas as global climate change, domestic violence, eating disorders, criminal justice, child psychology, education, public affairs, genetics and many others. Great teaching and an emphasis on individual attention also characterize the WSU Vancouver student experience, with a total student to faculty 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. Some of WSU Vancouver’s community activities include:

The CAT Program: Efforts with Clark College in Vancouver and Lower Columbia College in Longview allow students to enroll through the Cooperative Agreement for Transfer (CAT) during their first year at a community college, with the intention to complete their education 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 and support from local industry supports a cooperative partnership to support science education in the region’s elementary schools. WSU faculty act 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, and energy, air, and land conservation.

For more information about activities and programs contact:
The Office of Admissions, WSU Vancouver
14204 NE Salmon Creek Avenue
Vancouver, WA 98686
(360) 546-WSUV
www.vancouver.wsu.edu
Summary of Academic Policies

Registration
Instructions for registration and policies and procedures for dropping and adding classes are included in the Time Schedule, available in the Registrar’s Office and the Student Book Corporation. See Appendix, Rules 47-69.

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

Enrollment Limit
The average semester credit load for undergraduate students is 15 or 16 credit hours. Students are not normally advised to enroll for more than 18 credit hours. When warranted, students may enroll for credits in excess of this limit. Students will not be allowed to enroll for 20 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 page 19 of this catalog.

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

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

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

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

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

Foreign Students Holding F-1 Visas: The Immigration and Naturalization Service requires that non-immigrant 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 advisor 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. Dropping all courses constitutes withdrawal from the university. See Appendix, Rule 70.

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

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

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

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

Upper-division
Courses numbered 300-399 inclusive are normally taken by juniors and seniors.
Courses numbered 400-499 inclusive are normally taken by juniors and seniors. 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 spreadsheets and databases, 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 prereq of Precalculus Algebra (Math 107), meaning that the student may not enroll for Math 171 until successfully completing Math 107. Prereqs may also be general as: one semester of chemistry or concurrent enrollment. (See Bio S 103.) Concurrent enrollment is indicated by the symbol c/. Prereqs may include a level of expertise or a specified major, e.g., students may not enroll in Spanish 324 without first being fluent in Spanish, or students may not enroll in an advanced seminar before achieving senior standing in the major.

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

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

Field Trip Guidelines
For classes or other instances in which students are expected to participate in field trips, this expectation should be included in the catalog and/or course syllabus. For classes, the reference to the field trip listed in the course syllabus should include any required fees, how travel would be accomplished, alternatives (if any), and the consequences of not participating in the required field trip. When travel is required, the responsible faculty or staff member should arrange for the transportation. If classes are to be missed, the responsible faculty or staff member should also provide the student participants with a statement concerning absence from classes that can be given to the students’ instructors. Transportation can be scheduled through the university motor pool in accordance with section 95.35, Business Policies and Procedures Manual. The university’s liability coverage is provided by Chapter 4.92 of the Revised Code of Washington (RCW). In those instances where students are permitted to drive their own cars and other students are permitted to ride with them, the responsible faculty or staff member, acting as the university’s representative, should request the student drivers to verify that:

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

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

Certification of a Major
An undergraduate may certify an academic major upon completion of 24 semester hours with the approval of the appropriate department chair and notification to the Student Advising and Learning Center.
A student who has completed 60 semester hours 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 advisor and the department chair, and returns the signed documents to the SALC Office. Certified majors who wish to transfer to another academic major do so by requesting, from the Registrar’s Office, a change of major card, and obtaining the approval and signature of the department chairs of the former major and the new major.
Students who satisfy the minimum university requirements plus any departmental core requirements with a 2.0 cumulative g.p.a. are qualified for certification except in those departments which are impacted or must meet special certification standards. Consult the departmental section of this catalog for specific departmental requirements.

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

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

Minor, Second Major, or Second Baccalaureate Degree
A student who has completed 60 semester hours may certify a second major or a minor with the approval of the department concerned. The student should consult with the department concerning hours and grade point requirements and an approved schedule of studies to meet such requirements.
A second major requires completion of departmental requirements for the major exclusive of General Education Requirements. A minor requires a minimum of 16 semester hours, half of which must be in upper-division course work. Upon completion of the requirements, the department will notify the Registrar’s Office, and the minor or second major will be posted on the student’s permanent record (transcript). A list of approved minors is published in the Time Schedule.
A student who desires to complete a second baccalaureate degree shall satisfy the second degree program and college requirements and present not less than 150 semester hours of credit. The first bachelor’s degree, whether at WSU or at another accredited institution, is understood to fulfill all university require-
Grading System

Washington State University uses letter grades and the four-point maximum grading scale. The grade A is the highest possible grade, and grades below D are considered failing. Plus or minus (-) symbols are used to indicate grades that fall above or below the letter grades, but grades of A+ and D- are not used. For purposes of calculating grade points and averages, the plus (+) is equal to .3 and the minus (-) to .7 (e.g., a grade of B+ is equivalent to 3.3, and A- is 3.7). Guidelines for grading may be found in Rule 90, listed in the Appendix.

A–4 grade points per credit hour.
B–3 grade points per credit hour.
C–2 grade points per credit hour.
D–1 grade point per credit hour.
F–no credit; 0 grade points. (Credits attempted are calculated in g.p.a.)

X (Grade Withheld)–no credit or grade points.

Course Credits Grade Grade points
example illustrates computation of the g.p.a.: computed in the Washington State University grade point average. The following F grades are calculated into the g.p.a. Transfer and other nonresident credit is not

A, S, or F grades only are used for physical education activities. Courses approved for S, F grading may also be graded S at midsemester indicating satisfactory progress.

P (Passing)–no credit; 0 grade points. (Credits attempted are calculated in g.p.a.)

S (Satisfactory)–no grade points. (Credit not calculated in g.p.a.)

F grades are calculated into the g.p.a. Transfer and other nonresident credit is not

Midsemester grades are issued to freshmen students with fewer than 24 semester hours of credit. Final grade reports for all students are mailed to the student’s permanent home mailing address at the end of the fall and spring semesters. Only one grade report is produced per student. Students requesting an additional grade report must order a copy of their official transcripts.

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

Grading System

Midsemester grades are issued to freshmen students with fewer than 24 semester hours of credit. Final grade reports for all students are mailed to the student’s permanent home mailing address at the end of the fall and spring semesters. Only one grade report is produced per student. Students requesting an additional grade report must order a copy of their official transcripts.

Transcripts

An official copy of a student’s academic record at Washington State University that bears the official seal of the university and the signature of the Registrar is referred to as a transcript. The transcript must include all work taken at Washington State University. Requests for transcripts must be accompanied by the student’s signature and a $3.85 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.

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 only if there is space available in the course. 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. It is the student’s responsibility to indicate repeat courses at the time of registration. 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 advisor’s ap-
proval 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 F 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 90b) 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. 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 advisor approval may enroll for a total of six courses in the professional curriculum on a pass, fail basis, subject to the regulations listed above. Allowances for transfer students are as follows:

<table>
<thead>
<tr>
<th>Transfer status upon entering WSU</th>
<th>Pass, fail allotment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4 credits</td>
<td>six courses</td>
</tr>
<tr>
<td>45-59 credits</td>
<td>five courses</td>
</tr>
<tr>
<td>60-74 credits</td>
<td>four courses</td>
</tr>
<tr>
<td>75-89 credits</td>
<td>three courses</td>
</tr>
<tr>
<td>90 and above credits</td>
<td>two courses</td>
</tr>
</tbody>
</table>

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

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

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

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

Honors

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

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

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

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

Academic Complaint Procedure

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

Academic Deficiency

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

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

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

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

Decertification

Once certified, a student cannot be decertified by the department unless the student becomes academically deficient under Academic Regulations, Rules 37, 38, or 39. Students decertified under these rules must meet the approved additional criteria for recertification, if any. Some departments and programs may decertify students who fall below the g.p.a. required for certification. See Appendix, Rules 37-43.

Student Rights Regarding Education Records

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

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

Washington State University may release directory information contained in a student’s education records. "Directory information" means information contained in an education record which would not generally be considered harmful or an invasion of privacy if disclosed. Directory information includes name (including any former name), local and permanent addresses, telephone numbers, major and minor fields of study, class, participation in officially recognized activities in sports, weight and height of members of athletic teams, dates of attendance including number of hours enrolled, degrees, certificates, and awards.
received including the President's Honor Roll, and the most recent previous educational institution attended by the student. Students may request that the university not release directory information by filing a request with the Registrar's Office or in the Office of Payroll Services by the tenth day of the semester.

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

Application for Graduation

A student who has (a) completed any of the four-year collegiate curricula, and (b) satisfied the University Requirements for Graduation and any additional departmental or college requirements with a minimum 2.00 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.

Application for a baccalaureate degree or DVM degree should be made at the Registrar's Office near the end of the junior year and at least 60 days prior to the expected graduation date. A graduation application must be on file in the Registrar's Office before a student can graduate. A graduation fee must be paid at the time of application.

Candidates must present a minimum of 120 semester hours of credit for graduation including a minimum of 40 semester hours of credit in upper-division courses and a minimum of 30 hours earned at WSU for a four-year degree. 300-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 listed on page 39. For transfer students, the initial enrollment date shall be that upon which the student entered postsecondary education. Subsequent changes in degree requirements, as published in the catalog or amended by the Faculty Senate, may be substituted at the option of the student.

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

Undergraduates who will not graduate within the normal minimum degree time frame (four years for four-year baccalaureate programs, five for a five-year and six for a six-year program) have a total of eight years in four-year programs and ten in five- and six-year programs to complete their degrees under their original catalog listing of university graduation requirements. Those who take longer to complete their degrees must meet the University and General Education requirements for graduation as published in the catalog four years prior to the date of graduation. In addition, if more than four years elapses between certification and graduation, the major and specific college requirements in place four years prior to graduation will apply.

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

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

Statement of Institutional Responsibility

As a general rule, undergraduate students who are certified majors or graduate degree candidates can assume that a degree will be granted if they maintain continuous enrollment and meet all requirements as listed in Academic Regulations, Rules 114-118. However, because of serious reductions in financial support, loss of faculty, or for other significant reasons, the university may from time to time find it necessary to discontinue a degree program. When this occurs, further admission into the degree program will be frozen effective with the official action dropping the degree, and every effort will be made to allow currently enrolled majors and graduate degree candidates to complete their degrees within a reasonable period of time. To facilitate this process, department and program chairs (or the appropriate dean) have the obligation to provide for the individual needs of these students: e.g., (1) students may be encouraged to complete their requirements in similar or related degree tracks; (2) although University Requirements for Graduation and the minimum total hours for the degree may never be waived, the student’s major department may waive or substitute departmental degree requirements (approval of the Graduate School 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: the Realizing Individual Student Potentials: One purpose of higher education is to foster and nurture potentials in the individual; hence, General Education aims at personal enrichment, cultural awareness, and breadth of knowledge. These goals imply a curriculum that emphasizes the aesthetic and appreciative faculties, encourages experimentation and creativity, and offers opportunities for introspection and the testing of one's own values.

Preparation for Membership in the Community: General Education is also a recognition of the value of higher education within the larger community: it prepares people for their common activities as citizens in a free society. Thus, it should provide opportunities for leadership and service while attending to education for the common life. Shared values growing out of common educational experience help to bind society together and to make communication possible. Consequently, the Gen-
eral 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 foundation 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 Writing Portfolio - Successful performance with the University Writing Portfolio is a requirement for graduation at WSU. Students may satisfy this requirement, which involves submitting three papers from previously assigned class work plus two timed and proctored writing exercises, any time after successfully completing Engl 101 (or equivalent). Students must complete the portfolio no later than the end of the first semester of upper-division standing (upon completion of 60 hours). Transfer students may elect to postpone the portfolio until they have completed at least a semester of work at WSU. For details, consult the Portfolio Office, (509) 335-7959.
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.

Summary of Academic Policies

Appendix, Rules 106-137.
The General Education Program

WSU’s General Education Program 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, 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 capstone 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.

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></th>
</tr>
</thead>
<tbody>
<tr>
<td>World Civilizations [A] GenEd 110 and 111</td>
<td>6</td>
</tr>
<tr>
<td>Written Communication [W]</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics Proficiency [N]</td>
<td>3</td>
</tr>
<tr>
<td>Sciences [Q]</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tier II: 22 semester credit hours</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Proficiency [W], [C]</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities# [H], [G]</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences# [S], [K]</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities/Social Sciences# [H], [G], [S], [K]</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural Studies [I], [G], [K]</td>
<td>3</td>
</tr>
<tr>
<td>Sciences* [B], [P]</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tier III: 3 semester credit hours</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capstone Course</td>
<td>3</td>
</tr>
<tr>
<td>total hours</td>
<td>40</td>
</tr>
</tbody>
</table>

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

It is anticipated that 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.

B. 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 capstone 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.

C. General Education Distribution Requirements

1. World Civilizations [A] — 6 hours (GenEd 110 and 111).
2. 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.
3. 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.
4. 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.
5. 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.
6. Intercultural Studies [I], [G], [K] — 2 hours at Tier II.
7. 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.
8. Capstone course—3 hours at Tier III; capstone courses are 400-level and function as summations of the General Education curriculum. Please note the following:
   1. Capstone courses for General Education credit may not be taken within a student’s own major.
   2. Students may take Tier III capstone 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
D. The Tiers in the General Education Program

Courses satisfying the distribution requirements listed above are organized conceptually in three tiers.

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, the capstone course. Tier III courses are 400-level and have as a general prerequisite 60 hours of course work; there may be additional prerequisites for specific courses.

E. Courses Which Satisfy the Distribution Requirements in General Education

WORLD CIVILIZATIONS
[A] (6 hours)
The World Civilizations Tier I core courses provide an overview of the human past and an introduction to the academic culture of the university. The course work is designed to provide integrated study of the social, political, philosophical, and religious systems of the major world civilizations, along with an introduction to their distinctive art forms.

Tier I
GenEd 110 World Civilizations I
GenEd 111 World Civilizations II

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

W WRITTEN COMMUNICATION PROFICIENCY
Tier I
Engl 101 Introductory Writing
Engl 105 Composition for ESL Students
Engl 198 English Composition Honors

Tier II
Engl 200 Expository Writing
Engl 201 Writing and Research

Tier II Written Communication Proficiency [W] (continued)
Engl 301 Writing and Rhetorical Conventions
Engl 302 Writing About Literature
Engl 402 Technical and Professional Writing
Engl 403 Technical and Professional Writing ESL
Phil 102 Writing and Reasoning

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

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

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

Stat/Math 212 Introduction to Statistical Methods

ARTS AND HUMANITIES
[H, G*] (3-6 hours)
Requirements in the Arts and Humanities may be satisfied by courses (see below) which study of 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/I D/L A 202 The Built Environment
Arch 220 Architectural History I
Arch 221 Architectural History II
Engl 108 Introduction to Literature
Engl 199 English Composition and Literature Honors
Engl 209 Readings in English Literature
Engl 210 Readings in American Literature
Engl/Am St/Hist/W St 216 American Culture
Engl 261 Literary Masterpieces
Engl 305 Shakespeare
Engl 306 Shakespeare
Engl 308/W St 306 Introduction to Literary Criticism
Engl/W St 309 Women Writers
Engl/Hum 335 The Bible as Literature
Engl 366 The English Novel to 1900
Engl 368 The American Novel to 1900

40
Tier II Arts and Humanities [H] (continued)

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA 101</td>
<td>Introduction to Art</td>
<td>FA 201</td>
<td>World Art History</td>
</tr>
<tr>
<td>FA 201</td>
<td>World Art History</td>
<td>FA 202</td>
<td>World Art History</td>
</tr>
<tr>
<td>FA 303</td>
<td>Modern Art—19th Century</td>
<td>FA 304</td>
<td>Modern Art—20th Century</td>
</tr>
<tr>
<td>FA/W St 308</td>
<td>Women Artists I, Middle Ages-1900</td>
<td>Fren 315</td>
<td>French Civilization and Culture</td>
</tr>
<tr>
<td>Fren 320</td>
<td>Survey of French Literature to 1700</td>
<td>Fren 322</td>
<td>Survey of French Literature after 1700</td>
</tr>
<tr>
<td>Ger 315</td>
<td>Germanic Civilization</td>
<td>Hist 101</td>
<td>Classical and Christian Europe</td>
</tr>
<tr>
<td>Hist 102</td>
<td>Modern Europe</td>
<td>Hist 340</td>
<td>Ancient Greece</td>
</tr>
<tr>
<td>Hist 341</td>
<td>Rome: Republic and Empire</td>
<td>Hist 342</td>
<td>History of England to 1485</td>
</tr>
<tr>
<td>Hist 343</td>
<td>History of England Since 1485</td>
<td>Hum 101</td>
<td>Humanities in the Ancient World</td>
</tr>
<tr>
<td>Hum 103</td>
<td>Mythology</td>
<td>Hum 198</td>
<td>Humanities in the Ancient World: Honors</td>
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<tr>
<td>Hum 302</td>
<td>Humanities in the Middle Ages and Renaissance</td>
<td>Hum 303</td>
<td>Reason, Romanticism, and Revolution</td>
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<tr>
<td>Hum 340</td>
<td>American Foundings</td>
<td>Mus 153</td>
<td>Musical Style in Composition</td>
</tr>
<tr>
<td>Mus 160</td>
<td>Survey of Music Literature</td>
<td>Mus 362</td>
<td>History of Jazz</td>
</tr>
<tr>
<td>Phil 101</td>
<td>Introduction to Philosophy</td>
<td>Phil 198</td>
<td>Philosophy Honors</td>
</tr>
<tr>
<td>Phil 201</td>
<td>Elementary Logic</td>
<td>Phil 207</td>
<td>Philosophy of Religion</td>
</tr>
<tr>
<td>Phil 220</td>
<td>Aesthetics</td>
<td>Phil 260</td>
<td>Introduction to Ethics</td>
</tr>
<tr>
<td>Phil 290</td>
<td>History of Ancient and Medieval Philosophy</td>
<td>Phil 305</td>
<td>History of Modern Philosophy</td>
</tr>
<tr>
<td>Phil 310</td>
<td>Nineteenth-century Philosophy</td>
<td>Phil 350</td>
<td>Philosophy of Science</td>
</tr>
<tr>
<td>Phil 365</td>
<td>Biomedical Ethics</td>
<td>Phil 370</td>
<td>Environmental Ethics</td>
</tr>
<tr>
<td>Russ 323</td>
<td>Masterpieces of Russian Literature in Translation</td>
<td>Russ 360</td>
<td>Russian Film</td>
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<tr>
<td>Scand 323</td>
<td>Masterpieces of Scandinavian Literature in Translation</td>
<td></td>
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<tr>
<td>Span 315</td>
<td>Hispanic Civilization</td>
<td>Theat 160</td>
<td>Introduction to Theatre</td>
</tr>
<tr>
<td>Theat 365</td>
<td>Theatre History I: Beginnings to 1700</td>
<td>Theat 366</td>
<td>Theatre History II: 1700 to 1900</td>
</tr>
<tr>
<td>Theat 367</td>
<td>Musical Theatre</td>
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</table>

Tier II Social Sciences [S]

<table>
<thead>
<tr>
<th>Code</th>
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<th>Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>Ag Ec 201</td>
<td>Economics in Agriculture</td>
<td>Ag Ec/Hist 320</td>
<td>American Agriculture and Rural Life</td>
</tr>
<tr>
<td>Anth 101</td>
<td>General Anthropology</td>
<td>Anth 198</td>
<td>Anthropology Honors</td>
</tr>
<tr>
<td>Anth 330</td>
<td>Origins of Culture and Civilization</td>
<td>Anth/For L 350</td>
<td>Speech, Thought and Culture</td>
</tr>
<tr>
<td>CAC 335/Hist 313</td>
<td>Civil Rights Movement in America</td>
<td>Com 101</td>
<td>Mass Communications and Society</td>
</tr>
<tr>
<td>Econ 101</td>
<td>Fundamentals of Microeconomics</td>
<td>Econ 102</td>
<td>Fundamentals of Macroeconomics</td>
</tr>
<tr>
<td>Econ 198</td>
<td>Economics Honors</td>
<td>Ger 317</td>
<td>Contemporary German Culture and Society</td>
</tr>
<tr>
<td>Hist 100</td>
<td>American History to 1877</td>
<td>Hist 111</td>
<td>American History Since 1877</td>
</tr>
<tr>
<td>Hist 198</td>
<td>History Honors</td>
<td>Hist/W St 298</td>
<td>History of Women in American Society</td>
</tr>
<tr>
<td>Hist/W St 350</td>
<td>European Women’s History, 1400-1800</td>
<td>Hist/W St 380</td>
<td>History of Medicine</td>
</tr>
<tr>
<td>Hist 381</td>
<td>Science in Western Civilization Through Newton</td>
<td>Hist 382</td>
<td>Science in Western Civilization from Newton to Einstein</td>
</tr>
</tbody>
</table>

SPECIAL SCIENCES

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

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

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Anth 201</td>
<td>Art and Society</td>
<td>CAC 151</td>
<td>Introduction to Chicano Studies</td>
</tr>
<tr>
<td>CAC 171</td>
<td>Introduction to Native American Studies</td>
<td>CAC 313/Engl 311</td>
<td>Asian Pacific/American Literature</td>
</tr>
<tr>
<td>CAC 313/Engl 321</td>
<td>African American Literature</td>
<td>CAC 353/Engl 345</td>
<td>Chicano/Chicana Literature</td>
</tr>
<tr>
<td>CAC 373/Engl 341</td>
<td>Native American Literature</td>
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</tr>
</tbody>
</table>

Tier II Arts and Humanities or Intercultural Studies [G]

<table>
<thead>
<tr>
<th>Code</th>
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<th>Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anth 201</td>
<td>Art and Society</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAC 151</td>
<td>Introduction to Chicano Studies</td>
<td>CAC 171</td>
<td>Introduction to Native American Studies</td>
</tr>
<tr>
<td>CAC 313/Engl 311</td>
<td>Asian Pacific/American Literature</td>
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<td></td>
</tr>
<tr>
<td>CAC 313/Engl 321</td>
<td>African American Literature</td>
<td>CAC 353/Engl 345</td>
<td>Chicano/Chicana Literature</td>
</tr>
<tr>
<td>CAC 373/Engl 341</td>
<td>Native American Literature</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tier II Social Sciences [S] (continued)

Phar/W St 250 The American Health Care System
Pol S 101 American National Government
Pol S 102 Introduction to Comparative Politics
Pol S 103 International Politics
Pol S 198 Political Science Honors
Pol S/W St 305 Gender and Politics
Pol S 333 Development of Marxist Thought
Psych 105 Introductory Psychology
Psych 198 Psychology Honors
Psych/W St 324 Psychology of Women
Psych/Soc 350 Social Psychology
R S 334 Principles of Community Development
R S 335 Cross-National Perspectives on Community
SHS 250 Perspectives on Disability
Soc 101 Introduction to Sociology
Soc 102 Social Problems
Soc 198 Introduction to Sociology Honors
Soc 315 Ecology of Human Societies
Soc 331 Population, Resources, and the Future
Soc 340 Social Inequality
Soc 341 Sociology of Religion
Soc/W St 351 The Family
Soc 360 Theories of Deviance
Soc 373 Media, Culture, and Society
Soc/W St 384 Sociology of Gender
W St 200 Introduction to Women Studies
W St 204 Family Systems: Understanding Family Interactions
W St/CAC/Soc 300 Intersections of Race, Class and Gender

Tier II Social Sciences or Intercultural Studies [K]

Anh 203/CAC 212 Peoples of the World
Anh 302 Childhood and Culture
Anh/Asia/His 306 Cultures and Peoples of the Middle East
Anh 307 Contemporary Cultures and Peoples of Africa
Anh 309 Cultural Ecology
Anh/W St 316 Gender in Cross Cultural Perspective
Anh 320/CAC 377 Native Peoples of North America
Anh 331/CAC 376 America Before Columbus
CAC 211/His 201 Asian Pacific/American History
Hist 230 Latin America, The Colonial Period
Hist 231 Latin America, The National Period
Hist/Asia 270 Introduction to South Asian Culture
Hist/Asia 275/CAC 217 Introduction to East Asian Culture
Hist 308/CAC 375 North American Indian History, Precontact to Present
Hist 331 Cultural History in Latin America
W St 220 Women, Science, and Culture

INTERN CULTURAL STUDIES

L, 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]

Anh 130 Great Discoveries in Archaeology
Anh 201 [G] Art and Society
Anh 203/CAC 212 [K] Peoples of the World
Anh 302 [K] Childhood and Culture
Anh/Asia/Hist 306 [K] Cultures and Peoples of the Middle East
Anh 307 [K] Contemporary Cultures and Peoples of Africa
Anh 309 [K] Cultural Ecology
Anh/W St 316 [K] Gender in Cross Cultural Perspective
Anh 320/CAC 377 [K] Native Peoples of North America
Anh 331/CAC 376 [K] America Before Columbus
CAC 101 Introduction to Comparative American Cultures
CAC 111 Introduction to Asian/Pacific American Studies
CAC 131 Introduction to Black Studies
CAC 151 [G] Introduction to Chicano Studies
CAC 171 [G] Introduction to Native American Studies
CAC 211/His 201 [K] Introduction to Asian American History
CAC 227 Introduction to African Studies
CAC 235/Hist 205/W St 235 African American History
CAC 313/Eng 311 [G] Asian Pacific/American Literature
CAC 331/Eng 321 [G] African American Literature
CAC 353/Eng 345 [G] Chicano/Chicana Literature
CAC 373/Eng 341 [G] Native American Literature
Com 321 Intercultural Communication
CropS/SoilS 360 World Agricultural Systems
Engl 222 [G] World Literature in English
FA 301 [G] The Art of Africa, Native America, and the Pacific
FA/Asia 302 [G] The Arts of Asia
Fren 316 French Civilization and the Francophone World
GenEd 200 Studying World Civilizations Abroad
Hist 230 [K] Latin America, The Colonial Period
Hist 231 [K] Latin America, The National Period
Hist/Asia 270 [K] Introduction to South Asian Culture
Hist/Asia 272 Introduction to Middle Eastern History
Hist/Asia 273 [G] Foundations of Islamic Civilization
Hist/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/Asia 370 [G] Civilization of Classical India
Hist/Asia 373 [G] Chinese Civilization
Hist/Asia 374 [G] Japanese Civilization
Mus 265/CAC 271 [G] Native Music of North America
Mus/W St 363 [G] Women and Music
Phil/Asia 314 [G] Philosophies and Religions of India
Phil/Asia 315 [G] Philosophies and Religions of China and Japan
<table>
<thead>
<tr>
<th>Tier II</th>
<th>Intercultural Studies [I,G,K] (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pol S 324/CAC 339</td>
<td>Black Politics</td>
</tr>
<tr>
<td>Rus 317 [G]</td>
<td>Contemporary Russian Culture and Society</td>
</tr>
<tr>
<td>Span 316 [G]</td>
<td>Hispanic American Culture</td>
</tr>
<tr>
<td>Theat 145 [G]</td>
<td>Contemporary World Theatre</td>
</tr>
<tr>
<td>W St 220 [K]</td>
<td>Women, Science, and Culture</td>
</tr>
</tbody>
</table>

**SCIENCES**

[Q*, B, P] (10 hours)

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

(L) designates courses which include laboratory work.

*{Q} designates Tier I science courses.

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

**Tier I [Q]**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>Astr 150</td>
<td>Science and the Universe</td>
</tr>
<tr>
<td>Chem 150</td>
<td>Molecules and Science</td>
</tr>
<tr>
<td>ES/RP 150</td>
<td>Natural Science in the Environment</td>
</tr>
<tr>
<td>GenCB 150</td>
<td>Genetics and Society</td>
</tr>
<tr>
<td>Hort 150</td>
<td>The Science of Gardening</td>
</tr>
<tr>
<td>Geol 150</td>
<td>Conflict and Debate in Geological Sciences</td>
</tr>
<tr>
<td>Phys 150</td>
<td>Physics and Your World</td>
</tr>
<tr>
<td>Zool 150</td>
<td>Evolution</td>
</tr>
</tbody>
</table>

**B BIOLOGICAL SCIENCES (Tier II)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>Anth 260</td>
<td>Introduction to Physical Anthropology</td>
</tr>
<tr>
<td>Bio S 101</td>
<td>Direction in Biological Sciences</td>
</tr>
<tr>
<td>Bio S 102(L)</td>
<td>General Biology</td>
</tr>
<tr>
<td>Bio S 103(L)</td>
<td>Introductory Biology</td>
</tr>
<tr>
<td>Bio S 104(L)</td>
<td>Introductory Biology</td>
</tr>
<tr>
<td>Bio S 105(L)</td>
<td>Biological Science Laboratory</td>
</tr>
<tr>
<td>Bio S 201</td>
<td>Contemporary Biology</td>
</tr>
<tr>
<td>Bio S 298(L)</td>
<td>Biological Science Honors</td>
</tr>
<tr>
<td>Bot 120(L)</td>
<td>Introduction to Botany</td>
</tr>
<tr>
<td>Entom 101</td>
<td>Insects and People: A Perspective</td>
</tr>
<tr>
<td>ES/RP 101</td>
<td>The Environment and Human Life</td>
</tr>
<tr>
<td>FSHN 130</td>
<td>Nutrition for Living</td>
</tr>
<tr>
<td>Micro 101(L)</td>
<td>Introductory Microbiology</td>
</tr>
<tr>
<td>Micro 105(L)</td>
<td>Introductory Microbiology Laboratory</td>
</tr>
<tr>
<td>NATRS 303</td>
<td>Conservation of Renewable Resources</td>
</tr>
<tr>
<td>Psych 372</td>
<td>Introduction to Physiological Psychology</td>
</tr>
<tr>
<td>SoilS 201</td>
<td>Soil: A Living System</td>
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<tr>
<td>Zool 135</td>
<td>Animal Natural History</td>
</tr>
<tr>
<td>Zool 330</td>
<td>Principles of Conservation</td>
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</table>

**P PHYSICAL SCIENCES (Tier II)**

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<tr>
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<tbody>
<tr>
<td>Astr 135</td>
<td>Descriptive Astronomy</td>
</tr>
<tr>
<td>Astr/Phys 345</td>
<td>Principles of Astronomy</td>
</tr>
<tr>
<td>Astr 390(L)</td>
<td>The Night Sky</td>
</tr>
<tr>
<td>Chem 101(L)</td>
<td>Introduction to Chemistry</td>
</tr>
<tr>
<td>Chem 102(L)</td>
<td>Chemistry Related to Life Sciences</td>
</tr>
<tr>
<td>Chem 105(L)</td>
<td>Principles of Chemistry I</td>
</tr>
<tr>
<td>Chem 106(L)</td>
<td>Principles of Chemistry II</td>
</tr>
<tr>
<td>Chem 350(L)</td>
<td>Chemistry in Contemporary Society</td>
</tr>
<tr>
<td>Geol 101(L)</td>
<td>Introduction to Geology</td>
</tr>
<tr>
<td>Geol 102(L)</td>
<td>Physical Geology</td>
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<tr>
<td>Geol 180(L)</td>
<td>Honors Geology</td>
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<tr>
<td>Geol 210(L)</td>
<td>Evolution and Earth History</td>
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<tr>
<td>Geol 322</td>
<td>Geology of the Pacific Northwest</td>
</tr>
<tr>
<td>Geol 323(L)</td>
<td>Geology of the Pacific Northwest</td>
</tr>
<tr>
<td>Phys 101(L)</td>
<td>General Physics</td>
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<td>Phys 102(L)</td>
<td>General Physics</td>
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<td>Phys 201(L)</td>
<td>Physics for Scientists and Engineers</td>
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<td>Phys 202(L)</td>
<td>Physics for Scientists and Engineers</td>
</tr>
<tr>
<td>Phys 205(L)</td>
<td>Physics for Scientists and Engineers I - Honors</td>
</tr>
<tr>
<td>Phys 206(L)</td>
<td>Physics for Scientists and Engineers II - Honors</td>
</tr>
<tr>
<td>Phys 380</td>
<td>Physics and Society</td>
</tr>
</tbody>
</table>
NOTICE: Students are no longer required to take the Tier III Capstone course within an Area of Coherence.

TIER III CAPSTONE COURSES

[T] (3 hours)

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

Many of the capstone 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.

CAPSTONE 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 The Search for Extraterrestrial Life
Bio S 401 Plants and People
(Crereq Bio S 102, 104, or Bot 120)
C E 401 Global Climate Change
Entom 401 Invertebrates in Biological Thought
(Crereq Bio S 104; Rec Zool 150)
FSHN 444 Applied Nutrition in Health Science
(Crereq biology, chemistry, sociology/psychology)
GenCB 455 The Logic of Life
MSE 440 Materials: The Foundation of Society and Technology
PharP 483 Human Body Systems
(Crereq FSHN 130 or Micro 101; introductory biology)
Zool/W St 407 Biology of Women
(Crereq Bio S 102, 103, or 298; junior standing)

CAPSTONE COURSES USING SOCIAL SCIENCE METHODS

These capstone 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.

Anth 404 The Self in Culture
(Prereq 100-level Anth, Psych or Soc)
Anth 405 Medical Anthropology
Anth 417 Anthropology and World Problems
(Prereq 3 hours Anth)
Anth 468 Sex, Evolution, and Human Nature
(Prereq 3 hours Anth or Bio S)
CAC 405/Engl 410 Cultural Criticism and Theory
CAC 439/Pol S 474 African Politics
CAC 440 Social Justice and American Culture
CAC/W St 454 La Chicana in US Society
(Crereq junior standing)
CAC 470 Federal Native American Resource Settlement Models
Cpt S 401 Computers and Society
(Prereq Cpt S 105, 150, 153, 203, 241, or 251; Phil 260 or Soc 101)
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/Asia 470 Gandhi: India and the United States
Hist 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
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)
SHS 489 Disability and Society
Soc 415 Ecology of Human Societies
(Prereq Anth 101 or Soc 101; ES/RP 101)
Soc 430 Society and Technology
### Tier III  Capstone Courses Using Social Science Methods (continued)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soc 433</td>
<td>Urbanization and Community Organization</td>
<td>(Prereq 3 credits 300-400-level social science)</td>
</tr>
<tr>
<td>Soc 442</td>
<td>Political Sociology</td>
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</tr>
<tr>
<td>Soc/Psych 455</td>
<td>Human Values</td>
<td>(Prereq Psych 105 or Soc 101; Psych 350)</td>
</tr>
<tr>
<td>Soc 474</td>
<td>Collective Behavior and Social Movements</td>
<td>(Prereq three 300-400-level Soc or Pol S courses)</td>
</tr>
<tr>
<td>W St 406</td>
<td>Women and Work</td>
<td>(Prereq W St 200)</td>
</tr>
<tr>
<td>W St 460</td>
<td>Gender, Race, and Nature in America</td>
<td>(Prereq W St 200 or 300)</td>
</tr>
<tr>
<td>W St/Soc 484</td>
<td>Lesbian and Gay Studies</td>
<td>(Prereq Soc 101, 102, or W St 200)</td>
</tr>
</tbody>
</table>

### COURSES EMPLOYING THE METHODS OF THE ARTS AND HUMANITIES

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Am St/Engl 471</td>
<td>Cultural Politics Since World War II</td>
</tr>
<tr>
<td>Am St/Engl 472</td>
<td>Ecological Issues and American Nature Writing</td>
</tr>
<tr>
<td>Engl/W St 409</td>
<td>Women Writers in the American West</td>
</tr>
<tr>
<td>Engl 415</td>
<td>Traditions of Comedy and Tragedy</td>
</tr>
<tr>
<td>Engl 419</td>
<td>The Twentieth Century Novel</td>
</tr>
<tr>
<td>For L 422</td>
<td>Twentieth-Century Issues in German and Latin American Film and Literature</td>
</tr>
<tr>
<td>Hum 410</td>
<td>Love in the Arts</td>
</tr>
<tr>
<td>Phil 430</td>
<td>Philosophy of Art</td>
</tr>
<tr>
<td>Phil 435</td>
<td>East/West Philosophy of Architecture</td>
</tr>
<tr>
<td>Phil 440</td>
<td>Mind of God and the Book of Nature: Science and Religion (Prereq completion of science General Education Requirements)</td>
</tr>
<tr>
<td>Rus 430</td>
<td>St. Petersburg</td>
</tr>
</tbody>
</table>
Aero 101, 102, 201, 202, 311, 312, 411, 412. hours, half of which must be 300-400-level, from:

able for a $1,000 per semester scholarship as long
POC, not already awarded a scholarship, are eli-
years. The GMC sequence prepares the
in the helping services, health sciences, 
(4) To further university and societal goals of 
equity for persons of all ages.

The program offers a minor in aging. The minor 
requisite courses available from the program 
chair. Students must obtain approval of 
program selection from the program chair. To 
contact the program chair, J.D. Teachman at (509) 
335-9540.

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

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.
Department of Agricultural Economics


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

Bachelor’s Program

The undergraduate programs are designed to provide the basic knowledge and tools necessary to secure professional positions in agriculture and agribusiness. The various curricula are structured to lead to different professional careers. Agricultural economics deals with economic issues related to food and fiber supply and demand and the natural resource base that supports agricultural production and other needs of society. Applications to public decision making and private decisions of farms, ranches and agribusinesses are considered. Agribusiness deals more specifically with the business management activities of firms which move agricultural products to final consumers and provide production inputs, such as fertilizer and money, to farms and ranches.

In agricultural economics, students learn to use economic concepts along with technical production information to solve problems of farms, ranches, and related organizations. They also obtain knowledge and skills relevant to solving broader economic and social problems facing production agriculture and society in general.

In agribusiness, students learn to use economic and business concepts and management tools to effectively function in firms and organizations that comprise the agribusiness sector. Knowledge and skills in management, marketing, and finance are developed with emphasis on the specialized requirements of the agribusiness community.

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

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

A wide variety of courses is available to non-majors who want to take selected courses to support their programs in other departments. Students from other departments may declare a minor in agricultural economics or agribusiness.

Employment Opportunities

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

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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

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

FIRST YEAR REQUIREMENTS

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

Freshman Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
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<tr>
<td>Ag Ec 201 [S] (GER)</td>
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<tr>
<td>Econ 102 [S] (GER)</td>
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<tr>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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<table>
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<tbody>
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<tr>
<td>Ag Ec 210</td>
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<td>Biological Sciences [B] (GER)</td>
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<td>ComSt 102 [C], 235 [C], 302 [C]. or 324 [C] (GER)</td>
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Sophomore Year

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<td>Ag Ec 231</td>
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<tr>
<td>Ag Ec 340</td>
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<td>Arts &amp; Humanities [H, G] (GER)</td>
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<td>Intercultural [I, G, K] (GER)</td>
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<td>Physical Sciences (GER)</td>
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<table>
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<td>Dec S 215 or Stat 212 [N] (GER)</td>
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<td>Math 201</td>
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Junior Year

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<td>Ag Ec 370</td>
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<td>Communication Skills Elective</td>
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<tr>
<td>Math 202 [N] (GER)</td>
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<td>Mgt 301</td>
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<td>Mktg 360</td>
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<td>Complete Writing Portfolio</td>
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<table>
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<th>Second Semester</th>
<th>Hours</th>
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<tr>
<td>Acctg, Mgt, or Mktg Elective</td>
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<td>Ag Ec 360</td>
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<td>Ag Elective</td>
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<td>Ag Elective</td>
<td>3 or 4</td>
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<td>Econ 302</td>
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Senior Year

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<th>Hours</th>
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</thead>
<tbody>
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<td>First Semester</td>
<td></td>
</tr>
<tr>
<td>Ag Ec 430</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ec 460 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ec Elective</td>
<td>3</td>
</tr>
<tr>
<td>Ag Elective</td>
<td>3 or 4</td>
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<tr>
<td>Econ 320</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
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<td>Ag Ec 410, 411, or Dec S 340</td>
<td>3 or 4</td>
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<tr>
<td>Ag Ec 450 [M]</td>
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<tr>
<td>Engl 402 [W] (GER)</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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</tr>
<tr>
<td>Elective</td>
<td>2</td>
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</tbody>
</table>

1. All three science GER courses must total 10 credits.
2. Excluding Ag Ec courses.

AGRICULTURAL ECONOMICS DEGREE PROGRAMS

AGRICULTURAL PRODUCTION AND RESOURCE MANAGEMENT DEGREE PROGRAM (120 HOURS) [FYDA]

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

Sophomore Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
</tr>
<tr>
<td>Ag Ec 340</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H, G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Intercultural [I, G, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>
### Junior Year

**First Semester**
- Ag Ec 311, 350, 360, or 370 6
- Communication Skills Elective 3
- Math 107, 140 [N] (GER), 171 [N] (GER), 201, 202 [N] (GER), or 220 3 or 4
- Elective 3
- Complete Writing Portfolio

**Second Semester**
- Ag Electives 3
- Econ 300-level Elective 3
- Econ 301 or 302 3
- Social Sciences [S,K] (GER) 3

### Senior Year

**First Semester**
- 400-level Ag Ec Elective 3
- Ag Ec 320, 435, 490 [M], B Law 210 3
- Ag Electives 3
- Elective 6

**Second Semester**
- Ag Ec 430, 440 [M], 450 [M], 460 [M], or 480 [M] 3
- Ag Ec Elective 3
- Engl 402 [W] (GER) 3
- Tier III Capstone (GER) 3
- Elective 3

---

1. All three science GER courses must total 10 credits.
2. Excluding Ag Ec courses.

### 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, 440; 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 advisors 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.
- **Management Applications of Microcomputers in Agriculture and Home Economics 3** (1-6) Microcomputer systems and software including database management, spreadsheets, and word processing.
- **Natural Resource Economics 3** Rec Ag Ec 201 or Econ 101. The role of economics in natural resource management and policy.
- **American Agriculture and Rural Life 3** History and economic structure of American agriculture, land settlement, organizational nature of firms, technology, and patterns in rural life.
- **Introduction to Farm and Ranch Management 3** Rec Ag Ec 201 or Econ 101. Appreciation, 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 agribusiness firms.
- **Farm and Natural Resources Appraisal 3** Rec Ag Ec 340, Econ 101, 102. Factors affecting value of land; valuation for loans, sales, assessment, and condemnation. Field trips required. Cooperative course taught by UI (AgEc 361), open to WSU students.
- **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.
- **International Agriculture and Economic Development 3** Rec Ag Ec 201 or Econ 101. Nature and roles of agricultural development, trade and institutions.
- **Economic Analysis of Projects and Policies 3** Rec 300-level course in Ag Ec or Econ. Principles and procedures for evaluating projects and policies using cost-benefit analysis and related economic approaches.
- **Financing Agribusiness Firms 3** Rec Acctg 231, Ag Ec 201, Stat course. Financial management, decision making, and analysis in the agribusiness sectors; capital market institutions and valuation processes.
435 Natural Resource Law 3 Rec Ag Ec 201. Analysis of federal and state courts resolution of real-world conflicts in land and water use.

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

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


460 [M] Advanced Agribusiness Management 3 Rec Acctg course, Ag Ec 360, Econ 301. Alternatives in the market behavior of firms that handle, process, and trade in agricultural inputs and outputs.

480 [M] Resource Economics 3 Rec 300-level course in Ag Ec or Econ. Economic principles applied to natural resource problems, issues, and policies.

490 [M] Agricultural Policy 3 Rec Ag Ec 201 or Econ 101. Public policy issues related to commercial agriculture and rural areas. Credit not granted for both Ag Ec 490 and 590.

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

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

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

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

502 Economics of Public Choice in Agriculture and Natural Resources 3 Rec Econ 401, 501. Basic concepts of economics of public choice and their application to public policy in agriculture, rural areas and natural resources.

503 Agricultural Demand and Supply Systems 3 Rec Econ 501. Microeconomic duality theory applied to agricultural firms, consumers, and agricultural markets.

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

510 Statistics for Economists 4 Rec Ag Ec 408. Statistical theory underlying econometric techniques utilized in quantitative analysis of agricultural economic problems.

511 Linear and Nonlinear Programming in Agricultural Economics 3 Rec Ag Ec 408, 411. Mathematical programming applications of duality, parametric programming, inverse matrix methods, transportation problems, game theory, quadratic, integer, separable, and dynamic programming.

512 Advanced Agricultural Econometrics 3 Rec Ag Ec 510. Model construction and estimation for analysis of agricultural supply and demand problems.

513 Advanced Econometric Application 3 Rec graduate-level econometrics course. Theory and computer implementation of advanced econometric techniques.

520 Regional Economics 3 Rec Econ 301, 401, Math 201. The construction of multisector economic models and their use in regional policy analysis. Cooperative course taught by WSU, open to UI students (Ag Ec 520).

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

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

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

541 Agricultural Decision Analysis 3 Rec Ag Ec 540 or Econ 501. Alternative theories and methodologies for dealing with risk and dynamics in economic and resource management decisions.

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

551 Modeling Agricultural Commodity Markets 3 Theoretical and applied issues in constructing models of agricultural commodity markets for analysis.

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

580 Advanced Resource Economics 3 Rec Econ 501. Economic analysis of the allocation and use of environmental and natural resources.

581 Advanced Topics in Resource Economics 3 Rec Ag Ec 580. Theoretical underpinnings of advanced topics in resource economics.

597 Agribusiness Internship V 2-4 May be repeated for credit; cumulative maximum 8 hours. Off-campus student work-study in the agribusiness industry. S, F grading.

590 Agricultural Policy 3 Prereq graduate standing. Graduate-level counterpart of Ag Ec 490; additional requirements. Credit not granted for both Ag Ec 490 and 590.

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 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 multifacial, multithetic, 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 Program in Women’s Studies and the Department of Comparative American Cultures. We also draw faculty from Anthropology, Communications, Fine Arts, Environmental 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; nationalisms and U. S. identities; the arts, culture, and social change; culture and environmental studies; mass media 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. 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.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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 fulfill 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 this list. By designing their own programs and taking courses that will aid in their research, students can investigate the effects of agriculture, engineering, education, architecture, folklore, theatre, or mass communications, to name only a few, on American culture.

**AMERICAN STUDIES DEGREE PROGRAM**

**FYDA**

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tr>
<td></td>
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**Second Semester**

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<tr>
<td></td>
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**Sophomore Year**

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<th>First Semester</th>
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**Second Semester**

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**Junior Year**

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<td>Complete Writing Portfolio</td>
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**Second Semester**

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

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<th>Hours</th>
<th>300-400-level CAC or W St Elective</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One from: Am St 470, 471, or 472</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elective</td>
<td>4</td>
</tr>
</tbody>
</table>

| Second Semester | Hours | 300-400-level American Hist Elective | 3 |

**Major Concentration Area Electives¹ 6**

1. Students may substitute one 4-credit Tier I Science for both the 3-credit Tier I Science and the 1 credit Science Elective.

2. Students must have one year of a foreign language if two years were not completed in high school.

Consult your advisor about courses for the 12 credit hours of major concentration area electives.

**Minor in American Studies**

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

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

**Preparation for Graduate Study**

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

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

**Description of Courses**

**American Studies**

**Am St 216 [H] American Culture**| 3 Same as Engl 216. |

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

**470 Culture of the American West**| 3 May be repeated for credit; cumulative maximum 6 hours. Same as Engl 470. |

**471 [H] 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 Prerequisite completion of one Tier I and three Tier II courses. Representation of nature in American fiction and nonfiction; role of culture in shaping environmental problems and solutions. |

**496 Topics in American Studies**| 3 May be repeated for credit; cumulative maximum 9 hours. Same as Engl 496 and 596. |

**500 Colloquium**| 1 May be repeated for credit; cumulative maximum 12 hours. Current research in American studies. |

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

**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.

### Degree Program Requirements

**Honors students complete Honors Requirements in place of General Education Requirements.**

At least 40 of the total hours required for the bachelor’s degree in this program must be in 300-400-level courses. One of the following degree programs must be chosen and completed.

**INDUSTRY DEGREE PROGRAM (121 HOURS) [FYDA]**

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td>A S 101</td>
<td>3</td>
</tr>
<tr>
<td>A S 180</td>
<td>1</td>
</tr>
<tr>
<td>Chem 101 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107, 140 [N], 171 [N], 201, or 202 [N] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td>A S 166, 172, 174, 175, 176, or 178</td>
<td>2</td>
</tr>
<tr>
<td>Bio S 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 102 [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>GenEd 110 or 111 [A] (GER)</td>
<td>3</td>
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</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A S 260, 272, or 360</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ec 201 [S] or Econ 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>V MS 261</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 210 or Cpt S 405</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>Intercultural [H,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 201</td>
<td>3</td>
</tr>
<tr>
<td>Stat 212 [N] (GER) or 412</td>
<td>3</td>
</tr>
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</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A S 313</td>
<td>4</td>
</tr>
<tr>
<td>Acctg 230</td>
<td>3</td>
</tr>
<tr>
<td>Ag Ec 335 or B Law 210</td>
<td>3</td>
</tr>
<tr>
<td>CropS 101, 302, 303, or NATRS 351</td>
<td>3</td>
</tr>
<tr>
<td>Engl 201 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A S 314</td>
<td>3</td>
</tr>
<tr>
<td>A S 330</td>
<td>3</td>
</tr>
<tr>
<td>A S 350</td>
<td>3</td>
</tr>
<tr>
<td>A S 351</td>
<td>1</td>
</tr>
<tr>
<td>A S 380</td>
<td>1</td>
</tr>
<tr>
<td>Ag Ec 340</td>
<td>3</td>
</tr>
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</table>

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A S 285, 488, CropS 302, 303, or NATRS 351</td>
<td>3</td>
</tr>
<tr>
<td>A S 406 [M]</td>
<td>3</td>
</tr>
<tr>
<td>A S 440</td>
<td>3</td>
</tr>
<tr>
<td>A S 454</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A S 408 [M]</td>
<td>3</td>
</tr>
<tr>
<td>A S 466, 468, 472, 474 [M], 476, or 478 [M]</td>
<td>3</td>
</tr>
<tr>
<td>A S 488 [M] or NATRS 351</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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<td>3</td>
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**SECOND SEMESTER**

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

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

### PRODUCTION MANAGEMENT DEGREE PROGRAM (121 HOURS) [FYDA]

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td>A S 101</td>
<td>4</td>
</tr>
<tr>
<td>A S 166 or 181</td>
<td>1</td>
</tr>
<tr>
<td>A S 180</td>
<td>1</td>
</tr>
<tr>
<td>Chem 101 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107, 140 [N], 171 [N], 201, or 202 [N] (GER)</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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<tr>
<td>3</td>
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</table>

**SECOND SEMESTER**

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

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

### PRE-VETERINARY MEDICINE/SCIENCE DEGREE PROGRAM (121 HOURS) [FYDA]

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td>A S 101</td>
<td>3</td>
</tr>
<tr>
<td>A S 180</td>
<td>1</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107, 140 [N], 171 [N], 201 or 202 [N] (GER)</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>
### JOINT PROGRAM IN ANIMAL SCIENCES AND VETERINARY MEDICINE

In order to meet the increasing demand for food- and 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 sciences program, completing all General Education Requirements, the animal sciences core and pre-veterinary medicine requirements. This program includes mathematics; chemistry, including organic and biochemistry; general biology; physics; and the core of animal sciences courses, including an introduction to farm animals; then further education in animal feeds and nutrition, breeding and genetics, reproduction and the economics of animal production management. Students will then enter the College of Veterinary Medicine and complete the requirements for total hours and 300-400-level hours before earning the BS in Animal Sciences. Students will continue the curriculum, leading to the DVM degree after a total of seven years of college work.

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

#### Degree Program Requirements

**Honors students complete Honors Requirements in place of General Education Requirements.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester</th>
<th>Course Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Year</strong></td>
<td><strong>First Semester</strong></td>
<td><strong>Hours</strong></td>
</tr>
<tr>
<td></td>
<td>A S 101</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A S 166, 172, 174, or 180</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Bio 103 or GER</td>
<td>3 or 4</td>
</tr>
<tr>
<td></td>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Engl 101 [W] (GER) or GER</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Math 107, 171 [N], or GER</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td>A S 166, 176, or 178</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Arts and Humanities [H,G] or Intercultural Studies [L,G,K] GER</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Bio 103 or 104 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>GER</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>H D 205 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Year</strong></td>
<td><strong>First Semester</strong></td>
<td><strong>Hours</strong></td>
</tr>
<tr>
<td></td>
<td>Ag Ec 201 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Bio 104 [B], GenCB 301, or GER</td>
<td>3 or 4</td>
</tr>
<tr>
<td></td>
<td>Chem 240</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td>A S 330</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A S 350, 351</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Phys 101 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Stat 212 [N] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

**Third Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td>A S 313</td>
</tr>
<tr>
<td></td>
<td>A S 406, 466, 472, or 478 [M]</td>
</tr>
<tr>
<td></td>
<td>BC/BP 364</td>
</tr>
<tr>
<td></td>
<td>Engl 402 [W] (GER)</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td>A S 380</td>
</tr>
<tr>
<td></td>
<td>A S 408</td>
</tr>
<tr>
<td></td>
<td>A S 466, 474, or 476</td>
</tr>
<tr>
<td></td>
<td>A S 485</td>
</tr>
<tr>
<td></td>
<td>Ag Ec 340</td>
</tr>
</tbody>
</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/A S 414. Students who still need either A S 406 or 408 would enroll in one of those in lieu of V MS/AS 414. If two 400-level animal production courses (A S 466, 472, 474, 476, or 478) were not completed, then students would enroll in one of them. Students will 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A S 101 Introductory Animal Science[3]</strong></td>
<td>(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. Cooperative course taught jointly by WSU and UI (AVS 109).</td>
</tr>
<tr>
<td><strong>103 General Animal Science[3]</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>166 Horse Management Laboratory[1]</strong></td>
<td>(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).</td>
</tr>
</tbody>
</table>
Department of Animal Sciences

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) Prereq biology. 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).

213 Applied Animal Nutrition 3 Prereq one semester Chem; one semester Bio S. Not open to A S majors. Characteristics of nutrients, nutritional requirements, ration calculations and feeding practices for farm animals. Credit not granted for both A S 213 and 313. Cooperative course taught jointly by WSU and UI (AVS 263).

260 Live Animal and Carcass Evaluation 3 (1-6) Basic principles of live animal and carcass evaluation. Cooperative course taught jointly by WSU and UI (AVS 265).

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

269 Beginning Equitation 1 (0-3) Equitation fundamentals, developing proficiency in riding and schooling techniques for horse and rider; anatomy, fitness, equipment, care and safety.

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 Bio S 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).

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

314 Principles of Nutrition 3 Prereq Bio S 104; Chem 102 or 106; GenCB 240. Digestion, absorption, metabolism, and function of nutrients. Cooperative course taught jointly by WSU and UI (AVS 305).

330 Genetics of Farm Animals 3 (2-3) Prereq GenCB 301; Stat 212 or 412. Genetic principles applied to breeding of farm animals. Cooperative course taught by WSU, open to UI students (AVS 330).

345 Introduction to Animal Growth and Development 3 Prereq A S 101, Bio S 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 AS 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 Reproduction of Farm Animals 3 Prereq Bio S 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 Reproduction of Farm Animals 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.


366 Equine Science and Techniques of Equine Training 3 (1-6) Prereq experience with horses; by interview only. Prescribed steps using various techniques to illustrate the principles of training; equine psychology, anatomy and physiology related to training.

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 Seminar 1 Prereq junior standing. Issues and preparation for careers in animal sciences areas.

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

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


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

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

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

444 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 BC/BP 364, Bio S 104. 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 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).

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

468 Aquaculture 2 Prereq Bio S 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 GenCB 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 and UI students.

505 Experimental Nutrition V 1 (0-3) to 3 (0-9) Prereq BC/BP 364; Chem 220, 222. Laboratory techniques used in nutritional research; modern biochemical methods of analysis; introduction to physiological chemistry.

507 Advanced Nutrient Metabolism 2 Prereq A S 406 or 408; 504, BC/BP 364. Advanced topics in metabolic regulation of carbohydrate, fat and amino acid use by animals. Cooperative course taught by WSU, open to UI students (AVS 512).

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

520 Preparation of Scientific Literature in Animal Sciences 2 Prereq graduate standing. Preparation of grant proposals, manuscripts, and literature 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 A S 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 526).

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

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

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

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

560 Domestic Animal Growth 2 Prereq A S 406, 408, or 440; BC/BP 364 or 563. Advanced topics in principles of growth and regulation in domestic animals. Cooperative course taught jointly by WSU and UI (AVS 560).

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

588 Perspectives in Biotechnology 3 Graduate-level counterpart of A S 488; additional requirements. Credit not granted for both A S 488 and 588.

598 Advanced Topics in Animal Sciences 1 or 2 May be repeated for credit. Recent research in various disciplines of animal sciences. Cooperative course taught by WSU, open to UI students (AVS 596).

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

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

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

Department of Anthropology

Professor and Department Chair, T. A. Kohler; Professors, R. E. Ackerman, J. H. Bodley, W. D. Lipe, R. J. Mehlinger, J.; Associate Professors, B. S. Hewlett, J. M. Mageo, L. S. Stone; Assistant Professors, G. A. Huckleberry, K. D. Lupo, N. P. McKee, J. Q. Patton, S. A. Weber; Associate Professor and Director of Center for Northwest Anthropology, W. Andrefsky, J.

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. All undergraduate majors are required to gain a background in all four of these major subfields. Graduate students may specialize in archeological 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 simulations, and lithic analysis, and includes courses taught by faculty with specialties in zooarchaeology, as well as research laboratories for faculty and advanced students.

In addition, anthropology provides a strong foundation for a pre-professional liberal arts education.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements. The Bachelor of Arts degree in the undergraduate program requires a total of 120 semester hours. At least 40 of the total hours required for the bachelor’s degree in this program must be in 300-400-level courses. See the General Education Requirements (GERs) for graduation in the WSU catalog. A minimum of 33 hours in anthropology courses are required. Grades of C- or higher are considered passing grades for all anthropology classes; D+ and lower are failing grades. No required course can be taken pass, fail. Courses are 3 credit hours except Anth 300 and 499 which are variable.

The anthropology major must achieve a grade of C- or better in Anth 203, 230, 260, 490, and in one course from each of the following: a) Anth 300, 301, 303, 306, 307, 309, 316, 320, 327, 401, 402, 403, 404, 405, 417, 418, 419, 428, 494, or 495; b) Anth 350, 355, or 450; c) Anth 463, 465, 466, 468; d) Anth 300, 330, 331, 333, 336, 370, 430, 435, 436.

Majors in anthropology are advised to take advanced work in two supporting fields.

ANTHROPOLOGY DEGREE PROGRAM (120 HOURS)

**FYDA**

Freshman Year

First Semester

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Second Semester

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<tr>
<td>Communication [C,W] (GER)</td>
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<td>Foreign Language, if necessary, or</td>
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<td>Elective¹</td>
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Sophomore Year

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<td>Anh 230</td>
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</table>

* FYDA

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, 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, and private consulting firms. In addition, anthropology provides a strong foundation for a pre-professional liberal arts education.
Department of Anthropology

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

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 6
Biological Anth Elective\(^1\) 3
Cultural Anth Elective\(^1\) 3
Intercultural [I,G,K] (GER) 3
Science Elective\(^1\) 1

Junior Year
First Semester Hours
Archeology Anth Elective\(^1\) 3
Arts & Humanities [H,G] (GER) 3
Arts & Humanities [H,G] 3
Social Sciences [S,K] (GER) 3
Electives\(^3\) 6
Complete Writing Portfolio

Second Semester Hours
300-400-level Electives\(^1\) 9
Anth Electives\(^1\) 6
Consider study abroad or summer field school

Senior Year
First Semester Hours
300-400-level Electives\(^1\) 9
Anth 401 [M], 403 [M], 405 [M], 430 [M], or 468 [M] 3
Linguistic Anth Elective\(^1\) 3
Second Semester Hours
300-400-level Electives\(^1\) 9
Anth 490 [M] 3
Tier III Capstone (GER) 3

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.

\(^2\) One 4-credit Tier I Science may be substituted for both the 3-credit Tier I Science and the 1-credit Science Elective.

\(^3\) Math 212 preferred.


\(^4\) Concentrating electives beginning in the junior year in one subarea 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 90 semester hours may certify a minor. A minor requires a minimum of 18 semester hours in anthropology, including three of the following: Anth 101 or 198, 203, 230, and 260. At least 9 hours must be 300-400-level work. A minimum grade of C is required in each course contributing to the minor.

Preparation for Graduate Study

As preparation for work toward an advanced degree a student should have completed not less than 18 hours in anthropology.

Description of Courses

Anthropology


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

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

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

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

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

256 Introduction to Syntax and Semantics 3 Same as Engl 256.

260 [B] Introduction to Physical Anthropology 3 Evidence for human evolution; processes of racial differentiation; techniques of physical anthropology.

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

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.

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.


327 Contemporary Native Peoples of the Americas 3 Contemporary cultures of Native American communities in South America, Meso America, and North America.

330 [S] Origins of Culture and Civilization 3 Prereq 3 hours Anth. Prehistoric roots of modern culture from the beginnings of humankind to the rise of the first great civilizations.

331 [K] America Before Columbus 3 Prereq Anth 101 or GenEd 110. Cultures and environments of North/Middle America from the arrival of the earliest hunter-gatherers to the complex Mayan and Aztec civilizations.

333 Archaeology of Washington 3 Prereq Anth 230, 331, or 370. Prehistory of Washington state; for majors and nonmajors.


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

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

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


404 [K] The Self in Culture 3 Prereq 100-level Anth, Psych or Soc; completion of one Tier I and three Tier II courses. Anthropological and psychological theories, folk theories in non-Western cultures, other time and place differences and contemporary American culture regarding the self.

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

430 [M] Introduction to Archaeological Method and Theory 3 Prereq Anth 230; 330 or 331. Archaeological theory in anthropological perspective; current trends in method and theory in American archaeology. Credit not granted for both Anth 430 and 530.

436 Ethnoarchaeology 3 Multidisciplinary approach (archaeology, ethnography and history) to the interpretation of past human cultures. Credit not granted for both Anth 436 and 536.
450 Descriptive Linguistics 3 Introduction to analysis and description of natural languages; phonological, syntactic, and semantic analysis of data from a variety of languages. Credit not granted for both Anth 450 and 550. Cooperative course taught by WSU, open to UI students (Anth 450).


466 Human Osteology 3 (2-3) Prereq Anth 260. Observations and measurements of human skeletons; variations based on age, sex, and race; comparisons with fossil human and higher primates. Credit not granted for both Anth 466 and 566. Cooperative course taught jointly by WSU and UI (J451/J551).

468 [S] [M] Sex, Evolution, and Human Nature 3 Prereq 3 hours Anth or Bio S; 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. Credit not granted for both Anth 468 and 568.


494 Development, Environment, and Health in Latin America (Ecuador) 3-10 Prereq basic fluency in Spanish. Interdisciplinary examination of inter-relations among development, environment, and health with emphasis on Ecuador. Taught in Ecuador.

495 Ecuador Internship/Independent Study 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.

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

500 Field School V 2 (0-6) to 8 (0-24) Prereq permission by application. Training in gathering and analyzing field data.

501 History of Anthropological Theory 3 Graduate-level counterpart of Anth 401; additional requirements. Credit not granted for both Anth 401 and 501.

502 Cross-cultural Gender and Kinship 3 Graduate-level counterpart of Anth 402; additional requirements. Credit not granted for both Anth 402 and 502.

504 Tribal Peoples and Development 3 Global and historic perspectives on the complex issues surrounding the problem of tribal peoples and development.

507 Advanced Studies in Culture Theory 3 May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours in social sciences. Evaluation of major theories and methods and their relationship to problems in cultural-social analysis.

510 Fundamentals of Cultural Anthropology 3 Overview of basic concepts and theory in cultural anthropology based on in-depth analysis of selected theoretical and ethnographic materials.

513 Lithic Technological Organization 4 (3-3) Methods and theory of lithic technology.

519 International Development and Human Resources 3 History of and recent changes in international development emphasizing anthropological perspectives.

528 Topics in Ethnography 3 Graduate-level counterpart of Anth 428; additional requirements. Credit not granted for both Anth 428 and 528.

530 Introduction to Archaeological Method and Theory 3 Graduate-level counterpart of Anth 430; additional requirements. Credit not granted for both Anth 430 and 530.

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

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

537 Quantitative Methods in Anthropology 4 (3-3) May be repeated for credit; cumulative maximum 8 hours. Prereq undergraduate Stat course. Sampling, data analysis, inferential statistics, microcomputer and mainframe use applied to anthropological problems 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 Prehistoric cultures, chronologies, and interrelationships on the northwest coast of North America.

542 Prehistory of Alaska and Eastern Siberia 3 Prehistoric cultural developments in the Arctic and sub-Arctic zones of Asia and North America.

543 Plateau Prehistory 3 Archaeology of the interior Northwest.

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

546 Prehistory of the Desert West 3 Changing desert environments and human adaptations; perspectives for understanding desert prehistory; ancient lifeways of the Desert West.

547 Models in Anthropology 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. Elaboration, recording techniques and analysis of sociocultural and linguistic field data.


563 Human Races 3 Graduate-level counterpart of Anth 463; additional requirements. Credit not granted for both Anth 463 and 563. Cooperative course taught jointly by WSU and UI (J412/J512).

565 Human Evolution 3 Graduate-level counterpart of Anth 465; additional requirements. Credit not granted for both Anth 465 and 565. Cooperative course taught jointly by WSU and UI (J411/J511).

566 Human Osteology 3 Graduate-level counterpart of Anth 466; additional requirements. Credit not granted for both Anth 466 and 566. Cooperative course taught jointly by WSU and UI (J451/J551).

570 Sediments in Geoarchaeology 4 (3-3) Sediment-forming processes, sedimentological techniques, reconstruction of Quaternary environments, and sedimentology of site-forming processes.

572 Zoolithic Archaeology 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 572).

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 Seminar in Communicating Anthropological Research 3 Preparation of original research reports in anthropology; survey of types of professional communication, and of standards and techniques.

600 Special Projects or Independent Study Variable credit.

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

800 Doctoral Research, Dissertation, and/or Examination Variable credit.

Department of Apparel, Merchandising, and Interior Design

Associate Professor and Interim Chair, J. Dillman; Professor, J. Asher Thompson; Associate Professors, C. Bicknell, R. Krikac, C. Salusso; Assistant Professors, N. Brown, J. Cho, J. C. Turpin; Instructors, P. Fischer, M. Melcher, J. Schultheis.

The Department of Apparel, Merchandising, and Interior Design offers undergraduate and graduate programs leading to Bachelor and Master of Arts degrees in Apparel, Merchandising, and Textiles and in Interior Design.
APPAREL, MERCHANDISING, AND TEXTILES

The textile and apparel industry is global, massive, multi-faceted and contributes over $1 billion annually to the economy of the state of Washington and represents the fifth largest industry in the state of Washington. Opportunities for exciting and challenging careers are virtually unlimited for students with a degree in Apparel, Merchandising, and Textiles. Graduates are prepared for careers in the textile and apparel industry through coursework designed to develop both personal and professional skills. Curriculum options are designed to:

- Teach knowledge of textile and apparel industry issues and practices. Students are introduced to the history of the textile and apparel complex, the role of this complex in the national and international economy, and problems facing the industry.
- Develop understanding of the societal, psychological, and cultural factors that influence consumer response to apparel and textile products.
- Provide opportunities for students to learn and practice methods and skills required for developing consumer products, merchandising of those products, and analysis of uses and responses to textile and apparel products by consumers.
- Develop analytical, evaluative and communication skills necessary to succeed in today's work environment. These include critical thinking and problem solving skills, the ability to work within a team framework, advanced verbal, written and visual communication skills, and leadership skills.

Areas of Study

All apparel, merchandising, and textile majors compete a set of core courses that introduce fundamental concepts and methods. Students then develop an area of expertise by selecting an option specific to their particular interests.

Merchandising

The merchandising option includes courses designed to allow students to develop competence in the planning, buying, and selling of merchandise in both personal and professional contexts. Curriculum options are designed to:

- Develop analytical, evaluative and communication skills.
- Provide opportunities for students to learn and practice methods and skills required for developing consumer products, merchandising of those products, and analysis of uses and responses to textile and apparel products by consumers.
- Develop understanding of the societal, psychological, and cultural factors that influence consumer response to apparel and textile products.
- Provide opportunities for students to learn and practice methods and skills required for developing consumer products, merchandising of those products, and analysis of uses and responses to textile and apparel products by consumers.

Product Development

The product development option focuses on the interaction between design and merchandising and provides students with depth in apparel product development. This program also allows students to customize coursework to fit their unique interests and offers an excellent opportunity to integrate apparel, merchandising, and textiles with other disciplines through a variety of potential minors or double majors.

Internships

Students in both options are encouraged to complete a cooperative experience internship in the apparel, merchandising, and textiles industry. Opportunities exist with apparel manufacturing and retail throughout the US.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

At least 40 of the total hours required for the bachelor’s degree in the merchandising and product development degree programs must be in 300-400-level courses. Courses required in both programs cannot be taken on a pass, fail basis.

MERCHANDISING DEGREE PROGRAM (120 HOURS)

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<td>AMT 108</td>
<td>Principles of Textiles</td>
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<td>Engl 101 [W] (GER)</td>
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<td>AMT 418</td>
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PRODUCT DEVELOPMENT DEGREE PROGRAM (120 HOURS)

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<td>AMT 418</td>
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<td>Intercultural [L,G,K] (GER)</td>
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<td>Tier III Capstone (GER)</td>
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</table>

1 Math 212 is suggested.
2 Product Development Electives: F A 111; 303 or 304; 313, 331, 332, 380; Drama 163, 264, 368; I D 325, or up to 13 credits of general electives.
3 Bio S 102 is suggested.
4 For a total of 7 credits of Biological and Physical Science electives.
5 AMT Electives: AMT 218, 311, 320, 419, 428, 491, 492, 495, 498, 499; I D 102, 211, 311, 498; apparel transfer courses as approved by department.
INTERIOR TEXTILES DEGREE PROGRAM
(120 HOURS)

Freshman Year

First Semester  
AMT 108  3  
Engl 101 [W] (GER)  3  
GenEd 110 [A] (GER)  3  
I D 101  3  
Math Proficiency [N] (GER)  3  

Supportive Electives  6  5

Second Semester  
Econ 101 [S] (GER)  3  
GenEd 111 [A] (GER)  3  
I D 102  3  
Intercultural [I,G,K] (GER)  3  

Sophomore Year

First Semester  
AMT 215  4  
AMT 220  3  
Biological Sciences [B] (GER)  3 or 4  
Communication Proficiency [C] (GER)  3  
I D 201  3  

Second Semester  
AMT 216  3  
AMT/I D Electives  6  
I D 202  3  
Intercultural [I,G,K] (GER)  3  

Junior Year

First Semester  
AMT 314  4  
AMT 316  3  
Mgt 301  3  
Physical Sciences [P] (GER)  3 or 4  
Recommended Electives  3  

Second Semester  
AMT 317  3  
AMT 318  3  
AMT 420  3  
AMT 492  3  
Mktg 360  3  

Senior Year

First Semester  
AMT 413  3  
AMT 417  3  
I D 311  3  
Recommended Electives  3  
Tier III Capstone (GER)  3  

Second Semester  
AMT 412  3  
AMT 418  3  
AMT 490  4  
AMT/I D Elective  3  

Minor in Apparel, Merchandising, and Textiles

For a minor in apparel, merchandising, and textiles, the student must complete 18 credits in AMID including AMT 215 and 314; 12 credits from AMT 216, 218, 220, 311, 316, 317, 318, 320, 412, 413, 417, 418, 420, 492. Contact the department office in White Hall, Room 202, for assignment of advisor to assist in selection of AMT courses. Students must earn a C or better to transfer the credit for a required course.

Preparation for Graduate Study

Normally the applicant for graduate study should have an undergraduate major in apparel, merchandising, and textiles. However, candidates with a good record in related fields may be well prepared for certain areas of advanced study. Students from related disciplines would be required to take some courses required of undergraduate majors in these fields.

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.

The interior design program is the only program in the state accredited by the Foundation for Interior Design Education Research (FIDER) and offers a Bachelor of Arts in Interior Design. The program teaches the common body of knowledge related to interior design as recognized by FIDER.

The successful completion of a portfolio review is required to become a certified major in interior design. The review is set up as an interview process between each student and a faculty panel. During the interview the students are expected to present completed projects and explain, answer, defend, and justify their design solutions to the faculty. Students wishing to certify into the interior design program must complete a minimum of 45 semester hours including the following six courses: Arch 101, 103, I D 101, 102, 201, 203, or transfer equivalents as approved by the department.

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

Degree Program Requirements

INTERIOR DESIGN (120 HOURS)

Honors students complete Honors Requirements in place of General Education Requirements.

Preparation for Graduate Study

Normally the applicant for graduate study should have an undergraduate major in apparel, merchandising, and textiles. However, candidates with a good record in related fields may be well prepared for certain areas of advanced study. Students from related disciplines would be required to take some courses required of undergraduate majors in these fields.

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Degree Program Requirements

INTERIOR DESIGN (120 HOURS)

Honors students complete Honors Requirements in place of General Education Requirements.
**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 would be required to take some courses required of undergraduates majors in these fields.

**Description of Courses**

**Apparel, Merchandising, and Textiles**

AMT

108 Introduction to Apparel, Merchandising, and Textiles 3 Overview of textiles/apparel field of study including the apparel and textiles industry, social/psychological aspects of dress, product development.


216 Apparel Product Development I 3 (0-6) Problem solving approach to textile and apparel production; comparison of methods, production methods, and costing for consumer-end use.

218 Apparel Product Analysis I 3 (2-3) Analysis of garments and textile products, product performance, quality control, mass production principles, and consumer value. Cooperative course taught by WSU and UI (FCS 225).

220 History of Western Dress and Textiles 3 Historical survey of western dress and textiles from prehistory to mid-1800s.

311 Pattern Making 3 (1-6) Prereq AMT 216. Development of apparel design from a basic pattern. Cooperative course taught jointly by WSU and UI (FCS 324).

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


317 Cultural Diversity and Appearance 3 The influence of cultural patterns, standards, ideals, beliefs, and values on dress and appearance in cross-cultural contexts.

318 Apparel Merchandising I 3 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 and Technology 3 Prereq AMT 108, 215. Current developments in technology as these impact the textile and apparel industry.

412 Product Design 3 (1-6) Prereq AMT 316. Apparel pattern and product line development. 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 [M] Social and Psychological Aspects of Dress 3 Prereq 6 hours social science. Role of dress in human interaction; personal/social attributes of dress; research/theory applied to dress and human behavior. Credit not granted for both AMT 417 and 517. Cooperative course taught by WSU, open to UI students (FCS 417).

418 Apparel Merchandising II 3 Issues and trends in contemporary merchandising. Credit not granted for both AMT 418 and 518.

419 Apparel, Merchandising, and Textiles Field Trip 1 May be repeated for credit; cumulative maximum 6 hours. Prereq junior in AMT. Selected issues in apparel production and distribution in connection with organized field trip.

420 [M] History of Contemporary Dress 3 Overview of fashion design and social history from mid-1800s to present.

428 International Experience in Apparel/Textiles Field 3 May be repeated for credit; cumulative maximum 6 hours. Prereq junior standing. Cultural experience integrated with the field of apparel/textiles in centers of apparel production throughout the world. Credit not granted for both AMT 428 and 528.

490 Cooperative Education Experience V 1-10 Full-semester experience with business, industry, or government unit.

491 Professional Development Seminar 2 Integrated seminar focusing on issues related to cooperative education experiences.

492 Sketching and Graphic Communication 3 (1-4) Free-hand sketching and computer graphic techniques in fashion illustration; portfolio presentation and development.

495 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq by interview only.

498 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Current issues, trends, and merchandising strategies in apparel and textiles.

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

512 Apparel Product Development 3 Prereq AMT 594. Integration of consumer demand target market research with the development, application, and testing of prototype products for specific end uses.

517 Social and Psychological Aspects of Dress 3 Graduate-level counterpart of AMT 417; additional requirements. Credit not granted for both AMT 417 and 517.

518 Apparel Merchandising II 3 Graduate-level counterpart of AMT 418; additional requirements. Credit not granted for both AMT 418 and 518.

519 Research Seminar 2 or 3 Literature review; preparation and review of reports.

520 Advanced Aesthetic Theory in Fashion Design 3 Prereq AMT 420. Framework for in-depth analysis of apparel fashion design provided through exploration of aesthetic and human perception theories within a socio-historic context.

528 International Experience in Apparel/Textiles Field 3 May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of AMT 428; additional requirements. Credit not granted for both AMT 428 and 528.

594 Readings in Apparel, Merchandising, and Textiles 3 Prereq graduate standing. Exploration of current topics through readings in apparel, merchandising, and textiles.

596 Advanced Instructional Practicum 3 Prereq Univ 590 or credit; 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.

200 Environmental Design and Communication Laboratory 4 (1-9) Prereq transfer student. Exploration of 2-D and 3-D design principles, skill development, and introduction to micro level interior space design. Credit not granted for I D 200 and I D 102 or 201.

201 Perception and Communication I Laboratory 4 (1-9) Prereq Arch 101, 103; I D 101, 102, or c//. Application of design concepts into micro environments; design vocabulary and skill development. Credit not granted for both I D 201 and I D 200.

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


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.
The School of Architecture and Construction Management

**General Requirements**

1. Due to limitations of space and faculty, enrollment in second-year courses and certification as a major in architecture or construction management 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 elsewhere. See the WSU Transfer Guide and contact the School of Architecture and Construction Management for information.

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

4. Students transferring from another institution into the second or third 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 normally enroll in 300- or 400-level Arch courses or any Cst M courses without being certified as a major in architecture or construction management.

6. A student may not take courses required by the school on a pass, fail basis.
Degree Program Requirements

BACHELOR OF ARCHITECTURE
(150 HOURS)

FYDA (FIVE YEAR AGREEMENT)
Honors students complete Honors Requirements in place of General Education Requirements.

The five-year Bachelor of Architecture program is structured into (1) Pre-Architecture consisting of a beginning year of basic education, (2) the Professional Program consisting of three years of basic professional education, and (3) a concluding year of concentrated study and focus. It is advisable that students interested in pursuing architecture should contact the school in order to ensure that current curriculum information is obtained.

Pre-Architecture

Students who enter WSU and have an interest in architecture should obtain an advisor in the School of Architecture and Construction Management through the Student Advising and Learning Center.

Freshman Year

First Semester

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Second Semester

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<tr>
<td>Math 171 [N] or 206 [N] (GER)</td>
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Second-Year Admissions and Certification

Students who are not adequately prepared for the second-year architectural program requirements. Students not currently enrolled in architectural design courses at WSU must also submit a portfolio. Selection is based on the g.p.a. in the required 54+ semester credit hours, including all the first- and second-year architectural program requirements. Students not currently enrolled in architectural design courses at WSU must also submit a portfolio. Selection is based on the g.p.a. in the required 54+ semester credit hours. The screening is done at the end of the WSU spring semester. Most of the 45 students will be selected at the end of the spring semester, but some positions will be held open until midsummer for transfers. It should be noted that the freshman class of 1998 will be required to purchase a computer after acceptance to the third year. Purchase should be made in conjunction with School of Architecture requirements. It is the policy of the school to provide computer support for software and network connections.

Professional Program

The School of Architecture and Construction Management accepts 60 students into the second year. Students who wish to enroll in second year must submit an application to the School of Architecture during the previous spring semester. To be considered, a student must have completed at least 26 semester 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, 201, 203 at WSU, they will be required to submit visual evidence of their architectural graphic and design work for review by the Admissions Committee. Most of the 60 students will be selected at the end of the WSU spring semester but some positions will be held open until late summer for transfer students.

Sophomore Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 201</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 202</td>
<td>3</td>
</tr>
<tr>
<td>F A Elective</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] or 206 [N] (GER)</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

Third-Year Admissions and Certification

Years three, four, and five constitute the certified professional program in architecture. A maximum of 45 students are admitted into the third year each fall and are certified in architecture. To be considered, a student must submit an application to the School of Architecture and Construction Management during the previous spring semester and have completed 54+ semester credit hours, including all the first- and second-year architectural program requirements. Students not currently enrolled in architectural design courses at WSU must also submit a portfolio. Selection is based on the g.p.a. in the required 54+ semester credit hours. The screening is done at the end of the WSU spring semester. Most of the 45 students will be selected at the end of the spring semester, but some positions will be held open until midsummer for transfers. It should be noted that the freshman class of 1998 will be required to purchase a computer after acceptance to the third year. Purchase should be made in conjunction with School of Architecture requirements. It is the policy of the school to provide computer support for software and network connections. As part of the WSU branch campus system, the school sends 15 fourth- and 15 fifth-year students to Spokane. Upon application to the third year, students are given the option of selecting either Pullman or Spokane. By accepting admission to the third year, students also accept the conditions of their place of study during the fourth or fifth year.

Application/Portfolio/Notification Deadlines:

April 15

All second-year and third-year applications due.

May 1

Portfolios due from second- and third-year applicants who did not complete Arch 101, 103, 201, 203 at WSU.

June 15

Screening complete: Applicants will be classified as accepted or denied. Applicants will be notified by mail.

Midsummer

Late screening for transfers: Applicants will be classified as accepted or denied and will be notified by mail.

NOTE:

Students offered positions in the second-year courses or third-year program must promptly notify the school of their acceptance or the position will be offered to another student.

Students that are admitted must be registered for the fall semester and attend the first day of classes or lose their position.

Junior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 301</td>
<td>5</td>
</tr>
<tr>
<td>Arch 307</td>
<td>2</td>
</tr>
<tr>
<td>Arch 351</td>
<td>2</td>
</tr>
<tr>
<td>Arch 353</td>
<td>1</td>
</tr>
<tr>
<td>Arch 432</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</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>Arch 303</td>
<td>5</td>
</tr>
<tr>
<td>Arch 309</td>
<td>2</td>
</tr>
<tr>
<td>Arch 352</td>
<td>3</td>
</tr>
<tr>
<td>Arch 354</td>
<td>1</td>
</tr>
<tr>
<td>Arch 423 [M]</td>
<td>2</td>
</tr>
<tr>
<td>Arch 433</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>Arch 401</td>
<td>5</td>
</tr>
<tr>
<td>Arch 407</td>
<td>2</td>
</tr>
<tr>
<td>Arch 434</td>
<td>1</td>
</tr>
<tr>
<td>Arch 461</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 403</td>
<td>5</td>
</tr>
<tr>
<td>Arch 409</td>
<td>2</td>
</tr>
<tr>
<td>Arch Emphasis Electives [M]</td>
<td>4</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

Fifth Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 411</td>
<td>6</td>
</tr>
<tr>
<td>Arch 415</td>
<td>3</td>
</tr>
<tr>
<td>Arch 472</td>
<td>2</td>
</tr>
<tr>
<td>Arch Emphasis Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 413</td>
<td>6</td>
</tr>
<tr>
<td>Arch 473</td>
<td>2</td>
</tr>
<tr>
<td>Arch Emphasis Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

BACHELOR OF SCIENCE IN ARCHITECTURAL STUDIES (120 HOURS)

FYDA

Honors students complete Honors Requirements in place of General Education Requirements.

The Bachelor of Science in Architecture Studies is a program primarily for those who want to conclude their studies at the end of four years. If, after being admitted into the school and spending at least one semester in the professional program, students find that their interests lie in a different but related area or specialty, they may choose to move into the Architectural Studies Program. It can be used to help prepare a student to work in related fields such as...
technology, management, or community or regional development. It may be used as a foundation for graduate work in these areas.

It must be clearly understood that this program does not necessarily prepare a student for admission into the fifth year of the professional program nor prepare graduates for the Architect’s License Examination.

All students desiring to obtain the architectural studies degree must certify as majors in the professional program. There are two methods by which this degree may be obtained. Please see below:

Program Requirements:

1. Completion of the pre-architecture requirements and admission into the professional program.
2. a. Completion of all required courses in the second, third, and fourth years of the professional architectural program, or
   b. Arch 301, 303, 307, 309 and completion of at least 25 additional 300-400-level credit hours in or supporting an area of emphasis. Specific schedule of studies must be approved by the school.

BACHELOR OF SCIENCE IN CONSTRUCTION MANAGEMENT
(150 HOURS)

Honors students complete Honors Requirements in place of General Education Requirements.

Construction management is a five-year program structured into two years of preconstruction management, two years of construction management, and one year of focused specialized study. Construction management students are required to spend their fifth and final year at the WSU branch campus in Spokane to enhance opportunities for specialized study and increase interaction with professionals in the construction industry.

The degree of Bachelor of Science in Construction Management is for those students who wish to work in the profession of construction management or in a management capacity in other facets of the construction industry.

Upon completion of the Preconstruction Management Program requirements, or their equivalent for transfer students, application must be made for certification into the Construction Management Program. It should be noted that the freshman class of 1998 will be required to purchase a computer after acceptance to the third year. Purchase should be made in conjunction with school requirements. It is the policy of the school to provide support for software and networks.

PRECONSTRUCTION MANAGEMENT

Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 101 or M E 103</td>
<td>3</td>
</tr>
<tr>
<td>Engl 110 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Geol 101 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Cst M 453 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
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</table>

Sophomore Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acctg 230</td>
<td>3</td>
</tr>
<tr>
<td>B Law 210</td>
<td>3</td>
</tr>
<tr>
<td>Econ 102 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acctg 231</td>
<td>3</td>
</tr>
<tr>
<td>Cpt S 105</td>
<td>4</td>
</tr>
<tr>
<td>Dec S 215</td>
<td>4</td>
</tr>
<tr>
<td>Math 201</td>
<td>3</td>
</tr>
</tbody>
</table>

Certification Requirements:

The School of Architecture and Construction Management has separate admissions and certification policies and procedures for its different degree programs. Admission to the Construction Management Program will be considered for those who have qualified for admission to WSU and fulfill the requirements outlined below.

The undergraduate Construction Management Program has a one-step screening process leading to certification. The screening takes place between the second- and third-year level when certification is granted and enrollment to 300- and 400-level Arch and Cst M courses is allowed. Note that this limitation is imposed because of limited space, equipment and faculty resources. Students may transfer to the school during the two-year preconstruction program or apply directly for third-year certification.

Third-Year Admission:

Every year a maximum of 25 students will be certified and allowed to continue to third year after they successfully pass through the screening process, which will take place at the termination of spring semester after grades are received.

The Construction Management Program Coordinator reviews all applications and makes recommendations to the School of Architecture’s Admissions and Academic Affairs Committee regarding applicants. Selection will be made on or about July 15; all applicants will be notified of their status by letter mailed from the School of Architecture as soon as possible thereafter. Successful applicants will also be certified into the Construction Management Program as soon as possible thereafter.

Course and G.P.A. Requirements for Screening:

Because the school receives more applications from qualified students than can be accommodated, screening for entry into the third year is based on the applicant fulfilling the minimum requirements listed and the applicant’s overall g.p.a. To be considered for admission, an applicant must:
1. Qualify for admission into Washington State University.
2. Complete the first two years as listed herein under Preconstruction Management.
3. Earn a grade of C or better in Acctg 230, 231, Arch 101 or M E 103, B Law 210, Cpt S 105, Dec S 215, Econ 101, 102, Geol 101, Math 171 or 206, 201; Phys 101 or 201.
4. Complete and submit, by May 1, an application to the Construction Management Program.

Applications Requirements and Deadlines:

Applications are due May 1 for admission and certification into the program at the beginning of the fall semester. Grade records for transfer students for the semester or quarter must be available to the Construction Management Coordinator before July 1.

CONSTRUCTION MANAGEMENT DEGREE PROGRAM

Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 330</td>
<td>2</td>
</tr>
<tr>
<td>Arch 351</td>
<td>3</td>
</tr>
<tr>
<td>Arch 432</td>
<td>3</td>
</tr>
<tr>
<td>C E 301</td>
<td>3</td>
</tr>
<tr>
<td>Cst M 201</td>
<td>2</td>
</tr>
<tr>
<td>E R 305</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>Arch 331</td>
<td>2</td>
</tr>
<tr>
<td>Arch 352</td>
<td>3</td>
</tr>
<tr>
<td>Arch 433</td>
<td>3</td>
</tr>
<tr>
<td>Cst M 453</td>
<td>3</td>
</tr>
<tr>
<td>Fin 325</td>
<td>3</td>
</tr>
<tr>
<td>Business Ad. Elective</td>
<td>3</td>
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Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 461</td>
<td>3</td>
</tr>
<tr>
<td>Cst M 442 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Cst M 455</td>
<td>3</td>
</tr>
<tr>
<td>Cst M 456</td>
<td>4</td>
</tr>
<tr>
<td>Engl 301 [W] or 402 [W] (GER)</td>
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Fifth Year (WSU Spokane)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cst M 451 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Cst M 452</td>
<td>3</td>
</tr>
<tr>
<td>Cst M 457</td>
<td>4</td>
</tr>
<tr>
<td>Cst M 471</td>
<td>3</td>
</tr>
<tr>
<td>Business Ad. Elective</td>
<td>3</td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 451</td>
<td>2</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>7</td>
</tr>
</tbody>
</table>

1 Consult your advisor.

Description of Courses

Architecture

Arch

101 Graphics Communication 3 (0-6) Drawing to perceive three-dimensional space; freehand (architectural) drawing, drafting, isometric and orthographic drawing; perspective, shades and shadows, lettering, and rendering techniques.

103 Visual Design 3 (0-6) Prereq Arch 101. Two- and three-dimensional design and spatial studies; abstract studies in form, color and texture; introduction to architectural design processes.

120 Innovation in Design 2 Same as M E 120.

201 Architectural Design 3 (0-6) Prereq Arch 103, c/ in Arch 207. Introduction to architectural design focusing on cultural/symbolic issues.

202 [H] The Built Environment 3 Design and planning of the built environment: products, interiors, structures, landscapes, cities, regions, earth; human-environmental interactions, sustainability, and quality.
203 Architectural Design II 3 (0-6) Prereq Arch 201, c/c in Arch 209. Introduction to architectural design as influenced by building technology, building systems and craft.

207 Design Theory I 1 Prereq c/c in Arch 201. Introduction to design theory relating to cultural/symbolic issues.

209 Design Theory II 1 Prereq c/c in Arch 203. Design theory relating to building technology, systems and crafts which influence design decisions.

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

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

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

307 Design Theory III 2 Prereq certified Arch major; c/c in Arch 301. Introduction to design theory relating to environmental and social issues.

309 Design Theory IV 2 Prereq c/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 2 Wood and masonry materials and construction systems; timber frame and bearing wall construction; other uses of wood and masonry.

331 Materials and Construction II 2 Prereq Arch 330. Continuation of Arch 330. Concrete and metal materials and construction systems; foundation, framing and roof systems.

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

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

351 Architectural Structures I 3 Prereq major in Arch or Cst M. Introduction to statics and mechanics; analysis and design of statically determinate architectural structures using timber, steel, and reinforced concrete systems.

352 Architectural Structures II 3 Prereq Arch 351. Continuation of Arch 351.

353 Architectural Structures Lab I 1 (0-2) Prereq Arch 351 or c/c. Design principles of architectural structures systems; available systems for spanning and enclosing architectural space.

354 Architectural Structures Lab II 1 (0-2) Prereq Arch 352 or c/c. Continuation of Arch 353.

386 Reading Examination V 1-3 Prereq major in Arch or Cst M. Preparation of summer reading from lists prepared by the school.

390 Topics · Study Abroad 3 Special topics in architecture taught in NCSA study abroad programs.

401 Architectural Design V 5 (0-10) Prereq Arch 303; c/c in Arch 407. Advanced architectural design focusing on technology, systems and crafts of buildings.

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

407 Design Theory V 2 Prereq c/c in Arch 401. Design theory relating to systems, technology and crafts of buildings.

409 Design Theory VI 2 Prereq c/c in Arch 403. Advanced design theory relating to social and environmental issues which influence housing design.

411 Architectural Design VII 6 (0-12) Prereq Arch 403. Comprehensive building design incorporating programming, space planning, interiors, site planning and landscaping.

413 Architectural Design Thesis 6 (0-12) Prereq Arch 411, 415. In-depth study of architectural design problems; thesis relating to architectural project selected by student and approved by faculty.

415 Programming and Decision Theory 3 Process of data collection, analysis and synthesis including cost management, organization, preparation and presentation of a program.

423 [M] Twentieth Century Architecture 2 Prereq Arch 324. History from the modern movement to today; principles of architectural design demonstrated in the work of 20th century architects.

424 [M] Historic Preservation 2 Prereq major in Arch or Cst M. History and practice of architectural and urban conservation; description, evaluation and survey; restoration, rehabilitation, adaptive re-use; historic districts; benefits and incentives.

425 Architectural Theory I 2 Architectural criticism and theory as viewed from contemporary and historical precedents.

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

427 Site and Landscape Design 3 (1-4) Prereq Arch 203. Exploration of issues and development of skills relative to site and landscape design.

432 Environmental Control of Buildings I 3 Mechanical systems for buildings; building heating, ventilating, and air conditioning systems, heat flow concepts.

433 Environmental Control of Buildings II 3 Prereq Arch 432. Water supply, drainage, electrical and lighting systems for buildings.

434 Acoustics 1 Prereq major in Arch or Cst M. Sound theory, control, acoustics, and reinforcement systems as applied to architectural problems.


438 Energy, Design and Computers 2 (1-2) or 3 (1-4) Prereq Arch 303, 423. Design theory and methods of energy and resource conservation in architecture through the use of daylight modeling and computers.

439 Lighting Design 3 Prereq Arch 432. Engineering and aesthetics of lighting design for buildings; case studies, field trip, studio design exercises.


446 Architectural Animation 3 (1-4) Prereq certified Arch major, Cpt S 150 or 205. Introduction to computer animation production, building simulation and related CAD modeling techniques.

451 Computer-aided Design I 2 (1-2) Prereq basic computer course. Science and art of architectural computer-aided design for design discipline students.

452 Computer-aided Design II 2 (1-2) Prereq basic computer course. Continuation of Arch 451.

456 Field Sketching/Journal Keeping 3 (2-2) Prereq junior standing. Field-sketching/journal-keeping strategies to facilitate investigation and comprehension of the built environment.

461 Architectural Structures III 3 Prereq Arch 352. Wind and seismic loads on architectural structures; high-rise structure systems; reinforced masonry systems, earth-retaining structures and foundation systems.

462 Architectural Structures IV 3 Prereq Arch 352. Deflection theory; analysis of statically indeterminate architectural structure systems; case studies in preliminary architectural engineering for buildings.

472 Construction Communications/Codes 2 Prereq major in Arch. Codes; specifications, project manuals, and contract documents.

473 Professional Practice 2 Prereq Arch 472. Architect licensing process; techniques for and rationale of marketing architectural services; office organizational and business methods applied to architecture.

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

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

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

492 Seminar in Architectural History V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq major in Arch. Advanced study in architectural history.

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

494 Seminar in Urban and Regional Planning V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq Arch 342. Advanced study in urban and regional planning.

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

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

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

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

510 Research Methods 2 Research methods in architecture and design disciplines; theory and methodology of research including historical survey, experimental systems and design process.

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

540 History and Theory of Design Issues in Architecture 3 Advanced study of history and theory of architecture relating to environmental, cultural and technological design issues.

546 Computer Animation 3 May be repeated for credit; cumulative maximum 9 hours. Prereq Arch 446 or Cpt S 446; by interview only. Advanced computer animation techniques: advanced specialization in building/design simulation, dynamic modeling and visualization, engineering animation.

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 V1-16 May be repeated for credit. Prereq graduate student in Arch. Placement in an approved industrial, professional, or governmental situation for specialized or general experience.

600 Special Projects or Independent Study 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/management practices for a construction firm; building construction project management.

453 Construction Communications/Law/Codes 3 (2-3) Construction communications and law overview; analysis and interpretation of contract documents and the uniform building code.

#### 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.

#### Methods and Procedures of Construction I 4 Prereq Arch 461, Cst M 470. Methods and procedures for site work, foundation construction, concrete construction; equipment, labor, and safety requirements.

#### Methods and Procedures of Construction II 4 Methods and procedures for masonry construction, steel construction, wood and timber construction, high-rise construction; equipment, labor, and safety requirements.

#### 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.

#### Estimating II 3 (1-6) Computerized construction cost estimating and cost management; personal computer software applications spreadsheet, file management, database, and custom-type programs.

#### Seminar in Construction Management V 1-4 May be repeated for credit; cumulative maximum 4 hours. Advanced study in construction practice management.

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

### Asia Program

**Professor and Program Director, M. Tolmacheva (History, Middle East); Professors, V. N. Bhatia (President’s Office, South Asia), T. L. Kennedy (History, East Asia), T. L. Kennedy (History, East Asia), T. Lumpkin (Crop and Soil Sciences, East and South Asia); Associate Professors, F. W. Blackwell (History, South Asia), C. S. Ivory (Art History, the Pacific), M. Myers (Philosophy and Religion, South Asia, East Asia); Assistant Professors, N. Kawamura (History, East Asia), D. Sonnenfeld, (Sociology, Southeast Asia), R. Sun (History, East Asia); Librarian, A. M. Spitzer (South Asia).**

The Asia Program is designed to provide a broad, systematic knowledge of Asia through interdisciplinary study and is intended to serve four major objectives:

1. to prepare students intending to teach courses on Asia in public schools,
2. to provide academic background for those planning to pursue graduate work on Asia,
3. to prepare students for business careers dealing with Asia, and
4. to train those interested in governmental and various private career opportunities related to Asia.

The flexibility of the program affords both an 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 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.

### Degree Program Requirements

**Honors students complete Honors Requirements in place of General Education Requirements.**

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.
Students should consult their advisor to determine when courses are offered.

Minor:

All courses are crosslisted in the Asia Program.

Description of Courses

Asia

270 [K] Introduction to South Asian Culture 3 Same as Hist 270.
272 [U] Introduction to Middle Eastern History 3 Same as Hist 272.
275 [K] Introduction to East Asian Culture 3 Same as Hist 275.
306 [K] Cultures and Peoples of the Middle East 3 Same as Anth 306.
314 [G] [M] Philosophies and Religions of India 3 Same as Phil 314.
315 [G] [M] Philosophies and Religions of China and Japan 3 Same as Phil 315.
370 [G] Civilization of Classical India 3 Same as Hist 370.
373 [G] Chinese Civilization 3 Same as Hist 373.
387 World War II in Asia and the Pacific 3 Same as Hist 387.
435 Politics of Developing Nations 3 Same as Pol S 435.
436 Politics in Japan 3 Same as Pol S 436.
470 [T] [M] Gandhi: India and the United States 3 Same as Hist 470.
472 [M] 20th Century Middle East 3 Same as Hist 472.
476 Revolutionary China, 1800 to Present 3 Same as Hist 476.
477 Modern Japanese History 3 Same as Hist 477.
499 Special Problems V 1–4 May be repeated for credit. S, F grading.

Program in Astronomy

Professor and Program Director, J. H. Lutz; Assistant Professor, J. Brown; Visiting Assistant Professor, S. Austin.

Astronomy is the study of celestial bodies including the sun, planets, satellites, stars, and galaxies. The various courses offered in astronomy are intended to provide background for both liberal arts and science majors. The faculty is part of the Department of Pure and Applied Mathematics. The WSU Planetarium and the Jewett Observatory are used as instructional aids in the astronomy courses. Opportunities are available for students to collaborate with astronomy faculty to do research projects with the 3.5 m Apache Point Telescope which can be operated remotely from the WSU Pullman campus.

A minor in astronomy requires 16 hours as follows: a minimum of 10 hours 300–400-level astronomy courses which must include Astr 345 and at least 1 hour of Astr 499; 6 hours from Cpt S 330; Hist 381; Math 360, 440, 441, 443, 444, 448; Phys 320, 341, 342, 443, 450.

Description of Courses

Astronomy

135 [P] Descriptive Astronomy 3 Physical characteristics and motions of the bodies of the solar system, stars, nebulae, and galaxies. Credit not granted for both Astr 135 and 345.
150 [Q] Science and the Universe 3 Basic science background, including physical concepts, scientific reasoning, data analysis, and astronomical applications.
345 [P] Principles of Astronomy 3 Prereq Phys 102 or 202. Planets, the sun, stars, and galaxies; current topics in astrophysics and planetary research. Credit not granted for both Astr 135 and 345.
435 Astronomy and Astrophysics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Math 172, Phys 202. Advanced topics in modern astronomy and astrophysics. Cooperative course taught jointly by WSU and UI (Phys 485).
450 [P] The Search for Extraterrestrial Life 3 Prereq completion of one Tier I and three Tier II courses. The astronomical, biological and social issues involved in the search for extraterrestrial life.
499 Special Problems V 1–4 May be repeated for credit. S, F grading.
538 Topics in Modern Astrophysics 3 May be repeated for credit; cumulative maximum 9 hours. Prereq Math 315, Phys 202. Problems of current astrophysical interest in the areas of stellar atmospheres, stellar interiors, gaseous nebulae, the interstellar medium and galaxies.
600 Special Projects or Independent Study Variable credit. S, F grading.

Degree Program Requirements

Honor students complete Honors Requirements in place of General Education Requirements.

The department offers three program options leading to the B.S. degree 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 for the bachelor’s degree in these degree programs must be in 300–400-level courses. Students participating in the Four-Year Degree Agreement must declare a major before their third semester and complete Chem 106 and Math 172 in their first year.

General Biochemistry Degree Program (120 Hours)

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Bio S 103 [B] (GER)</td>
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<tr>
<td>Chem 106 [P] (GER)</td>
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<tr>
<td>Math 171 [N] (GER)</td>
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Second Semester

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<td>Math 172</td>
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Sophomore Year

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<th>Course</th>
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<tr>
<td>Arts &amp; Humanities [H,L] (GER)</td>
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<tr>
<td>Bio S 104 [B] (GER)</td>
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<td>Chem 340</td>
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<td>Phys 201 [P] (GER)</td>
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<td>Chem 342</td>
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<td>Phys 202 [P] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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**Description of Courses**

**Biochemistry/Biophysics**

- **BC/BP 312 [M] Cell and Molecular Laboratory 2 (0-6)**
  - Same as GenCB 312.

- **BC/BP 364 Introductory Biochemistry 4**
  - Prereq Chem 106; Chem 240 or 340. Modern biochemistry for undergraduates in the biological sciences. Cooperative course taught by WSU, open to UI students (MMBB 380).

- **BC/BP 366 Introductory Biochemistry Laboratory 1 (0-3)**
  - Prereq BC/BP 364 or c//. Basic biochemical techniques.

- **BC/BP 378 Introduction to Molecular Biology Computer Techniques 3 (1-6)**
  - Prereq BC/BP 364, GenCB 301. Computer analysis of protein and nucleic acid sequences, molecular visualization and modeling, sequence and structure databases.

- **BC/BP 398 [M] Undergraduate Seminar 1**
  - Prereq junior standing. Opportunities in biochemistry, biophysics and molecular biology.

- **BC/BP 463 General Biochemistry 3**
  - Prereq BC/BP 364, junior standing. Structure and function of proteins, nucleic acids and biological membranes; principles of enzymology; biochemical methodology.

- **BC/BP 464 General Biochemistry 3**
  - Prereq BC/BP 463.

- **BC/BP 472 Principles of Biophysical Chemistry 3**
  - Prereq BC/BP 364; Math 140 or 171; Phys 102 or 202. Biochemical reactions and processes, molecular recognition, coupled reactions, enzyme catalysis, analysis of macromolecular structure by electrophoresis, sedimentation, viscosity, and spectroscopy.

- **BC/BP 473 Molecular Biophysics 3**

- **BC/BP 482 [M] Biophysical Chemistry Laboratory 2**
  - Prereq BC/BP 472 or c//. Laboratory experiments illustrating physical chemical principles with particular application to life sciences.
Department of Biochemistry and Biophysics

495 Directed Research V 1 (0-3) to 3 (0-9) May be repeated for credit. Prereq BC/BP 364 or c/. Introduction to laboratory research.

496 [M] Directed Research and Writing 3 (0-9) Prereq BC/BP 364 or c/. Introduction to laboratory research; written reports required.

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

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

561 Biochemical Signaling in Plants, Animals and Microorganisms 2 Prereq BC/BP 563. New research on intra and extra cellular biochemical signaling, including communication in plants and hormone action in animals.

563 General Biochemistry 3 Graduate-level counterpart of BC/BP 463; additional requirements. Credit not granted for both 463 and 563. Cooperative course taught by WSU, open to UI students (MMBB 541).

564 General Biochemistry 3 Graduate-level counterpart of BC/BP 464; additional requirements. Credit not granted for both 464 and 564. Cooperative course taught by WSU, open to UI students (MMBB 542).

565 Molecular Biology I 3 Prereq BC/BP 364, GenCB 301. DNA replication and recombination in prokaryotes and eukaryotes; recombinant DNA methods and host/vector systems; genome analysis; transgenic organisms.

566 Molecular Biology II 3 Same as GenCB 566.

567 Proteins and Enzymes 3 Prereq BC/BP 563. Enzyme mechanisms; protein structure and function; protein evolution.

568 Advanced Topics in Biochemistry V 1-3 May be repeated for credit. Prereq BC/BP 563 or c/. Recent research in selected areas of biochemistry.

570 Biological Membranes 2 or 3 Prereq BC/BP 564. Structure and function of biological membranes; composition, transport, receptors, and sensory phenomena.

572 Organic Chemistry and Biochemistry for Teachers II 2 For prescheduled teachers. Continuation of Chem 571.

573 Physical Biochemistry 3 Prereq BC/BP 472 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.

576 Molecular Biology Techniques I 1 (0-3) Prereq BC/BP 564 or c/. Modern laboratory technique in the sequencing of nucleic acids.

577 Molecular Biology Techniques II 1 (0-3) Prereq BC/BP 564 or c/. Modern laboratory techniques in the use of plasmids as cloning vehicles.

584 Molecular Biology Computer Techniques 4 (2-6) Prereq BC/BP 364 or 563; GenCB 301. Computer analysis of protein and nucleic acid sequences, molecular visualization and modeling, protein folding. Cooperative course taught by WSU, open to UI students (MMBB 578).

580 Protein Targeting in Plant Cells 3 Same as PI Ph 580.

587 Advanced Topics in Plant Biochemistry 2 Prereq BC/BP 564; basic botany. Biochemistry unique to plants; new research advances.

591 Biochemistry Seminar 1 or 2 May be repeated for credit; cumulative maximum 10 hours. Required of all graduate students in biochemistry.

592 Advanced Topics in Cell Biology V 1-3 May be repeated for credit; cumulative maximum 7 hours. Same as GenCB 592.

593 Research Proposal 2 May be repeated for credit; cumulative maximum 4 hours. Written and oral presentation of an area of biochemistry.

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

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

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

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

Department of Biological Systems Engineering

Professor and Department Chair, R. P. Cavallieri; Professors, G. V. Barbosa-Cánovas, K. B. Campbell, D. C. Davis, R. G. Evans, G. M. Hyde, L. G. James, C. O. Stockle; Associate Professors, M. D. Kleene, M. J. Pitts, M. K. Swan, W. B. Symons; Assistant Professors, S. Chen, B. G. Leib, J. Tang, Q. J. Wu; Instructor, J. E. Dutrey; Emeriti Faculty, D. L. Bassett, J. G. Cavnarca, J. E. George, L. G. King, C. L. Nelson, C. A. Pettibone, J. B. Simpson, H. Waelti.

(For complete information about all departmental programs, please see our Web page at www.bsys.e.wsu.edu)

BIOL OGY SYSTEMS ENGINEERING

Biological systems engineering is an emerging field of engineering study that addresses issues in which humans, plants, animals, micro-organisms and biologically-produced materials, interact with our world. Working in teams, biological systems engineers produce creative and effective solutions to problems facing the environment, our food supply, and all types of living organisms. Using their technical knowledge and the engineering design process, they design processes and devices that improve the well-being of people, plants, animals and other living organisms and create new products through efficient, yet environmentally sound use of our biological resources. Biological systems engineers demonstrate unique engineering capabilities identified by national engineering leaders as crucial for the next generation of technological advances.

Example technologies developed by biological systems engineers include: aquatic plant systems designed to purify contaminated water; food production and processing systems for NASA’s long-duration space missions; special suits to protect pilot blackout under high G-force aircraft maneuvers; information, sensing and application systems for precision management of plant and animal production that optimize economic productivity while minimizing environmental impact; robotic systems based on models of nerve and muscle function; food preservation processes and technologies that ensure food safety.

The educational objective of the BS in Biological Systems Engineering program is to prepare students for engineering practice or for advanced study in fields at the interface of biology and engineering (e.g., food engineering, human/animal systems engineering, and water, soil and environmental engineering). Graduates also may prepare for medical or veterinary school application.

The schedule of studies provides students an early introduction to biological systems engineering, including design, and continues to expand that understanding and design experience throughout the four years of study. Students learn computer experience from the first semester and build capabilities for biological system analysis in each subsequent year. The BS in Biological Systems Engineering is a four-year program. The BS in 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 (Engineering Science).

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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.

BIOL OGY SYSTEMS ENGINEERING DEGREE PROGRAM (128 HOURS) FYIDA

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BsysE 110</td>
<td>2</td>
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<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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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
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</table>
Second Semester  
Bio S 103 [B] (GER) 4  
BSysE 115 1  
Chem 106 [P] (GER) 4  
GenEd 111 [A] (GER) 3  
Math 172 4  

Sophomore Year  
First Semester  
BSysE 210 3  
C E 211 3  
Cpt S 203 2  
Econ 101 [S] or 102 [S] (GER) 3  
Math 273 2  
Phys 201 [P] (GER) 4  
Second Semester  
Bio S 104 [B] (GER) 4  
C E 212 3  
Chem 240, or 340 and 341 4 or 5  
Math 315 3  
Technical Biological Science Elective 3  

Junior Year  
First Semester  
BSysE 320 4  
Ch E 310 3  
C E 315 or Ch E 332 3  
E E 304 2  
Phys 202 [P] (GER) 4  
Complete Writing Portfolio  
Second Semester  
BC/BP 364 or SoilS 421 3  
BSysE 310 3  
BSysE 311 [M] 3  
Ch E 301 or M E 301 3  
Technical Biological Science or Engineering Elective 3  

Senior Year  
First Semester  
Arts & Humanities [H,G,J] (GER) 3  
BSysE 411 or BSysE 420 3  
BSysE 441 3  
Engineering Design Elective 3  
Technical Biological Science Elective 3  
Second Semester  
Engl 402 [W] (GER) 3  
Engineering Design Electives 6  
Intercultural [I,G,K] (GER) 3  
Tier III Capstone [H,G,S,K] (GER) 3  

Transfer Students  
Students who plan to transfer to biological systems engineering at Washington State University from other institutions should coordinate their programs early with the department to select courses that will be applicable to degree requirements. A strong preparation in mathematics, physics, biology, and chemistry and proper selection of electives will minimize the time required to complete bachelor’s degree requirements.

Description of Courses  
Biological Systems Engineering  

BSysE  
110 Engineering Living Systems 2 (1-3) Engineering designing 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 Bio S 103, Chem 105; Cpt S 153 or 203. Application of computer-assisted tools for the engineering analysis and design of biological systems.

310 Biological Dynamics for System Design 4 (3-3) Prereq BSysE 210, C 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 (BSye 310).

311 [M] Project Design I 3 Prereq BSysE 210. Technical, professional, ethical, social, economic issues in engineering design.

320 (481) [M] Mechanics of Biomaterials 4 (3-3) Prereq BSysE 210, C E 211. Composition of biological materials, mechanical and thermal properties, chemical and biological changes. Cooperative course taught by WSU, open to UI students (BSye 386).

339 Perspectives in Biomedical Engineering 1 May be repeated for credit; cumulative maximum 3 hours. Prereq BSysE 210 or c/. Seminar on current issues in biomedical engineering; career options in biomedical engineering; 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 BSye 351 and 353.

352 Introduction to Soil and Water Engineering 3 (2-3) Prereq BSysE 351, C E 315. SoilS 201. Fundamentals of soil and water engineering; agricultural hydrology and hydraulics, erosion control, and water quality. Cooperative course taught by UI (Age 352), open to WSU students.

353 Hydrology 3 Prereq one semester of calculus. Analysis of precipitation and runoff events; principles of climatology, evaporation, infiltration, and snowmelt. Credit not granted for both BSye 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.

398 Undergraduate Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Prereq BSysE 210 or c/. Presentations and discussions of selected topics by students, faculty, and invited speakers. S, F grading.

411 Project Design II 3 (1-6) Prereq BSysE 311 or c/. Detailed design of a biological engineering-related process, machine, structure, or system.

420 Capstone Engineering Design 3 (1-6) Same as M E 420.

430 Physiological Dynamics and Control 3 (2-3) Prereq BSysE 310; Ch E 441, E E 489 or M E 481; Zool 353. Interactions between cells, organs, and whole 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 (BSye 452).

453 Irrigation and Drainage System Design 3 (2-3) Prereq junior standing. Crop water requirements, irrigation scheduling and water management, selection and design of irrigation systems; pump selection. Cooperative course taught by UI (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 (BSye 457).

461 Agricultural Processing and Environment 3 Prereq BSysE 210, C E 315, M E 301 or c/. Materials handling and processing, psychrometrics, heat and mass transfer, pumps and fans, refrigeration, agricultural environments, waste management. Cooperative course taught jointly by WSU and UI (Age 461).

462 Systems in Integrated Crop Management 3 (2-3) Same as Entom 462.


474 Fluid Power and Control Systems 3 (2-3) Circuit components; circuit design and testing; agricultural applications. Credit not granted for both BSye 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).
541 Instrumentation and Measurements 3 (2-3) Prereq Math 172; Phys 102 or 202. Instrumentation systems and measurement concepts, electronic signal-conditioning components and circuitry, digital electronics and microprocessor basics. Cooperative course taught by UI (AgE 541), open to WSU students.

550 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.

560 Conservation Engineering 3 (2-3) Prereq Ch E 332 or M E 404. Principles and practices of food preservation methods based on application of heat.

566 Constrained Wetlands for Pollution Control 2 Prereq graduate standing. Application of constrained 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 B SysE 434; additional requirements. Credit not granted for both B SysE 474 and 574. Cooperative course taught by UI (AgE 574), open to WSU students.

575 Food Quality Instrumentation 3 Graduate-level counterpart of B SysE 478; additional requirements. Credit not granted for both B SysE 475 and 575. Cooperative course taught by WSU, open to UI students (AgE 575).

576 Food Process Engineering Design 3 Graduate-level counterpart of B SysE 482; additional requirements. Credit not granted for both B SysE 482 and 576. Cooperative course taught by WSU, open to UI students (AgE 576).

577 Food Plant Design 3 Graduate-level counterpart of B SysE 486; same as Entom 577. Cooperative course taught by WSU, open to UI students (AgE 577).

578 Food Process Engineering Design 3 Graduate-level counterpart of B SysE 482; additional requirements. Credit not granted for both B SysE 482 and 578. Cooperative course taught by WSU, open to UI students (AgE 578).

582 Advanced Biological Systems Engineering 3 Graduate-level counterpart of BSysE 486; additional requirements. Credit not granted for both BSysE 486 and 582. Cooperative course taught by WSU, open to UI students (BSyE 582).

583 Food Separation Processes Design 3 Prereq 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 583).

584 Thermal Processing of Foods 3 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 584).

585 Water Quality Instrumentation 3 Graduate-level counterpart of BSysE 478; additional requirements. Credit not granted for both BSysE 478 and 585. Cooperative course taught by WSU, open to UI students (BSyE 585).

587 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 587).

592 Advanced Theory and Design of Irrigation Systems 3 (2-3) Prereq B SysE 453 or 590. Design and development of irrigation water application systems. Cooperative course taught by WSU, open to UI students (AgE 592).

594 Advanced Theory and Design of Irrigation Systems 3 (2-3) Graduate-level counterpart of BSysE 496; additional requirements. Credit not granted for both BSysE 496 and 594. Cooperative course taught by WSU, open to UI students (AgE 594).

595 Advanced Theory and Design of Irrigation Systems 3 (2-3) Prereq B SysE 496; additional requirements. Credit not granted for both BSysE 496 and 595. Cooperative course taught by WSU, open to UI students (AgE 595).

596 Advanced Theory and Design of Irrigation Systems 3 (2-3) Graduate-level counterpart of BSysE 496; additional requirements. Credit not granted for both BSysE 496 and 596. Cooperative course taught by WSU, open to UI students (AgE 596).

597 Advanced Theory and Design of Irrigation Systems 3 (2-3) Graduate-level counterpart of BSysE 496; additional requirements. Credit not granted for both BSysE 496 and 597. Cooperative course taught by UI (AgE 597), open to WSU students.

598 Advanced Theory and Design of Irrigation Systems 3 Graduate-level counterpart of BSysE 496; additional requirements. Credit not granted for both BSysE 496 and 598. Cooperative course taught by WSU, open to UI students (AgE 598).

Agricultural Technology and Management

The Department of Biological Systems Engineering prepares students in agricultural technology and management for the application of technology to operations or management in agriculture. The areas of application are: farming operations, services, management of agriculturally oriented businesses, sales, and promotional work in agricultural communities.

Emphasis is placed upon the practical application of technology to agricultural enterprises. This curriculum prepares students to own, operate, and manage their own enterprises or to provide services for private or governmental entities. A wide variety of agricultural technology and technical management courses is available to nonmajors in support of programs in other departments. Many courses can be used as electives by students who wish to explore the field or to use the information for other personal reasons.

The department also offers a minor in Agricultural Technology and Management.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

70
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 Program (122 Hours)**

### Freshman Year

**First Semester**
- Hours
- Ag or AgTM Elective 3
- AgTM 110 3
- Chem 101 [P] (GER) 4
- Engl 101 [W] (GER) 3
- Math 107 or 201 3

**Second Semester**
- Hours
- Ag or AgTM Elective 3
- Arts & Humanities [H,G] (GER) 3
- Chem 102 [P] (GER) 4
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 202 [N] (GER) 3

### Sophomore Year

**First Semester**
- Hours
- Bio S 103 [B] (GER) 4
- Chem 240 or Phys 101 [P] (GER) 4
- Cpt S 105 4
- GenEd 110 [A] or 111 [A] (GER) 3

**Second Semester**
- Hours
- Accct 230 3
- Ag Ec 201 [S] (GER) 3
- Ag or AgTM Elective 3
- Bio S 104 [B] or Bot 120 [B] (GER) 4
- Communication [C,W] (GER) 3

### Junior Year

**First Semester**
- Hours
- 300-400-level Ag Ec or Business Elective1 3
- 300-400-level Ag or Business Elective2 3
- AgTM 312 3
- AgTM 331 3
- AgTM 451 1
- Soils 201 3
- Complete Writing Portfolio

**Second Semester**
- Hours
- 300-400-level Ag or Business Elective2 3
- Ag Ec 335 or Mgt 301 3
- AgTM 306 3
- Arts & Humanities [H,G] or Social Science [S,K] (GER) 3
- Dec S 215 or Stat 212 4

### Senior Year

**First Semester**
- Hours
- 300-400-level Ag Ec or Business Elective1,2 3
- 300-400-level Ag or Business Elective3 3
- 400-level Elective 3
- AgTM 315 3
- Intercultural [I,G,K] (GER) 3

**Second Semester**
- Hours
- 300-400-level Ag or Business Elective1 3
- 300-400-level AgTM Elective 3
- AgTM 433 [M] 3
- Elective 2
- Tier III Capstone (GER) 3

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1 Students must complete one of the following sequences: Ag Ec 340/440, Ag Ec 360/460, Ag Ec (350 or 370)/450 [M] or two 300-level business courses chosen from the required list for business minors.

2 During the junior or senior year, students must take one more writing in the major course [M] in addition to AgTM 433 [M], for a total of two [M] courses.

### 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 Machinery Systems 3 (2-3) Principles, materials of construction, care, capacity of 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.

312 Engines and Tractors 3 (2-3) Principles of engine operation, fuels, combustion, efficiency, power transmission, energy conversion, power measurement, tractor safety and costs. Credit not granted for both AgTM 312 and 409. Field trips required. Cooperative course taught by WSU, open to UI students (ASM 312).

315 Irrigation Systems and Water Management 3 (2-3) Prereq Math 101; Soils 201. Principles of irrigation and drainage, water measurement, irrigation methods and practices, selection of irrigation system components. Cooperative course taught jointly by WSU and UI (ASM 315).

331 Electrical Power Systems for Agriculture 3 (2-3) Basic electricity, wiring, and electrical applications in agricultural production. Cooperative course taught jointly by WSU and UI (ASM 331).

346 Landscape Irrigation Systems 2 (1-3) Soil-water-plant-atmosphere relations; pumps and pumping; layout, construction and operation of irrigation systems for turf and landscape plantings.

402 Methods, Materials, and Machines for Teaching Ag Mechanics 3 (1-6) Prereq AgTM 201, 203; 9 hours in Educ. Development of shop programs in project planning, demonstrations, and skills performance; safety and management of materials, tools, and machines.

403 Laboratory Projects Teaching Techniques 1 (1-3) May be repeated for credit; cumulative maximum 2 hours. Teaching techniques for laboratory projects in agricultural mechanics.

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 3 Analysis, interpretation, and management of health and safety issues in agriculture; use of health and safety materials and industry codes. Cooperative course taught by WSU, open to UI students (ASM 413).

416 Mobile Hydraulics 3 (2-3) Fluid power principles applied to the operation, selection, and maintenance of agricultural 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).

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.

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 academic learning. S, F grading.

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

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).
**Degree Program Requirements**

### AGRICULTURE

Honors students complete Honors Requirements in place of General Education Requirements.

The Department of Biological Systems Engineering offers a flexible course of studies that allows students to prepare themselves for a broad range of careers in agriculture while earning a Bachelor of Science in Agriculture degree. Students can choose from three majors: General Agriculture, Agricultural Education and Agricultural Communications. In each major, emphasis is placed on gaining a solid background in the agricultural sciences while studying specific subjects that prepare graduates for their chosen fields.

### GENERAL AGRICULTURE DEGREE PROGRAM (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 conservationists in the Natural Resources Conservation Service, students must have 15 hours in soils is required. SoilS 201, 301, 413, 421, and 451 are recommended.

#### Freshman Year

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<tr>
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<td>GenEd 110 [A] (GER)</td>
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#### Sophomore Year

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#### Junior Year

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<td>Ag Elective</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Complete Writing Portfolio</td>
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<th>Senior Year</th>
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<td>Tier III Capstone (GER)</td>
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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.

### AGRICULTURAL EDUCATION DEGREE PROGRAM (134 HOURS)  **FYDA**

The agricultural education major prepares students to teach high school agriculture. A minimum of 46 hours in agricultural sciences is required for graduation.

This course of study leads to the degree of Bachelor of Science in Agriculture. The program includes minimum requirements for initial teacher certification.

At least 40 of the total hours required for this degree must be in 300-400-level courses, with at least 20 hours in agriculture. Students electing a major in agricultural education must complete at least 6 hours in Communication Proficiency, 3 hours in Arts and Humanities, 6 hours in Social Sciences, 3 hours in Mathematics, 8 hours in Biological Sciences, 8 hours in Physical Sciences, 41 hours in professional education. The program requires a minimum of 134 semester hours for graduation. Students must take all core agriculture courses plus 15 additional credits in agriculture from the College of Agriculture and Home Economics. Students must also meet the College of Education certification requirements for entry into the program.

#### Freshman Year

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<td>H D 205 [C] (GER)</td>
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#### Sophomore Year

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#### Junior Year

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#### Senior Year

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#### Description of Courses

**Agricultural Education**

- **Ag Ed 342 Methods of Teaching Agriculture and Home Economics**
  3 Prereq T & L 303 or c/l. Curriculum development for agriculture and home economics.

- **345/346 Industrial Safety and Hygiene**
  1 Safety and industrial hygiene principles; federal and state regulations. Required for vocational certification.

- **407 Directed Teaching, Agriculture and Home Economics**
  V 4-16 Prereq Ag Ed 342 or 442. Supervised teaching in public schools for agriculture 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.

- **442 Program Planning in Agricultural Education**
  2 Prereq Ag Ed 342. Organization and management of a total vocational agricultural program.
FIRST AND SECOND YEAR REQUIREMENTS

Requirements for the first two years are common to both degree programs:

Freshman Year

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<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Elective&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
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<tr>
<td>Bio S 103 [B] (GER)</td>
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<tr>
<td>Com 101</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>H D 205 [C] (GER)</td>
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Second Semester

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<tr>
<td>Bio S 104 [B] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<td>Psych 105 [S] (GER)</td>
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Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
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<tr>
<td>Chem 101 [P] (GER)</td>
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<tr>
<td>Engl 201 [W] (GER)</td>
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<tr>
<td>Stat 212 [N] (GER)</td>
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Second Semester

<table>
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<tr>
<td>300-400-level Ag Requirement&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>Ag Requirement&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Com 245</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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BROADCAST MEDIA DEGREE PROGRAM (131 HOURS) ✔FYDA

Junior Year

<table>
<thead>
<tr>
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<th>Hours</th>
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<tbody>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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</tr>
<tr>
<td>Com 295</td>
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<td>Complete Writing Portfolio</td>
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Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Ag Elective&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>300-400-level Ag Requirement&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>Communication Elective</td>
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<tr>
<td>P R 312</td>
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Senior Year

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<tr>
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<tr>
<td>Com 409</td>
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<td>300-400-level Ag Requirement&lt;sup&gt;1&lt;/sup&gt;</td>
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<td>P R 313 [M]</td>
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Second Semester

<table>
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<th>Hours</th>
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<tbody>
<tr>
<td>Bdclt 355</td>
</tr>
<tr>
<td>Bdclt 365 [M]</td>
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<tr>
<td>Com Elective</td>
</tr>
<tr>
<td>P R 412</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
</tr>
</tbody>
</table>

FYDA

1 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.

PRINT MEDIA DEGREE PROGRAM (131 HOURS)

Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>300-400-level Ag Requirement&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>P R 312</td>
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Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Com Elective&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>P R 412</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
</tr>
</tbody>
</table>

Program in Biology

The introductory biological science courses provide background in the concepts common to life sciences and an overview of the diversity of animals, plants, and microorganisms. They meet General Education Requirements and may be prerequisite for courses in botany, microbiology, and zoology. Advanced biological science courses probe specific areas in depth. This program leads to the degrees of Bachelor of Science in Biology and Master of Science in Biology.

Four options are available for the Bachelor of Science degree: biology education, botany, general biology, and prephysical therapy (prehealth). A minor in biology is offered.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements. 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 the biological sciences with [M] designation are needed to satisfy the writing in the major university graduation 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.

In addition to the above requirements, students select one of the following degree programs: Biology Education; Botany; General Biology; and Prephysical Therapy (Prehealth).

**FIRST YEAR REQUIREMENTS**

The first year requirements are common to all biology degree programs:

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio S 103 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio S 104 [B] (GER)</td>
<td>4</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>
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**BIOLOGY EDUCATION DEGREE PROGRAM (137 HOURS)**

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>Chem 2401</td>
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<tr>
<td>ComSt 102 [C] (GER)</td>
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</tr>
<tr>
<td>Phys 101 [P] (GER)</td>
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</tr>
<tr>
<td>Psych 105 [S]</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BC/BP 364</td>
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<tr>
<td>Engl 201 [W], 301 [W], or 302 [W] (GER)</td>
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</tr>
<tr>
<td>GenCB 301</td>
<td>4</td>
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<tr>
<td>Phys 102 [P] (GER)</td>
<td>4</td>
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**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Chem 220</td>
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</tr>
<tr>
<td>Chem 222</td>
<td>2</td>
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<tr>
<td>T &amp; L 300</td>
<td>3</td>
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<tr>
<td>T &amp; L 301</td>
<td>1</td>
</tr>
<tr>
<td>T &amp; L 303</td>
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<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>
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<td>3</td>
</tr>
<tr>
<td>Bot 320</td>
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</tr>
<tr>
<td>Bot 332</td>
<td>4</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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<table>
<thead>
<tr>
<th>Senior Year</th>
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<tbody>
<tr>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Bot 405</td>
<td>3</td>
</tr>
<tr>
<td>Bot 499</td>
<td>2</td>
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<tr>
<td>Degree Program Elective2</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Bot 448, 460, or 462</td>
<td>3</td>
</tr>
<tr>
<td>Bot 450</td>
<td>3</td>
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<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>7 or 8</td>
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1 Pre-med students and those interested in advanced degrees should take Chem 340, 341, 342, 343 (a one-year course in organic chemistry).

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Phys 101 [P] (GER)</td>
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**Botany Degree Program (120 Hours)**

**Sophomore Year**

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<tbody>
<tr>
<td>Bot 405</td>
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<td>Bot 499</td>
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<td>Degree Program Elective2</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Bot 448, 460, or 462</td>
<td>3</td>
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<tr>
<td>Bot 450</td>
<td>3</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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<tr>
<td>Electives</td>
<td>7 or 8</td>
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</table>

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

**Directed Teaching--Fifth Year**

| T & L 415 | 16 |

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Bio S 372 [M]</td>
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<td>Electives</td>
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**Second Semester**

<table>
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<tr>
<th>Hours</th>
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**General Biology Degree Program (120 Hours)**

**Sophomore Year**

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<td>Chem 2401</td>
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<table>
<thead>
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<th>Hours</th>
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<tbody>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td>Psych 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Bio S 372 [M]</td>
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<tr>
<td>Electives</td>
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**Second Semester**

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<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Complete Writing Portfolio</td>
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**Prephysical Therapy (Prehealth) Degree Program (120 Hours)**

**Sophomore Year**

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<tbody>
<tr>
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</tr>
<tr>
<td>Phys 101 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Psych 105 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Soc 101 [S] (GER)</td>
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<table>
<thead>
<tr>
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<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Micro 101 or 301</td>
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<td>Phys 102 [P] (GER)</td>
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<tr>
<td>Zool 251</td>
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**Junior Year**

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<th>First Semester</th>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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</tr>
<tr>
<td>Psych 333</td>
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<tr>
<td>Electives</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Complete Writing Portfolio</td>
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74
Intercultural [I.G.K] (GER) 3
Psych 361 3
Zool 315 4

Senior Year
First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Bio S 490 [M]</td>
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<td>Biology Elective</td>
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<tr>
<td>Kin 362</td>
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<tr>
<td>Electives</td>
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Second Semester

<table>
<thead>
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<th>Hours</th>
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<tbody>
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<td>Kin 463</td>
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<td>Tier III Capstone (GER)</td>
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</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Pre-med students and those interested in advanced degrees should take Chem 340, 341, 342, 343 (a one-year course in organic chemistry).
2 Micro 301 is preferred.

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, GenCB 301, and Bio S 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.

Preparation for Graduate Study

Students with undergraduate majors in such fields as microbiology, biology, botany, zoology, and plant or animal sciences in the College of Agriculture and Home Economics may be prepared for graduate study in biology. Graduate Record Examination scores from the general aptitude and advanced biology sections are required.

Description of Courses

Biological Science

Bio S 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 Bio S 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 Bio S 102 and 101, 103 or 105.

103 [B] Introductory Biology 4 (3-3) Prereq one semester Chem or c/l. 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 Bio S 103 and 101, 102, or 105.

104 [B] Introductory Biology 4 (3-3) Prereq Bio S 101 or 102 with a grade of A or B may be substituted; two semesters Chem or c/l. Continuation of Bio S 103. Biology of organisms; plants, animals, bacteria, ecology, and evolution.

105 [B] Biological Science Laboratory 1 (0-3) Prereq college-level nonlaboratory general biology course. Elements of structure and function of organisms. For non-majors in the biological sciences. Credit not granted for more than one of Bio S 102, 103, 105.

201 [B] Contemporary Biology 1 Prereq Bio S 101, 102, 103, Bot 120, or Micro 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.

372 [M] General Ecology 4 (3-3) Prereq Bio S 104, one semester Chem. Relationship of organisms with physical and biotic components of their environment; at the population, community, and ecosystem level.

401 [T] Plants and People 3 Prereq Bio S 102, 104, or Bot 120; completion of one Tier I and three Tier II courses. Relationships between plants and people, especially cultural and economic applications of plants.

430 Methods of Teaching Science 3 (2-3) Prereq T & L 303; 12 hours science. Methods, philosophy, and structure of science; application in teaching middle and secondary school science courses.


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.


491 Physical Therapy Clinical Experience V 1-4 May be repeated for credit; cumulative maximum 20 hours. Prereq Psych 105; Zool 315; major in biology. Junior standing. By interview only. Work experience under supervision of a qualified professional in treatment of human physical disabilities. S, F grading.

495 Internship in Biology V 2-4 May be repeated for credit; cumulative maximum 8 hours. Prereq major in Bio S. By interview only. Experience in work related to specific career interests. S, F grading.

498 [M] Senior Thesis 3 Prereq senior standing, 4 research hours. Experimental/literature research leading to written thesis and oral examination.

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

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

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

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

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

Department of Botany


Botany is the basic plant science. The courses offered in the department are designed to meet the needs of three groups of students: (1) those planning to specialize in an applied science such as agronomy, microbiology, forestry, horticulture, pharmacy, plant pathology, range management, and wildlife management; (2) those wishing to study a biological science for its cultural or educational value; and (3) those who plan to specialize in botany. Those in the first group should desire to obtain as comprehensive a knowledge of the field as time will permit. The second group may find one year of introductory work sufficient. For the third group the department offers courses leading to advanced degrees in botany.

The department has laboratories and equipment suitable for graduate study in the major areas of botany and special facilities for work in the fields of biochemistry, biophysics, physiology, anatomy, developmental biology, ecology, molecular systematics, population biology, and ultrastructure. The department offers courses of study leading to the degrees of Master of Science and Doctor of Philosophy (Botany).

Preparation for Graduate Study

Before undertaking graduate study, a student should have completed substantially the equivalent of the schedule of studies shown under the biology program for the botany option.

Undergraduate majors in such subjects as the applied plant sciences, the biological sciences, and the physical sciences may be well prepared for graduate study in this department. Students having deficiencies are given adequate opportunity to fulfill departmental requirements. Applicants should submit scores of the general aptitude test of the Graduate Record Examination. (The advanced GRE test in biology is recommended.)

Description of Courses

Botany

Bot

120 [B] Introduction to Botany 4 (3-3) A survey of the plant kingdom; structure and function of vascular plants.

320 Introductory Plant Physiology 4 (3-3) Prereq Bio S 104 or Bot 120; org chem or c/l. Water relations, mineral nutrition, photosynthesis, respiration, and growth of plants.
325 Plant Biotechnology 3 Prereq Bot 120, GenCB 301. Introduction to the genetic engineering of plants.

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

405 Principles of Organic Evolution 3 Same as Zool 405. Credit not granted for both Bot 405 and 505.

406 Microtechnique 4 (2-6) 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 Bot 406 and 506.

410 Plant Anatomy 4 (2-6) Prereq Bot 120. Developmental anatomy and morphology of vascular plants; economic forms. Credit not granted for both Bot 410 and 510.

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

429 General Plant Pathology 3 Same as Pl P 429. 430 Principles of Plant Systematics 3 Prereq Bot 332. Systematic theory: history and current views; approaches to phylogeny reconstruction and classification. Credit not granted for both Bot 430 and 530.

441 Agrostology 3 Prereq Bot 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.

448 Evolutionary Ecology of Populations 3 Same as Zool 448. Credit not granted for both Bot 448 and 548.

450 Introduction to Cell Biology 3 Same as GenCB 450.

453 Directed Problems in Cell Biology 1 Same as GenCB 453.

460 Ecophysiology 3 Prereq Bio S 372; Bot 320. Relationships of biotic and abiotic environment to plant distribution and evolution through study of physiological processes. Credit not granted for both Bot 460 and 560.


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

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

504 Experimental Methods in Plant Physiology 3 (2-3) Rec Bot 320. Advanced techniques and instrumental methods applicable to research in plant physiology.

505 Principles of Organic Evolution 3 Graduate counterpart of Bot 405; additional requirements. Credit not granted for both Bot 405 and 505.

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

510 Plant Anatomy 4 (2-6) Graduate-level counterpart of Bot 410; additional requirements. Credit not granted for both Bot 410 and 510.

511 Plant Cell Biology 3 Function of the plant cell with emphasis on current research; topics include membrane biology, protein targeting, and molecular signaling.

512 Molecular Mechanisms of Plant Development 3 Prereq Bot 320. Physiology of growth; metabolism during development and reproduction.

513 Plant Metabolism 3 Prereq BC/BP 364, Bot 320. Metabolic processes unique to plants, including the primary incorporation of nitrogen, sulfur, carbon dioxide and phosphate into biomolecules.

515 Seminar in Plant Physiology 1 May be repeated for credit. Same as CropS 515.

516 Water Relations and Intercellular Transport 3 Prereq Bot 320. Movement of water and solutes in plants, from the cellular level to the whole-plant level.

517 Stress Physiology of Plants 3 Graduate-level counterpart of Bot 417; additional requirements. Credit not granted for both Bot 417 and 517.

518 Photosynthesis, Plant Respiration, and Plant Productivity 3 Rec BC/BP 364 or Bot 320. Photosynthesis, plant respiration and the interrelationship of those biochemical, physiological, and environmental factors which determine plant productivity.

520 Conservation Genetics 2 Same as GenCB 520.

521 Quantitative Genetics 2 Same as GenCB 521.

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

530 Principles of Plant Systematics 3 Graduate-level counterpart of Bot 430; additional requirements. Credit not granted for both Bot 430 and 530.

533 Modern Methods in Systematics 4 (2-6) Rec Bot 430 or Zool 511. Selecting, gathering, and analyzing morphological, cytological, molecular data for phylogenetic and evolutionary studies.

535 Angiosperm Families of the World 3 (2-3) Prereq Bot 332 or 430. Description, classification, and geographic distribution of families of flowering plants of the world.

548 Evolutionary Ecology 3 Same as Zool 548. Credit not granted for both Bot 448 and 548.

560 Ecophysiology 3 Graduate-level counterpart of Bot 460; additional requirements. Credit not granted for both Bot 460 and 560.

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

563 Field Ecology 2 (0-6) Graduate-level counterpart of Bot 463; additional requirements. Credit not granted for both Bot 463 and 563. Cooperative course taught by WSU, open to UI students (Bot 537).

590 Advanced Topics in Botany V 1-4 May be repeated for credit. Recent research in plant 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.

Electron Microscopy

E Mic 406 Microtechnique 4 (2-6) Same as Bot 406. Credit not granted for both E Mic 406 and 506.

506 Microtechnique 4 (2-6) Same as Bot 506. Credit not granted for both E Mic 406 and 506.

507 Electron Microscopy Laboratory 4 (2-6) Prereq one year biology; one year org chem; one year phys; by interview only. Techniques of transmission electron microscopy, especially those applicable to biological materials; theory and practice for electron optics and specimen preparation.

586 Special Projects in Electron Microscopy 2 (0-6) or 3 (0-9) 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.

587 Special Topics in Electron Microscopy 1 May be repeated for credit; cumulative maximum 4 hours. S, F grading.

Departments of Business

SCHOOL OF ACCOUNTING, INFORMATION SYSTEMS AND BUSINESS LAW


DEPARTMENT OF FINANCE, INSURANCE, AND REAL ESTATE

Professor and Department Chair, H. Kerr; Professors, Victor L. Lyon/CCIM Distinguished Professor of Real Estate D. Eley, Brinson Chair of Investment Management J. Kling, G. Petry; Associate Professors, L. Han, M. McNamara, R. Sias; Assistant Professors, V. Armstrong, K. Beller, F. Kerins, H. Turtle, D. Whidbee, Alvin J. Wolff Professor of Real Estate M. Wolverton.

DEPARTMENT OF MANAGEMENT AND DECISION SCIENCES

Professor and Department Chair, M. C. Wang; Professors, D. Baker, J. Cullen, S. Fotopoulos, C. Morgan, R. Reed; Associate Professors, S. Ahn, B. Chen, J. Goodstein, D. Leman, T. Tripp; Assistant Professors, K. Batesfield, V. Jayaraman, K. Kahn, N. Mero, V. Miskin, C. Munson, C. Spell, A. Vaulevan, K. Wade.

DEPARTMENT OF MARKETING

Professor and Department Chair, D. Muehling; Professors, J. Cote, James and Diana Huber Chair of Entrepreneurial Studies R. Markin, J. McCullough, D. Stem, P. Taneja; Associate Professors, P. Henderson, J. Johnson, E. Spangenberg, U. Umeshe; Assistant Professors, G. Giese, S. Fedorikhin, R. Grewal, J. Rose, S. Silverman, D. Sprott.
INTERNATIONAL BUSINESS INSTITUTE
Professor and Director J. McCullough; Professor, P. Tansuhaj; Assistant Professor, J. Rose.

The study of business administration involves the understanding and application of knowledge developed in a wide range of interrelated disciplines, such as accounting, finance and banking, human resources/personnel, international business, management information systems, management, marketing, decision sciences, and real estate. Concepts from mathematics, sociology, psychology, anthropology, economics, and other disciplines are integrated in order to provide the individual with both a practical and theoretical understanding of business organization and its functions in our society.

The broad education offered by this curriculum permits the student an almost unlimited range of employment opportunities in business, industry, and government.

The curricula leading to degrees in business administration at both the undergraduate and graduate levels are accredited by AACSB - The International Association for Management Education. The accounting programs are also separately accredited by the AACSB.

Degrees are offered in the Bachelor of Arts in Business Administration, Master of Business Administration, Master of Technology Management, and Doctor of Philosophy. Please refer to page 22 of this catalog for campus specific degree offerings.

The College of Business and Economics, in cooperation with the Division of Humanities and Social Sciences, offers a joint Bachelor of Liberal Arts and a Master of Business Administration (4 & 1) Program. Students selected for this program complete a BA in liberal arts with a business core and receive guaranteed admission into the MBA Program in Business Administration, allowing them to finish the MBA in one year. Admission to the program is highly selective. For further information, students should contact the Director of Graduate Programs in Business.

The International Business Institute (IBI) was established to coordinate international activities in the College of Business and Economics. The IBI draws faculty, staff, and students together to achieve excellence in the internationalization of business education, research, and service. It administers the international business curriculum and advises all international business majors. The IBI aims at encouraging the business and economics faculty, staff, and students to be involved in interesting and exciting activities in the global business of the new millennium.

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, Engl 101, 102, Math 201, 202, MIS 150, 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 172 or 201 (Math 201 recommended); Math 171 or 202 (Math 202 recommended); MIS 150. Enrollment in 300-level CBE business courses is restricted to those students who have met these requirements and have certified as BA or HA majors.

All students majoring in business administration must complete 50% of their course work outside of the College of Business and Economics. Nine hours of economics and 4 hours of Dec S 215 are counted as outside of the CBE to meet this 50% rule.

Residence Requirements: 1) At least 50% of business core and major specialization course requirements must be taken at WSU; 2) At least nine 300-400-level business/economics courses must be taken in residence at WSU; and 3) The last 30 hours of course work must be taken at WSU.

The chair of the department and/or the dean of the college must approve in writing any portion of the 300-400-level credit which is to be satisfied by transfer, correspondence, independent study, or other credit, which does not carry WSU grade points. Additional transfer, correspondence, and independent study credit (within university limits on these credits) may count toward the 120 hours required for the degree and/or satisfy requirements other than major courses.

Only general elective courses that are not 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.

Honors Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

For all degree programs, students must complete 53 hours outside of the College of Business and Economics. Enrollment in 300-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 172 or 201; Math 171 or 202; MIS 150 and certified as BA majors.

ACCOUNTING DEGREE PROGRAM (120 HOURS) 

The objective of the baccalaureate program with a concentration in accounting is to provide basic conceptual accounting and business knowledge as a foundation for accounting career development. This would provide preparation for careers in public, private, governmental, and non-profit accounting.

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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Second Semester

<table>
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<th>Course</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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<tr>
<td>Math 172 or 201</td>
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<td>MIS 150</td>
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Sophomore Year

First Semester

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<tr>
<td>Acctg 230</td>
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<tr>
<td>Econ 201</td>
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<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] or 202 [N] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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Second Semester

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Acctg 231</td>
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<tr>
<td>B Law 210</td>
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</tr>
<tr>
<td>ComSt 102 [C] (GER)</td>
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<tr>
<td>Dec S 215</td>
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<tr>
<td>Phil 360 or Pol S Elective</td>
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Junior Year

First Semester

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<tbody>
<tr>
<td>Acctg 330</td>
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<tr>
<td>Acctg 335 or 338</td>
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<tr>
<td>Fin 325</td>
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<tr>
<td>MIS 350</td>
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<td>Mktg 360</td>
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<td>Complete Writing Portfolio</td>
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Second Semester

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<td>300-400-level Engl [W] (GER)</td>
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<tr>
<td>Acctg 331</td>
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</tr>
<tr>
<td>Acctg 335 or 338</td>
<td>3</td>
</tr>
<tr>
<td>Dec S 340</td>
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<tr>
<td>Mgt 301</td>
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Senior Year

First Semester

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<th>Course</th>
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<tr>
<td>Acctg 430, 431, 435, Econ 320, 340, 349</td>
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<tr>
<td>Fin 425, or 427</td>
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</tr>
<tr>
<td>Acctg 433 [M]</td>
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<tr>
<td>Acctg 434</td>
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<td>Soc or Psych [S,K] (GER)</td>
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<td>Tier III Capstone (GER)</td>
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Second Semester

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<tr>
<td>Acctg 439 [M]</td>
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<tr>
<td>Acctg or General Elective</td>
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<tr>
<td>B Law 410 or 411</td>
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</tr>
<tr>
<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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</tbody>
</table>

1 For a total of 7 hours of Biological and Physical Sciences.
2 Math 201 and 202 are strongly recommended.
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**  
Arts & Humanities [H, G] (GER) 3  
Econ 101 [S] or Econ 102 [S] (GER) 3  
Engl 101 [W] (GER) 3  
GenEd 110 [A] or 111 [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 172 or 201 3  
MIS 150 2

**Sophomore Year**

**First Semester**  
Acctg 230 3  
GenEd 110 [A] or 111 [A] (GER) 3  
Math 171 [N] or 202 [N] (GER) 3  
Physical Sciences [P] (GER) 3  
Elective 3

**Second Semester**  
Acctg 231 3  
Blaw 210 3  
Dec S 215 4  
Foreign Com [C] (GER) 3  
Soc or Psych [S, K] (GER) 3

**Junior Year**

**First Semester**  
300-400-level Eng [W] (GER) 3  
Fin 325 3  
Mgt 301 3  
MIS 350 3  
Mktg 360 3  
Complete Writing Portfolio

**Second Semester**  
300-400-level Business or Econ Elective 3  
300-400-level Econ Elective 3  
Acctg 338 3  
Dec S 340 3  
Elective 3

**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 460 [M] 3  
Pol S Elective 3  
Tier III Capstone (GER) 3

**BUSINESS LAW DEGREE PROGRAM (120 HOURS)**

Preparation for careers in consulats, embassies and the State Department, in criminal justice administration, court administration, public utility administration, labor union administration, and government agency administration; also private business dealing with the foregoing.

**Freshman Year**

**First Semester**  
Arts & Humanities [H, G] (GER) 3  
Econ 101 [S] or Econ 102 [S] (GER) 3  
Engl 101 [W] (GER) 3  
GenEd 110 [A] (GER) 3  
Tier I Science [Q] (GER) 3

**Second Semester**  
Biological Sciences [B] (GER) 3  
Econ 101 [S] or Econ 102 [S] (GER) 3  
Intercultural [I, G, K] (GER) 3  
Math 172 or 201 3  
MIS 150 2

**Sophomore Year**

**First Semester**  
Acctg 230 3  
Blaw 210 3  
Dec S 215 4  
Foreign Com [C] (GER) 3  
Soc or Psych [S, K] (GER) 3

**Junior Year**

**First Semester**  
300-400-level Eng [W] (GER) 3  
2 Math 201 and 202 are strongly recommended.  
3 For a total of 7 hours of Biological and Physical Sciences.  
7 For a total of 7 hours of Biological and Physical Sciences.  
12 This total must consist of:  
6 of Group A Electives 3  
6 of Group A Electives 3  
6 of Group A Electives 3  
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6 of Group A Electives 3  
6 of Group A Electives 3  
6 of Group A Electives 3  
6 of Group A Electives 3  
1 For a total of 7 hours of Biological and Physical Sciences.  
2 Math 201 and 202 are strongly recommended.  
3 Group A electives consist of:  
B Law 410, 411, 412 [M], 415 [M], 416 [M]; Com 415; Crm J 320, 381, 420 [M]; ES/RP 335 [M], 444; Phil 360; Pol S 300, 402, 404 [M], 443, three of which must be B Law.
### DECISION SCIENCE DEGREE PROGRAM (120 HOURS) ✔FYDA

Preparation for careers in business or government in the following areas: total quality management, statistical consulting and data analysis, operations planning and management.

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H, G] (GER)</td>
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</tr>
<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
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<tr>
<td>Eng 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Tier I Science [Q] (GER)</td>
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<table>
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<th>Second Semester</th>
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<tbody>
<tr>
<td>Biological Sciences [B] (GER)¹</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>Math 172 or 201²</td>
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<tr>
<td>MIS 150</td>
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#### Sophomore Year

<table>
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<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>Acctg 230</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Math 171 [N] or 202 [N] (GER)²</td>
<td>3 or 4</td>
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<tr>
<td>Physical Sciences [P] (GER)³</td>
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<tr>
<td>Elective</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Acctg 231</td>
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</tr>
<tr>
<td>B Law 210</td>
<td>3</td>
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<tr>
<td>Dec S 215</td>
<td>4</td>
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<tr>
<td>Oral Com [C] (GER)</td>
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<td>Soc or Psych [S,K] (GER)</td>
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#### Junior Year

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<td>Mktg 360</td>
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<td>Complete Writing Portfolio</td>
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<th>Second Semester</th>
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<tbody>
<tr>
<td>300-400-level Econ Elective</td>
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<td>300-400-level Engl [W] (GER)</td>
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<td>300-400-level General Elective</td>
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<tr>
<td>Dec S 340</td>
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<tr>
<td>Dec S 412 [M]</td>
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#### Senior Year

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<td>Mgt 491 or 492</td>
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<td>Pol S Elective</td>
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<td>Two Of: Dec S 418, 440 [M]; MIS 372 [M]</td>
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</table>

### ENTREPRENEURSHIP DEGREE PROGRAM (120 HOURS) ✔FYDA

The entrepreneurship major has been developed for students interested in venture management, new venture startups, and small business and the management of family firms.

#### Freshman Year

<table>
<thead>
<tr>
<th>First 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>Econ 101 [S] or Econ 102 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Eng 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Elective</td>
<td>3</td>
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</tbody>
</table>

### Finance Degree Program (120 Hours) ✔FYDA

Preparation for careers in financial departments of businesses, commercial and investment banks, governmental financial agencies, and other financial institutions.

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tr>
<td>Elective</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>
<td>3</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] or 202 [N] (GER)²</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)³</td>
<td>3 or 4</td>
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<tr>
<td>Elective</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Acctg 231</td>
<td>3</td>
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<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>
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<tr>
<td>Pol S Elective</td>
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#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Dec S 344</td>
<td>3</td>
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<tr>
<td>Fin 325</td>
<td>3</td>
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<tr>
<td>Mgt 301</td>
<td>3</td>
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<tr>
<td>MIS 350</td>
<td>3</td>
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<tr>
<td>Mktg 360</td>
<td>3</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>300-400-level Econ Elective</td>
<td>3</td>
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<tr>
<td>300-400-level Engl [W] (GER)</td>
<td>3</td>
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<tr>
<td>300-400-level General Elective</td>
<td>3</td>
</tr>
<tr>
<td>Dec S 340</td>
<td>3</td>
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<tr>
<td>Dec S 412 [M]</td>
<td>3</td>
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#### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Mgt 491 or 492</td>
<td>3</td>
</tr>
<tr>
<td>Pol S Elective</td>
<td>3</td>
</tr>
<tr>
<td>Two Of: Dec S 418, 440 [M]; MIS 372 [M]</td>
<td>6</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Two of: 300-400-level Business Elective or MIS 271, 472 [M], 474</td>
<td>6</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>6</td>
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</table>

### Notes

1. For a total of 7 hours of Biological and Physical Sciences.
2. Math 201 and 202 are strongly recommended.

1. For a total of 7 hours of Biological and Physical Sciences.
2. Math 201 and 202 are strongly recommended.
3. Acctg 331 or 338.
4. Any approved 300- or 400-level courses in accounting, decision science, economics, finance,
**INTERNATIONAL BUSINESS DEGREE PROGRAM (120 HOURS)**  ✔FYDA

Preparation for careers with multinational corporations, governmental and intergovernmental agencies both domestic and international.

Students must complete the following Foreign Study Curriculum except for students studying at WSU who reside outside the US and who attended at least one year of secondary school in a foreign country. One year of foreign language taken at WSU is required except for non-native speakers of English from outside the US who may substitute satisfactory TOEFL scores. Bilingual Americans may substitute satisfactory ETS scores or certification by a WSU faculty member who is a native speaker of the target language.

### 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 or 4
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Intercultural [I,G,K] (GER) 3
- Math 172 or 201 3
- MIS 150 2

### Sophomore Year

#### First Semester

- Acctg 230 3
- GenEd 111 [A] (GER) 3
- Math 171 [N] or 202 [N] (GER) 3 or 4
- Physical Sciences [P] (GER) 3 or 4
- Elective 3

#### Second Semester

- Acctg 231 3
- B Law 210 3
- Dec S 215 4
- Oral Com [C] (GER) 3
- Soc or Psych [S,K] (GER) 3

### Junior Year

#### First Semester

- 300-400-level Eng [W] (GER) 3
- Fin 325 3
- Mgt 301 3
- MIS 350 3
- Mkgt 360 3
- Complete Writing Portfolio

#### Second Semester

- Dec S 340 3
- Econ 350 3
- Mgt 401 [M] 3
- Mgt 450 3
- Elective 3

### Senior Year

#### First Semester

- Mgt 455 3
- Three of: 400-level business elective; Dec S 412 [M]; Econ 450; MlS 448; Psych 412 9
- Elective 3

#### Second Semester

- Mgt 456 [M] 3
- Mgt 491 or 492 3
- Pol S Elective 3
- Tier III Capstone (GER) 3
- Elective 3

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1. For a total of 7 hours of Biological and Physical Sciences.  
2. Math 201 and 202 are strongly recommended.
MANAGEMENT DEGREE PROGRAM (120 HOURS)  ✔FYDA

Students may emphasize preparation for one of three careers in this major: (1) careers as production executives in manufacturing and enterprises and for other administrative positions in business and government for which production training is useful and desirable; (2) careers for which an understanding of international business is desirable; and (3) careers in management which require an understanding of people in organizations as well as the production function.

**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

*Hours*
- 3

*Second Semester*
- Biological Sciences [B] (GER) 1 3 or 4
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Intercultural [I,G,K] (GER) 3
- Math 172 or 201 3
- MIS 150 2

*Hours*
- 10

**Sophomore Year**

*First Semester*
- Acctg 231 3
- GenEd 111 [A] (GER) 3
- Math 171 [N] or 202 [N] (GER) 3
- Physical Sciences [P] (GER) 1 3 or 4
- Elective 3

*Hours*
- 13

*Second Semester*
- Acctg 231 3
- B Law 210 3
- Dec S 215 4
- Oral Com [C] (GER) 3
- Pol S Elective 3

*Hours*
- 13

**Junior Year**

*First Semester*
- 300-400-level Engl [W] (GER) 3
- Fin 325 3
- Mgt 301 3
- MIS 350 3
- Mkgt 360 3
- Complete Writing Portfolio

*Hours*
- 14

*Second Semester*
- 300-400-level Econ Elective 3
- Dec S 340 3
- Mgt 401 [M] 3
- Soc or Psych [S,K] (GER) 3
- Elective 3

*Hours*
- 13

**Senior Year**

*First Semester*
- Mgt 491 or 492 3

*Hours*
- 3

Three of: Dec S 412 [M], 440 [M], 344; MIS 448; Mgt 450, 453, 489 9
Elective 3

**Second Semester**

*Hours*
- 3

**Junior 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

*Hours*
- 13

*Second Semester*
- Biological Sciences [B] (GER) 1 3 or 4
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Intercultural [I,G,K] (GER) 3
- Math 172 or 201 3
- MIS 150 2

*Hours*
- 10

**Sophomore Year**

*First Semester*
- Acctg 231 3
- GenEd 111 [A] (GER) 3
- Math 171 [N] or 202 [N] (GER) 3
- Physical Sciences [P] (GER) 1 3 or 4

*Hours*
- 13

*Second Semester*
- Acctg 231 3
- B Law 210 3
- Dec S 215 4
- Oral Com [C] (GER) 3

*Hours*
- 13

**Junior Year**

*First Semester*
- Fin 325 3
- Mgt 301 3
- MIS 350 3
- Mkgt 360 3
- Complete Writing Portfolio

*Hours*
- 14

*Second Semester*
- 300-400-level Engl [W] (GER) 3
- Dec S 340 3
- Mgt 401 [M] 3
- Soc or Psych [S,K] (GER) 3
- Elective 3

*Hours*
- 13

**Senior Year**

*First Semester*
- Econ 300-400-level Elective 3

*Hours*
- 3

MIS 474 3
Mgt 491 or 492 3
One of: Group A Elective 3
Soc or Psych [S,K] (GER) 3

**Second Semester**

*Hours*
- 3

**MARKETING DEGREE PROGRAM (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

*Hours*
- 13

*Second Semester*
- Biological Sciences [B] (GER) 1 3 or 4
- Econ 101 [S] or Econ 102 [S] (GER) 3
- Intercultural [I,G,K] (GER) 3
- Math 172 or 201 3
- MIS 150 2

*Hours*
- 10

**Sophomore Year**

*First Semester*
- Acctg 231 3
- B Law 210 3
- Dec S 215 4
- Oral Com [C] (GER) 3
- Pol S Elective 3

*Hours*
- 13

*Second Semester*
- Acctg 231 3
- B Law 210 3
- Dec S 215 4
- Oral Com [C] (GER) 3
- Soc or Psych [S,K] (GER) 3

*Hours*
- 13

**Junior Year**

*First Semester*
- 300-400-level Engl [W] (GER) 3
- Fin 325 3
- Mgt 301 3
- MIS 350 3
- Mkgt 360 3
- Complete Writing Portfolio

*Hours*
- 14

*Second Semester*
- 300-400-level Engl [W] (GER) 3
- Dec S 340 3
- Mgt 401 [M] 3
- Soc or Psych [S,K] (GER) 3
- Elective 3

*Hours*
- 13

Group A Elective [M] 3
Group B Elective 3
MIS 350 3
Mktg 467 3
Elective 3

*Hours*
- 13

**Senior Year**

*First Semester*
- Econ 300-400-level Elective 3

*Hours*
- 3

MIS 474 3
Mgt 491 or 492 3
One of: Group A Elective 3
Soc or Psych [S,K] (GER) 3

**Second Semester**

*Hours*
- 3


1 For a total of 7 hours of Biological and Physical Sciences.
2 Math 201 and 202 are strongly recommended.
3 Math 201 and 202 are strongly recommended.
4 Group A Electives are: I Bus 415, 416 [M], 435, 453, 470, 481, 482 [M], 492 (may not be used under both International Business and Business core), 496, 498, Mkgt 498. No more than 3 hours of 498 may be used.
5 Study Abroad coursework must be approved by I Bus director before it is taken and include the second semester of the foreign language requirement.
Departments of Business

REAL ESTATE DEGREE PROGRAM (120 HOURS)  

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
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Tier I Science [Q] (GER) 3

Second Semester
- Biological Sciences [B] (GER) 3 or 4
- Econ 101 [S] or Econ 102 [S] (GER) 3
- GenEd 111 [A] (GER) 3
- Intercultural [I, G, K] (GER) 3
- Math 172 or 201 3

Sophomore Year

First Semester
- Acctg 230 3
- B Law 210 3
- Math 171 [N] or 202 [N] (GER) 3 or 4
- Soc or Psych [S,K] (GER) 3
- Elective 3

Second Semester
- Acctg 231 3
- Dec S 215 4
- MIS 150 2
- Oral Com [C] (GER) 3
- Physical Sciences [P] (GER) 3 or 4

Junior Year

First Semester
- 300-400-level Engl [W] (GER) 3
- Fin 325 3
- Mgt 301 3
- MIS 350 3
- R E 305 3
- R E 306 or Elective 1
- Complete Writing Portfolio

Second Semester
- 300-400-level Econ Elective 3
- Dec S 340 3
- Mktg 360 3
- Pol S Elective 3
- R E 405 [M] 3

Senior Year

First Semester
- 300-400-level Business Elective 3
- Dec S 340 3
- Ins 321 3
- MIS 350 3

Second Semester
- 300-400-level Business Elective 3
- Ins 322 3
- Ins 420 [M] 3
- Pol S Elective 3
- Elective 3

Minors in Business Specializations

To be eligible to certify in one of the business minors, students must have a cumulative g.p.a. of 2.5. Minors in business specializations require at least 16 hours of credit, 8 of which must be 300-400-level, with an overall g.p.a. of at least a 2.0 in the required courses. Courses for the minors may not be taken pass, fail. A total of 6 hours transfer work may be counted toward the minor requirements for courses at the 100- or 200-level only. All other course work must be taken in residence at WSU. The appropriate department chairperson must approve deviations from the stated requirements.


Finance: Acctg 231, Dec S 215, Fin 325, 421, 427: one of Fin 422, 425, 426, 428 or 481.

Human Resource/Personnel: Dec S 215, Econ 101, Mgt 301, 450, 455; one of Econ 350, 450, Mgt 401, or 456.

Management Information Systems: MIS 153, 271, 350, 372, 472: one of the following, MIS 375, 448, or 474.

Marketing: Mktg 360, 467: four of I Bus 380, 482. Mktg 368, 460, 461, 468, 470, 477, 478, 490, or 496 (3 credits).

Real Estate: R E 305, 306; Fin 409 or R E 409; three of: B Law 414, R E 405, 406, 407, or 408.

Risk Management and Insurance: B Law 210, Econ 102, Ins 320: three of Fin 425, Ins 321, 322, 482, Mktg 368, 460, 461, 468, 470, 477, 478, 490, or 496 (3 credits).

Second Bachelor’s Degree

Students who have received a bachelor’s degree in another area may obtain a Bachelor of Arts degree in Business Administration by presenting total credits of at least 150 hours and by fulfilling the following departmental requirements: Acctg 230, 231; B Law 210; Dec S 215, 340; Econ 101, 102; 300-400-level elective; Engl 300-400 [W]; Fin 325; Math 201, 202: Mgt 301; Mgt 491 or 492; MIS 150, 150; Mktg 360; and the courses required for the student’s chosen major in business.

The second degree can usually be completed in less than two years, depending on the number of business requirements completed as electives for the first undergraduate degree. Second degree students must have completed Acctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Engl 101, Math 201, 202, and MIS 150 before enrolling in 300- or 400-level business courses. Students should consult the CBE Business Advising Office for specific requirements.

Transfer Students

Students planning to transfer to Washington State University at the end of the freshman or sophomore year should follow, as closely as possible, the general and core course requirements set forth above. If this is done, there should be no difficulty in completing the requirements for the bachelor’s degree within the normal period of four years. Students at Washington State community colleges should follow the schedule of studies outlined in the 2 Plus 2 Program brochure. It should also be noted that courses taken at community colleges are not accepted as transferable equivalents to 300-400-level courses at WSU.

Description of Courses

Special Notice: Enrollment in 300-400-level business courses is restricted to students who have certified as BA/HA majors or minors and to juniors and seniors officially certified into other degree programs requiring these business courses.

Accounting

Acctg

230 Introduction to Financial Accounting 3 In- or off-shore corporate financial reporting via the preparation and interpretation of financial statements.

231 Introduction to Managerial Accounting 3 Prereq Acctg 230. Introduction to managerial accounting; generation and use of accounting data for planning and controlling business operations.

330 Intermediate Accounting I 3 Prereq Acctg 230; MIS 150. Theory underlying the determination of income; analysis of financial statements.


335 Introduction to Taxation 3 Prereq Acctg 230, 231. Fundamentals of tax information use in making sound business and financial decisions.

338 Cost Accounting 3 Prereq Acctg 231; Dec S 215; Math 107 or 201; 202; MIS 150. Management uses of cost information; cost systems and system design; cost analysis.

430 Advanced Accounting 3 Prereq Acctg 331. Partnership equities and extended forms of corporate ownerships and entities.

431 Accounting Theory 3 Prereq Acctg 331. Accounting theory and contemporary issues.


434 Accounting for Public Organizations 3 Prereq Acctg 331. Conceptual and procedural accounting issues involving public sector organizations.

435 Individual Income Taxes 3 Prereq Acctg 335. The study of individual income taxes from both compliance and planning perspectives.

436 International Accounting and Taxation 3 Prereq Acctg 231. Comparative accounting systems, foreign currency transactions, transfer pricing, taxation of foreign source income.

438 Advanced Cost Accounting and Management 3 Prereq Acctg 338. Cost/managerial accounting as it is used for decision making and strategic planning; emphasis on budgeting, product cost, and performance measurement.

439 [M] Auditing 3 Prereq Acctg 331, 433; MIS 350. Nature of auditing, generally accepted auditing standards, and audit procedures as related to auditing of financial statements by independent accountants.

498 Accounting Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization. S, F grading.

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

530 Accounting Theory 3 Recent developments with respect to the determination of income and the valuation of assets.

531 Tax Planning for Managers 3 Prereq Acctg 230 and 231; or 550. Fundamentals of tax planning for business decisions; nontechnical and primarily for MBA graduate students.

532 Contemporary Accounting Cases and Problems 3 Accounting theory applied to external financial reporting practices.

533 Administrative Control 3 Managerial evaluation of budgeting, cost accounting, and financial analysis techniques; their utilization in control of operations.

535 Taxation of Partners and Partnerships 3 Prereq Acctg 335. Federal income tax impact on partners and partnerships of forming, operating, and liquidating partnerships.

536 Taxation of Corporations and Stockholders 3 Prereq Acctg 335. Federal income tax impact on corporations and their stockholders from forming, operating, and liquidating corporations.

537 Tax Research and Estate Planning 3 Legal tax research methodology; federal estate and gift taxation and retirement planning.

538 Seminar in Cost/Managerial Accounting 3 Cost concepts, cost and managerial accounting systems; current issues and research in cost and managerial accounting.

539 Seminar in Public Accounting and Auditing 3 Prereq Acctg 439. Public accounting and auditing to present; current issues including statistical sampling and computers.

550 Introduction to Financial and Managerial Accounting 3 Fundamentals of financial and managerial accounting; primarily for graduate students who wish to meet the MBA core requirements in accounting.

596 Doctoral Topics 3 May be repeated for credit; cumulative maximum 15 hours. Advanced topics 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 grading.

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

Business Law

B Law

210 Law and the Legal Environment of Business 3 Fundamentals of business law; the legal system, legal reasoning and the law of contracts, torts, and agency.

410 Law and Government Regulation of Business 3 Prereq B Law 210. Legal aspects of government regulation of business; administrative law, antitrust law, environmental law, and labor law.

411 Law of Business Organizations 3 Prereq B Law 210. Law of partnerships, corporations, securities regulation, secured transactions and bankruptcy; needed by CPA candidates.

414 [M] Law of Real Estate 3 Prereq B Law 210. Legal principles and precedents as they apply to the real estate environment.

415 [M] Law of International Trade 3 Prereq B Law 210. Legal organization of the international community; international aspects of trade and development, economic cooperation, and technical, social, and cultural cooperation.

416 [M] Public International Law 3 Prereq B Law 210. Law governing states, intergovernmental organizations, and nongovernmental organizations (including multinational enterprises); human rights law; environmental law; and dispute settlement.

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

510 Law for the Business Manager 3 Contract, tort, constitutional and administrative law; impact of government regulation on business.

Decision Sciences

Dec S

215 Statistics 4 (3-3) Prereq Math 201. Data presentation, probability, distributions, inferences, and linear regression as applied to business and economics.

340 Operations Management 3 Prereq Dec S 215. Management of production and service operations with an emphasis on quality management; planning and control of workflow; resource allocation, and utilization.

344 Principles of Optimization 3 Same as Math 364.


417 Simulation Methods 3 Same as Math 416.
418 Quality Improvement for Management 3
Prereq Dec S 215. Total quality management as used in industries; philosophy of Deming and others, control charts, process capability analysis, team tools.

440 [M] Advanced Operations Management 3
Prereq Dec S 340. Advanced concepts in the management of production and service operations with an emphasis on quality management; case studies.

451 Business Statistical Analyses 3
Prereq admission to MBA program. Advanced preparation for graduate-level business analyses, applied finite math and statistics principles.

498 Quantitative Methods Internship  V 2-15
May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization. S, F grading.

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

516 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.

517 Quality Improvement for Management 3
Philosophy and evolution of quality control, control charts, process capability analysis, applications.

518 Techniques of Sampling 3
Prereq Dec S 591. Sample surveys for business use; theory and application with emphasis on appropriate sample types and the estimation of their parameters.

519 Applied Multivariate Analysis 3
Prereq Dec S 591 or Stat 443. Principal components, factor analysis, discriminant function, cluster analysis, multivariate normal distribution, Hotelling’s T² and MANOVA.

540 Deterministic Business Models 3
Prereq Dec S 340. Decision analysis, linear optimization models, nonlinear models, network analysis including PERT, and dynamic programming as applied to business.

542 Applied Stochastic Models 3
Prereq Dec S 215. Stochastic processes, Markov models, stochastic dynamic programming, queues and simulation applied to business problems.

581 Operations Management 3
Prereq Dec S 340. Analytical approach to solving problems in production and operations management.

586 Applied Multiple Time Series Analysis 3
Prereq Dec S 516. Approaches to modeling and analysis of multiple time series.

591 Statistical Analysis for Business Decisions 3
Prereq Dec S 215, Math 201, 202. Analytical skills for decision-making; data collection and analysis, sampling, inferential, regression methodologies, experimental design, time series, forecasting analysis.

596 Doctoral Topics V 1-4
May be repeated for credit; cumulative maximum 15 hours. Advanced topics in decision sciences.

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.

Finance

323 Personal Finance 3
For nonbusiness majors. Consumer credit, financial institutions, investments, mutual funds, insurance, social security, home ownership, taxes, estate planning.

325 Finance 3

409 Real Estate Finance 3
Same as R E 409.

421 Financial Institutions and Markets 3
Prereq Fin 325. Level and term structure of interest rates; characteristics of financial institutions and markets; financial futures.

422 Commercial Bank Management 3
Prereq Fin 325. Problems facing bank managers and solution techniques; asset and liability management; loan pricing; banking structure; bank regulation.

Prereq Fin 325. Theory and practice of financial management; applications of financial principles to problems in financial management.

426 Entrepreneurial Finance 3
Prereq Acctg 231; Fin 325. Raising capital for new enterprises; venture capital, IPOs, debt financing, leasing and valuing start-up ventures.

427 [M] Investments and Security Analysis 3
Prereq Fin 325. Investment objectives, security markets, market efficiency, and principles of security valuation.

428 Portfolio Theory and Management 3

481 International Finance 3
Same as I Bus 481.

498 Finance Internship V 2-15
May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization. S, F grading.

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

520 Employee Benefits Risk Management 3
Prereq Acctg 231. Application of finance principles to problems in financial management; loan pricing; term and risk structure of interest rates; investment and commercial banking; financial futures.

528 Portfolio Theory and Financial Engineering 3
Prereq Fin 325, 427, or 527. The theory of portfolio management and the use of derivative securities in portfolio risk management.

529 Financial Management for High Tech Firms 3
Prereq Fin 325. Application of finance principles to firms in high-tech industries; financing, risk management, capital investment, and mergers/acquisitions.

581 International Finance 3
Same as I Bus 581.

596 Doctoral Topics V 1-4
May be repeated for credit; cumulative maximum 16 hours. Advanced topics in finance.

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.

Insurance

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, business, 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.

420 [M] Pure Risk Management 3
Prereq Ins 320. Management of business risk insurance; analysis of risk; methods of handling risk assumption, combination, transfer, loss control and avoidance.

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
Prereq Ins 320. Management of business risk insurance, analysis of risk; methods of handling risk assumption, combination, transfer, loss control and avoidance.

International Business

I Bus

375 Aspects of Sustainable Development 3
Prereq junior standing. Ecological, economical, and sociological aspects of sustainable development.

380 [M] International Business 3
International political economy; business relationships between nations; corporations and economic institutions.

415 Law of International Trade 3
Same as B Law 415.

416 [M] Public International Law 3
Same as B Law 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.
3 Prereq I Bus

481 International Finance 3 Prereq Fin 325; 1 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; Mkgt 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 3 Same as Mgt 492. Financial problems of multinational businesses; international financial environment, long-term capital commitment to an international venture, financial techniques for firm operation.

501 Management of Organizations 3 Leading, organizing, decision making, planning, controlling, conflict management, and behavior in work organizations.

507 Computers and Systems for Managers 3 Data base concepts, management information systems, design of application programs, and computer concepts.

515 Women in Management and Leadership 3 Same as W St 315.

537 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.

538 Doctoral Topics 3 May be repeated for credit; cumulative maximum 15 hours. Advanced topics in management.

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

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

Management Information Systems

MIS

150 Technological Survival Skills for Today’s Manager 2 (1-2) Prereq Cpt S 105 or successful completion of MIS 150 entrance exam. Application of management information systems technology to solve typical management and business problems.

153 BASIC Programming 2 Same as Cpt S 153.

271 Application Program Development 3 Top-down program design, structured programming techniques, and program testing, using COBOL language.

350 Management Information Systems 3 Prereq MIS 150. Management information systems foundations; current trends; MIS technology fundamentals; applications to business functions and management practice.


375 Electronic Commerce and the Internet 3 Prereq MIS 350. Capabilities of the Internet to support and enable electronic commerce; effective design and implementation; management issues.

448 Strategic Information Technology Management 3 Prereq Mgt 301, MIS 350. Information problems, management of the information resource, uses of computer-based systems to improve management decision-making.

472 [M] Systems Analysis and Design 3 Prereq MIS 372; two of Cpt S 150, Cpt S 153, MIS 271. The application of systems analysis and design to the development of information systems; systems development life cycle.

474 Telecommunications and Networking in Business 3 Prereq MIS 350. Data communications; infrastructure, and protocols; network topologies and management; business applications of communication technologies.

498 Management Information Systems Internship 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.
572 Database Management Systems 3 Prereq admission to MBA program. Database management, data modeling, system design and implementation; the application of DBMS technologies to organizational and business problems.

574 Business Telecommunications and Electronic Commerce 3 Prereq admission to MBA program. Data communications fundamentals and their application to the design and implementation of electronic commerce systems.

580 Information Systems Management 3 Data processing organization; operations, application development, computer selection, management of computer personnel and systems.

596 Doctoral Topics 3 May be repeated for credit; cumulative maximum 9 hours. Prereq graduating standing. Advanced topics in management information systems.

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

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

Marketing

Mktg 327 Services/Nonprofit Marketing 3 Marketing applications in the service sector. Cooperative course taught by UI (Bus 327), open to WSU students.

360 Marketing 3 Functions, methods, and middlemen used in marketing the principal types of goods; price policies, cost of marketing; government regulation.

368 Marketing Research 3 Prereq Dec 215; Mktg 360. Survey and experimental methods as they relate to marketing research.

460 [M] Marketing Management 3 Prereq Mktg 360; 6 hours Mktg. Analysis of marketing policy; approaches to solution of marketing problems.


467 Consumer Behavior 3 Prereq Mktg 360. The investigation of social-psychological phenomena affecting consumer decision processes; learning theory and communication.

468 Public Policy and Marketing 3 Prereq Mktg 360. Productivity and efficiency in marketing; government regulation of marketing structure and of marketing policies and practices; consumer protection and welfare.

470 Retail Management 3 Prereq Mktg 360. Retailing system; organization, merchandising models, pricing, promotion, location, and control procedures; management decision processes.

477 Promotion Management 3 Prereq Mktg 360. Text and case approach to integrating promotion into the marketing plan; methods, organization, communications, media selection, and campaigns.

478 [M] Sales Management 3 Prereq Mktg 360. The role of selling in the marketing mix; problems in planning, organizing, evaluating and controlling the sales force.


496 Special Topics V1-3 May be repeated for credit; cumulative maximum 6 hours.

497 Marketing Yourself 1 Career opportunity assessment, position research, resume, application letter, interviewing skills, motivation, attitudes for success, solicitation and assessment of others.

498 Marketing Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.

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

505 Survey of Marketing 3 Marketing management; relevance of marketing to company profitability and consumer satisfaction; decision regarding price, product, promotion, and distribution.

506 Marketing Management and Administrative Policy 3 Marketing management and administrative policies as they relate to concepts, strategies, and decision making.

560 Research Methodology 3 Prereq Dec 215. Types of data needed and available, collection and analysis of data as they relate to decisional research.

561 Technology and New Product Marketing 3 Prereq Mktg 360. Introduction of new products that are based on new technology; exploration of actual products in the market.

565 Seminar in Marketing 3 May be repeated for credit; cumulative maximum 9 hours. Marketing structure and behavior from economic and behavioral perspectives; social evaluation and behavioral implications of marketing strategy.

567 Consumer Behavior Theory 3 Prereq Mktg 505. Theory in consumer and buyer behavior; conceptual and empirical research role of purchase and consumption behavior on society and marketing.

596 Doctoral Topics 3 May be repeated for credit; cumulative maximum 15 hours. Advanced topics in marketing.

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

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

Real Estate

RE 305 Real Estate 3 Prereq B Law 210, Econ 102. Relationships between location and value; patterns of urban land use; legal, financial, and organizational framework of the real estate business.


405 [M] Real Estate Valuation 3 Prereq Fin 325; R E 305. Principles and practices of real property valuation; factors affecting real property values and income; appraisal and location theory.

406 Real Estate Administration 3 Prereq R E 305. The case method of analyzing management policies, practices, and decision making in real estate firms.

407 Real Estate Investments 3 Prereq Fin 325; R E 305. Instruments, techniques, and institutions of real estate investment; forms of ownership, tax law, decision-making tools and applications.

408 Valuation of Income Property 3 Prereq Fin 325; R E 405. Appraisal of commercial, industrial, retail and multi-family properties; analysis of business values, construction costs and discounted cash flow analysis.

409 Real Estate Finance 3 Prereq Fin 325. Analysis of primary and secondary mortgage markets, financing techniques, mortgage securities, mortgage risk, and real estate portfolios.

498 Real Estate Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.

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

522 Advanced Topics in Real Estate 3 Basic forces that motivate and affect investors in their use and possession of real estate.

600 Special Projects or Independent Study Variable credit.

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

Department of Chemical Engineering

Professor and Department Chair, R. Zollars; Professors, C. F. Ivory, J. M. Lee, K. C. Liddell, R. Mahalingam, R. C. Miller, J. N. Petersen, W. J. Thompson, B. J. Van Wie; Associate Professors, R. P. Cavaleri, C. S. Claiborn, D. G. Lindstrom; Assistant Professor, B. M. Peyton.

The curriculum in chemical engineering provides thorough knowledge of basic science and engineering. This includes material and energy balances, chemical and physical equilibria, rate processes, and economic balances. With such training, graduates may participate in the design and operating of chemically based products or they may engage in research leading to new or improved chemical processes, products, and uses. Graduates may also find rewarding work in plant operation, plant management, university teaching, sales-service, and other functions requiring chemical engineering training. The curriculum in chemical engineering in the College of Engineering is accredited by the Accreditation Board for Engineering and Technology (ABET).

The total number of majors in the department is restricted at the junior level. The department offers courses of study leading to the degrees of Bachelor of Science in Chemical Engineering, Master of Science in Chemical Engineering, and Doctor of Philosophy.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

The Bachelor of Science degree in Chemical Engineering requires a total of 138 semester hours. At least 68 of the total hours required for this degree must be in 300-400-level courses.
Department of Chemical Engineering

**Chemical Engineering Degree Program (138 Hours)**

**Freshman Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Chem 105 P</td>
<td>General Chemistry</td>
<td>4</td>
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<tr>
<td>Engr 101 W</td>
<td>General Chemistry</td>
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<td>GenEd 110 A</td>
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<td>Inter</td>
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<td>Math 171</td>
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**Second Semester**

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<tbody>
<tr>
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<td>Cpt S 203</td>
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<td>GenEd 111 A</td>
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<td>Math 172</td>
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<tr>
<td>Phys 201 P</td>
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**Sophomore Year**

**First Semester**

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<tbody>
<tr>
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<tr>
<td>Ch E 298</td>
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<tr>
<td>Chem 340</td>
<td>General Chemistry</td>
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<tr>
<td>Engl 402 W</td>
<td>General Chemistry</td>
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<tr>
<td>Math 273</td>
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<tr>
<td>Phys 202 P</td>
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**Second Semester**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
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<tr>
<td>BC/BP 364 or Chem 342</td>
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<tr>
<td>Ch E 211</td>
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<tr>
<td>Ch E 298</td>
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<tr>
<td>E E 304</td>
<td>General Chemistry</td>
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<tr>
<td>Econ 101 S or Econ 102 S</td>
<td>General Chemistry</td>
<td>3</td>
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<tr>
<td>Math 315</td>
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**Junior Year**

**First Semester**

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<tbody>
<tr>
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<tr>
<td>Ch E 332</td>
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<tr>
<td>Ch E 398</td>
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<tr>
<td>Chem 331</td>
<td>General Chemistry</td>
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<td>E E 305</td>
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<td>Math Elective</td>
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<tr>
<td>Tier III Capstone [H,G,S,K]</td>
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**Incomplete Writing Portfolio**

**Second Semester**

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<tbody>
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<td>Ch E 301</td>
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<td>Ch E 341</td>
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<tr>
<td>Ch E 398</td>
<td>General Chemistry</td>
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<tr>
<td>Chem 333</td>
<td>General Chemistry</td>
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<tr>
<td>Chem 336</td>
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<tr>
<td>Chemistry Elective</td>
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<tr>
<td>Engineering Elective</td>
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<tr>
<td>Technical Elective</td>
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**Senior Year**

**First Semester**

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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
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<td>Ch E 432</td>
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<tr>
<td>Ch E 441</td>
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<tr>
<td>Ch E 450</td>
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<tr>
<td>Ch E 498</td>
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<td>Ch E Elective</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Hours</th>
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<tbody>
<tr>
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<tr>
<td>Ch E 433 M</td>
<td>General Chemistry</td>
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</tbody>
</table>

**Description of Courses**

**Chemical Engineering**

**Ch E 201** Chemical Process Principles and Calculations 3 Prereq Chem 106; Math 172. Fundamental concepts of chemical engineering; problem-solving techniques and applications in stoichiometry, material and energy balances, and phase equilibria.

**211 Process Simulation** 3 Prereq Chem 106; Math 172; Ch E 315 or c//. Computer solutions to problems in chemical engineering processing.

**298 Technical Seminar** 1 May be repeated for credit; cumulative maximum 2 hours. S, F grading.

**301 Chemical Engineering Thermodynamics** 3 Prereq Ch E 201; Chem 331 or c//; major in Ch E. Basic concepts and laws; property relationships; compression and liquefaction; phase equilibria; reaction equilibria; applications in stagewise processing.

**310 Introduction to Transport Processes** 3 Prereq Ch E 201; Math 315 or c//; major in Ch E. Fundamentals of the phenomena governing the transport of momentum, energy, and mass.

**321 Kinetics and Reactor Design** 3 Prereq 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** 3 Prereq Ch E 201, 310, Ch E major. Design calculations, operations, and evaluation of equipment used in fluid flow, heat transfer, and evaporation.

**334 Chemical Engineering Separations** 3 Prereq Ch E 310; 332 or c//. Design and evaluation of equipment used in continuous contacting.

**398 Technical Seminar** 1 May be repeated for credit; cumulative maximum 2 hours. S, F grading.

**418 Materials Processing** 3 Prereq Ch E 334; Chem 105, 106; Ch E major. Processing of polymeric and ceramic materials; corrosion prevention and materials selection.

**432 [M] Chemical Engineering Lab I** 3 (1-6) Prereq Ch E 310, 321, 332, 334. Statistical design and analysis of experiments; safety; experiments in heat and mass transfer; separations, other unit operations, kinetics, control; report writing.

**433 [M] Chemical Engineering Lab II** 2 (0-6) Prereq Ch E 432. Laboratory experiments in heat and mass transfer; separations, other unit operations, kinetics, control; design calculations and report writing.

**435 Modern Separation Processes** 3 Prereq Ch E 301, 310, 332, 334; Ch E major. Design and operation of separation processes important to emerging technologies; bioseparations, supercritical extraction.

**441 Process Control** 3 Prereq BSysE 310, Ch E 211 or Ch E 310. Measuring instruments, automatic control, process and instrument characteristics and theory applied to industrial control problems.

**450 Chemical Process Analysis and Design I** 3 Prereq Ch E 301, 321, 334. Chemical engineering design; computer tools; safety and environmental constraints; cost and equipment optimization.

**Certification**

Specific requirements for certification in chemical engineering can be obtained from the departmental office although eligibility usually occurs at the end of the sophomore year. Criteria for certification include overall g.p.a., grades earned in mathematics and physical 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 Engineering at Washington State University from other institutions should coordinate their programs with the department chair to establish a schedule of studies leading to the bachelor’s degree. This is desirable because of sophomore professional requirements and course sequences. A strong preparation in chemistry, mathematics, and physics is necessary prior to transfer to minimize the time required at Washington State University to complete bachelor’s degree requirements. 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 Bachelor of Science degree in Chemical Engineering from an institution accredited by ABET normally will satisfy this requirement. Special programs are also available for students with bachelor’s degrees in chemistry or other areas of science who wish to obtain the Master of Science degree in Chemical Engineering.
529 Chemical Engineering Kinetics 3 Interpretation of kinetic data and design of nonideal chemical reactors; fundamentals of heterogeneous catalysis, catalyst preparation, characterization, and theory. Cooperative course taught jointly by WSU and UI (CHE 529).

541 Chemical Engineering Analysis 3 Mathematical analysis of chemical engineering operations and processes; mathematical modeling and computer application.

546 Mass Transfer Operations 3 Diffusional and equilibrium operations. Cooperative course taught jointly by WSU and UI (CHE 546).

551 Discrete Digital Control 3 (2-3) Prereq CHE 441. Design and implementation of digital control algorithms; Z-transforms; state space methods. Cooperative course taught by WSU,open to UI students (ChE 551).

552 Process Optimization 3 Fundamentals associated with the optimization of chemical process plants.

560 Biochemical Engineering 3 Chemical engineering applied to biological systems; fermentation processes, biochemical reactor design, downstream processing, transport phenomena in biological systems, biochemical technology. Cooperative course taught jointly by WSU and UI (CHE 560).

571 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.

574 Protein Biotechnology 3 Same as BC/BP 574.

581 Advanced Topics in Chemical Engineering V 1-3 May be repeated for credit; cumulative maximum 9 hours. Filtration, reaction engineering, two-phase flow, non-Newtonian fluids, interfacial phenomena, fluidization, novel separations, biomedical engineering.

598 Research Seminar 1 May be repeated for credit. Seminar presentations on current topics in chemical engineering. Research, S,F grading.

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

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

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
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 biology and physics should see the section on the appropriate program in this catalog.

Minor in Chemistry

Completion of a minor in chemistry requires at least 17 hours from 200-level and above chemistry courses. Three hours from BC/BP 364, 366, 563, or 564 and up to 2 hours of Chem 499 may be used to satisfy this requirement.

LAB CHARGES

A charge for expendable laboratory supplies is made in each laboratory course.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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

A student undertaking this curriculum after the beginning of the freshman year should consult with the department undergraduate coordinator to arrange a schedule which will permit completion of required courses in proper sequence. Course sequencing is particularly important in this option for physical chemistry (Chem 331 and 332). Calculus through multivariable calculus (Math 273) and calculus-based physics (Phys 201 and 202) are essential preparation for physical chemistry. This curriculum leads to a degree for which students will be certified to the American Chemical Society.

GENERAL CHEMISTRY OPTION

(120 HOURS) ✓FYDA

ENVIRONMENTAL CHEMISTRY OPTION

(122 HOURS) ✓FYDA

Students completing this curriculum will not be certified to the American Chemical Society. Students wishing to be certified to the American Chemical Society with a specialization in environmental chemistry should take Chem 481 and 482 as electives in the curriculum above and should take 3 hours of biology or geology beyond that specified above.

Freshman Year

First Semester  Hours
Chem 105 [P] (GER) or 115\(^1\) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 171 [N] (GER) 4
Elective 1

Second Semester  Hours
Bio S 102 [B] or 103 [B] (GER) 4
Chem 106 [P] (GER) or 116\(^1\) 4
GenEd 111 [A] (GER) 3
Math 172 4

Sophomore Year

First Semester  Hours
Arts & Humanities [H,G] (GER) 3
Chem 340 3
Chem 341 2
Math 273 2
Phys 201 [P] (GER) 4
Elective 1

Second Semester  Hours
Chem 342 3
Cpt S 203 2
Math 220 2
Phys 202 [P] (GER) 4
Social Sciences [S,K] (GER) 3
Elective 1

Junior Year

First Semester  Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 6
Chem 220 2
Chem 222 2
Chem 331 3
Chem 333 1
Chem 398 1
Complete Writing Portfolio

Second Semester  Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Chem 332 3
Chem 334 [M] 1
Chem 499 2
Engl 301 [W] or 402 [W] (GER) 3
Intercultural [I,G,K] (GER) 3

Senior Year

First Semester  Hours
Chem 425 2
Chem 426 2
Chem 499 2
Tier III Capstone (GER) 3
Electives 6

Second Semester  Hours
Chem 401\(^1\) 3
Chem 410 [M] 3
Chem 495 2
Chem Electives\(^1\) 7

\(^1\)Highly qualified students are encouraged to take Chem 115 and 116 in place of Chem 105 and 106. Students who have taken Chem 101 must take Chem 105 and 106, or 102 and 106.

\(^2\)Offered alternate years only. Students may take this course during the second semester of their junior year.

\(^3\)Electives must include 3 hours of advanced chemistry courses based on physical (Chem 332) or organic (Chem 340) chemistry. The following chemistry courses meet this requirement: Chem 405, 415, 421, 430, 461, 480, 481, 482, as does any 500-level chemistry course. One Math or Physics course requiring calculus may be substituted for this course. Students should consult the associate chair regarding the selection of a Math or Physics course to satisfy this requirement.

1Chem 340 and 341 may be substituted.
2Math 171 and 172 may be substituted.
### MATERIALS CHEMISTRY OPTION  
(120 HOURS)  

Students pursuing this curriculum will not be certified to the American Chemical Society. Course sequencing is particularly important in this option for physical chemistry (Chem 331 and 332). Calculus through multivariable calculus (Math 273) and calculus-based physics (Phys 201 and 202) are essential preparation for physical chemistry.

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 105 [P] (GER) or 115</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 171 [N] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
<td>1</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio S 102 [B] or 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 106 [P] (GER) or 116</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 172</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Ch E 201</td>
<td>3</td>
</tr>
<tr>
<td>Math 220</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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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Chem 240</td>
<td>4</td>
</tr>
<tr>
<td>Chem Elective</td>
<td>3</td>
</tr>
<tr>
<td>Phys 202 [P] (GER)</td>
<td>4</td>
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</tbody>
</table>

#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Chem 331</td>
<td>3</td>
</tr>
<tr>
<td>Chem 333</td>
<td>1</td>
</tr>
<tr>
<td>Chem 398</td>
<td>1</td>
</tr>
<tr>
<td>Chem Elective</td>
<td>2</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>MSE 301</td>
<td>3</td>
</tr>
<tr>
<td>Phys 410</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>6</td>
</tr>
<tr>
<td>Chem 332</td>
<td>3</td>
</tr>
<tr>
<td>Chem 334 [M]</td>
<td>1</td>
</tr>
<tr>
<td>Chem 499</td>
<td>2</td>
</tr>
<tr>
<td>MSE 302</td>
<td>3</td>
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</table>

#### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 425</td>
<td>2</td>
</tr>
<tr>
<td>Chem 426</td>
<td>2</td>
</tr>
<tr>
<td>Chem 499</td>
<td>2</td>
</tr>
</tbody>
</table>

Chem Elective² | 3
Engl 402 [W] (GER) | 3
Tier III Capstone (GER) | 3

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 401</td>
<td>3</td>
</tr>
<tr>
<td>Chem 410 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Chem 480</td>
<td>3</td>
</tr>
<tr>
<td>Chem 495</td>
<td>2</td>
</tr>
<tr>
<td>Chem Electives²</td>
<td>4</td>
</tr>
</tbody>
</table>

¹Chemistry 340, 341, 342 may be substituted.  
²Recommended electives include Chem E 211, Chem 430, and Math 273.

#### 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, mathematics through calculus, and have a reading knowledge of scientific German, French or Russian. 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 Department of Biochemistry and Biophysics.

<table>
<thead>
<tr>
<th>Description of Courses</th>
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</thead>
<tbody>
<tr>
<td>General and Inorganic Chemistry</td>
</tr>
</tbody>
</table>


105 [P] Principles of Chemistry I 4 (3-3) Prereq one year high school chemistry or Chem 101; Math 107 or c/l. 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; Math 107 or higher placement. 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 Chemical Principles Honors I 4 (3-3) Prereq one year high school chemistry; Math 107 or c/l. Topics as for Chem 105, enriched by special lectures and demonstrations. For students with adequate background in science and mathematics. Credit not granted for both Chem 115 and 105.


150 [Q] Molecules and Science 3 (2-3) Chemical basis and molecular structure of everyday materials; polymers, medicines, etc.


401 Modern Inorganic Chemistry 3 Prereq Chem 332 or c/l. Properties of substances; periodic systems; oxidation-reduction and acid-base characteristics interpreted on the basis of atomic and molecular structure.

410 [M] Advanced Synthesis and Characterization 3 (1-6) Synthesis and characterization of organic and inorganic compounds and solid-state materials; modern synthetic technology, characterization methods, and laboratory techniques.


503 Advanced Topics in Inorganic Chemistry V 1-3 May be repeated for credit. Rec Chem 501. Recent significant developments. Cooperative course taught by WSU, open to UI students (Chem 503).

504 Organometallic Chemistry 3 Prereq Chem 501. Structure, bonding, and reaction chemistry of organotransition metal compounds; applications to homogenous catalysis. Cooperative course taught by UI (Chem 568), open to WSU students.

507 Topics in Coordination Chemistry 3 Rec Chem 501. Principles, complex ions and coordination compounds; theory of acids and bases; bonding theory, nonstoichiometric solvents; familiar elements; periodicity. Cooperative course taught by UI (Chem 564), open to WSU students.

508 Topics in Inorganic Chemistry V 1-9 Rec Chem 501. Coordination compounds; halogens; less familiar elements; cathate, interstitial, nonstoichiometric compounds; chemical bonding; inorganic reaction mechanisms. Cooperative course taught by UI (Chem 565), open to WSU students.


#### Analytical, Environmental, and Radiochemistry

Chem 220 Quantitative Analysis 2 Prereq Chem 106, or Chem 116; Rec c/l in Chem 222. Theories of quantitative chemical analysis; statistical evaluation of data; chemical equilibrium; volumetric and gravimetric methods of analysis; introduction to electrochemistry.
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 522.

527 Environmental Chemistry 2 Graduate-level counterpart of Chem 427; additional requirements. Credit not granted for both Chem 427 and 527.

529 Selected Topics in Analytical Chemistry V 1-3 May be repeated for credit. Selected current developments. Cooperative course taught by WSU, open to UI students (Chem 525).

581 Environmental Chemistry I 3 Prereq graduate standing. Graduate-level counterpart of Chem 481; additional requirements. Credit not granted for both Chem 481 and 581.

582 Environmental Chemistry II 3 Prereq Chem 481. Graduate-level counterpart of Chem 482; additional requirements. Credit not granted for both Chem 482 and 582.

Physical Chemistry

Chem 330 Problem Solving in Physical Chemistry I Prereq Chem 106 or 116; Math 172. Quantitative methods of data analysis and chemical concept development; emphasis on multivariable, matrix, and computer methods.

331 Physical Chemistry 3 Prereq Math 172; Phys 202; c/l in Chem 333. Concepts of physical chemistry; basic thermodynamics; free energy and entropy; phase equilibria; properties of solutions of electrolytes and non-electrolytes.

332 Physical Chemistry 3 Prereq Chem 331. Elementary quantum theory; molecular structure and spectra; bonding theory; reaction rates; photochemistry and radiation chemistry; energy states and statistical thermodynamics.

333 Physical Chemistry Laboratory 1 (0-3) Prereq Chem 331 or c/l. Experiments selected to meet the individual needs of students in BC/BP, Bio S, C E, Chem, or MSE.

334 [M] Physical Chemistry Laboratory 1 (0-3) Prereq Chem 332 or c/l. Continuation of Chem 333. Experiments in molecular structure, atomic molecular spectroscopy, chemical kinetics.

336 Classical Physical Chemistry 2 Prereq Chem 331. Concepts and applications of classical physical chemistry; transport and kinetic properties; electrochemistry; colloids; polymers and macromolecules.

338 Environmental Physical Chemistry 3 Prereq Chem 220, 222, Math 140. Physical chemistry for students in the environmental and biological sciences; emphasis on results and applications of physical chemical principles.


461 Atomic and Molecular Phenomena 3 Prereq Chem 332, Math 273. Basic concepts of atomic structure and spectroscopy; quantum mechanics of atomic phenomena. Credit not granted for both Chem 461 and 561.

480 Advanced Organic Chemistry 3 Prereq Chem 332. 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 531, 532. Statistical theory of thermodynamic variables and chemical equilibrium; calculation of equilibrium properties from spectral data; fluctuations about equilibrium; quantum statistics.


536 Quantum Chemistry 3 Rec Chem 332 or c/l. Quantum mechanics applied to chemical systems: states of atoms and molecules, transitions and spectra.

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. Survey of functional group structure and reactions; biochemical applications. Credit not granted for both Chem 240 and 240R.

340 Organic Chemistry 3 Prereq Chem 106 or 116. Structures of organic compounds, fundamentals of reaction mechanisms, alkenes, alkenes, and aromatic compounds; basic spectroscopy. Credit not granted for both Chem 340 and 240.

341 Organic Chemistry Laboratory 2 (0-6) Prereq Chem 340.

342 Organic Chemistry 3 Prereq Chem 340; Rec Chem 341 or c/l. Continuation of Chem 340; carbonyl compounds, carboxyl derivatives, amines, carbohydrates, proteins, nucleic acids.

343 Organic Chemistry Laboratory 2 (0-6) Prereq Chem 342 or c/l.

340 Organic Reaction Mechanisms 3 Rec Chem 331, 342. The major classes of organic reaction mechanisms and their significance; kinetics and introductory theory.


544 Advanced Topics in Organic Chemistry V 1-3 May be repeated for credit. Rec Chem 540. Current research in organic chemistry. Cooperative course taught by WSU, open to UI students (Chem 544).

546 Spectroscopic Identification of Organic Compounds V 1-3 May be repeated for credit; cumulative maximum 3 hours. Rec Chem 342. Structural interpretation of 1H and 13C NMR, vibrational and mass spectra of organic compounds; audio-tutorial.

Chemistry for Teachers

Chem 411 General Chemistry from an Advanced Point of View 3 Prereq one year chemistry. Quantitative aspects of chemistry; first law of thermodynamics, solution theory, equilibrium, kinetics; electrochemistry and redox reactions; inquiry and problem solving.

413 Lab Preparations, Methods and Management 2-0(6) Prereq one year Chem. Synthesis, analysis, and reactivity; reactions and methods appropriate for high school; microscale chemistry; time-saving techniques, inventory control, safety and disposal.

419 Physical Foundations of General Chemistry 1 Prereq Chem 411 or one year general chemistry; for preselected teachers. Physical basis of general and biophysical chemistry.

456 Lecture Demonstrations and Their Uses 1 Prereq one year Chem. Synthesis, analysis, and reactivity; reactions and methods appropriate for high school; microscale chemistry; time-saving techniques, inventory control, safety and disposal.

505 Molecular Basis of Modern Materials and Devices 2 Prereq Chem 411; for preselected teachers. Physical basis of general and biophysical chemistry.

506 Industrial Practicum 5 Prereq Chem 519; for preselected teachers. Industrial practicum for secondary chemistry teachers who are candidates for the MA degree in chemistry.

519 Analytical Methods and Instrumentation 3 Prereq one year chemistry; for preselected teachers. Operational basis and applications to educational and industrial practice.

571 Organic Chemistry and Biochemistry for Teachers 1 Prereq Chem 411; for preselected teachers. Organic and biochemistry; for practicing secondary teachers.

585 Survey of Biophysical Chemistry 3 Prereq BC/BP 572, Chem 419; for preselected teachers. Connection between structure and properties of biomolecules and methods of investigation.

Problems, Seminar, Research, and Thesis

Chem

191 Independent Study in Modern Chemistry 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Chem 101, 105, 115, 154. Independent study in the theory and practice of modern chemistry; written report required. S, F grading.

398 Undergraduate Seminar 1 Rec BC/BP or Chem major. S, F grading.

491 Cooperative Education Internship V 2-5 May be repeated for credit; cumulative maximum 16 hours. Off-campus internship with business, industry, or government unit coordinated through the Professional Experience Program. S, F grading.

495 Directed Research V 3 Prereq Chem 334 or consent of F. Coferescent education that prepares our students to be successful in professional practice and advanced studies. The objectives of our undergraduate program are as follows: 1) to educate and equip a new generation of civil and environmental engineers to meet future challenges and needs of our profession; 2) to foster an environment that stimulates learning, provides excellence in instruction, and provides leadership in the development of new teaching methods; 3) to promote interdisciplinary education and integration of new technology and research within the undergraduate experience; 4) to provide our students with a high quality education in basic principles and practical applications; and 5) to instill a sense of social and ethical responsibility among our graduates. Courses can be selected to provide in-depth studies in environmental, geotechnical, hydraulic, structural, and/or transportation engineering.

Design and planning are essential in the civil engineering profession. Accordingly, these activities are introduced in early CE courses. As students advance, they face open-ended assignments with alternative solutions, feasibility studies, safety considerations, economics, social and environmental impacts and other concerns that test their creative ability. All students complete a senior design class in which much of earlier course work is applied.

Effective Spring 2000, all seniors will be required to take the Fundamentals of Engineering (FE) exam prior to graduation. Two purposes of this exam are (1) it is a required step in becoming a professional engineer and (2) it serves as an assessment tool for meeting the department’s objectives.

Because of the ever-increasing knowledge required to practice at high levels of competence in the specialized branches of civil engineering, an educational preparation of five or more years of college study is becoming more important. By an appropriate choice of electives the undergraduate curriculum may be integrated with a graduate program to provide a continuous schedule of studies leading to both the bachelor’s and master’s degrees.

The department offers courses of study leading to the degree of Bachelor of Science in Civil Engineering, Master of Science in Civil Engineering, Master of Science in Environmental Engineering, and Doctor of Philosophy (Civil Engineering). The department participates in interdepartmental programs leading to the degrees of Master of Science in Environmental Science, and Master of Regional Planning.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

All students completing the schedule of studies below earn a Bachelor of Science degree in Civil Engineering. At least 50 of the total hours required for this degree must be in 300-400-level courses. None of the courses listed below may be taken on a pass, fail basis.
CIVIL ENGINEERING DEGREE PROGRAM  
(129 HOURS)  

**Freshman Year**

**First Semester**  
C E 120  
Chem 105 [P] (GER)  
Eng1 101 [W] (GER)  
GenEd 110 [A] (GER)v  
Math 171 [N] (GER)v  

**Second Semester**  
ComSt 102 [C] (GER)  
GenEd 111 [A] (GER)v  
M E 103  
Math 172  

**Sophomore Year**

**First Semester**  
C E 211v  
Cpt S 203  
Econ 101[S] or Econ 102 [S] (GER)v  
Math 220  
Math 273  
Phys 201 [P] (GER)v  

**Second Semester**  
C E 212  
C E 215  
Statistics/Numberical Methods  
Chem 106 [P]F, Geol 102 [P], or 
Phys 202 [P] (GER)  
M E 320  
Math 315  

**Junior Year**

**First Semester**  
C E 301  
C E 315  
C E 317 [M]  
C E 330  
C E 341  
E E 304 or M E 301  
Complete Writing Portfolio  

**Second Semester**  
C E 322  
C E 351  
C E 463  
Engl 402 [W] (GER)  
Intercultural [I,G,K] (GER)v  

**Senior Year**

**First Semester**  
Arts & Humanities [H,G] (GER)v  
C E Electivesv  
C E Laboratory  

**Second Semester**  
C E 465 [M]  
C E 480 [M]  
C E Electivev  
Tier III Capstone (GER)  

The Alternate Senior Year Environmental Engineering Emphasis  

The alternate senior year schedule shown below is offered to those students interested in studying with an environmental engineering emphasis. This would substitute for the senior year above and complete the study schedule for the Bachelor of Science degree in Civil Engineering.  

Senior Year  

**First Semester**  
Arts & Humanities [H,G] (GER)v  
C E 415v  
C E 463  
C E Electivev  
C E Elective (Rec C E 446 or 471)v  

**Second Semester**  
C E 408v  
C E 442v  
C E 465 [M]  
C E 480 [M]  
C E Electivev  
Tier III Capstone (GER)  

1 General Education Requirement courses. These 18 credit hours will be completed. Faculty advisors will help students in selecting these.  
2 Classes that must be completed prior to certification.  
3 Strongly recommended for an Environmental Engineering emphasis.  
4 Elective courses: The total credit hours for elective and required courses must be distributed such that at least 18 hours are in engineering design and at least 32 hours are in engineering science in order for a student to qualify for a degree. C E electives including C E laboratory will be selected from at least three different areas (environmental, geotechnical, hydraulics, structural, and transportation/pavement).  

**Description of Courses**


Civil Engineering  

C E 120 Innovation in Design 2 Same as M E 120.  
174 Introduction to Meteorology and the Atmospheric Environment 3 Introduction to meteorology, the atmospheric processes; weather, air pollution, and environmental topics.  
211 Statics 3 Prereq Math 172 or c/l; Phys 201 or c/l; Engineering mechanics concepts; force systems; static equilibrium; centroids, centers of gravity; shear and moment diagrams; friction; moments of inertia. Cooperative course taught jointly by WSU and UI (CE 210).  
215 Mechanics of Materials 3 Prereq C E 211. Concepts of stress, strain, and their relationships; axial loads, torsion and bending; combined stress; properties of materials; columns, repeated loadings. Cooperative course taught jointly by WSU and UI (ME 340).  
301 Surveying for Engineers 3 (2-3) Prereq M E 103; Math 171. Basic principles for using instruments and equipment in conducting engineering surveys; analyses of errors in measurements.  
317 [M] Geotechnical Engineering I 3 (2-3) Prereq C E 215, 315 or c/l; Structure, index properties, and classification of soils; compaction; effective stress; seepage; consolidation and shear strength.  
322 Transportation Engineering 3 Prereq C E 260 or c/l; 301. Transportation engineering; demand and performance functions; geometric design; capacity and control of transport modes.  
330 Introduction to Structural Engineering 3 Prereq C E 215; Math 220. Introduction to structural analysis and design; statically determinate systems; deflections; structural loads; design philosophies.  
341 Introduction to Environmental Engineering 3 Prereq Bio S 103 or Micro 101; Chem 105. Impact of pollutants on the environment; pollution sources and sinks; engineering aspects of air and water quality; introduction to pollution control.  
351 Water Resources Engineering 3 Prereq C E 315. Application of fluid mechanics to hydraulic infrastructure, principles of open channel flow, and introduction to surface and ground water hydrology.  
400 Highway Materials Engineering 3 (2-3) Prereq senior standing. Basic properties and mix designs of aggregates, asphalt, concrete and recycled materials; quality assurance, quality control.  
401 [T] Global Climate Change 3 Prereq completion of one Tier I and three Tier II courses. Basic atmospheric processes; atmospheric change and climate change; global warming; impacts on society and science policy.  
403 Environmental Geology 3 Same as Geol 403.  
405 Geophysics 4 (3-3) Same as Geol 405.
408 Air Pollution Control Engineering 3 Prereq sen- 
inor in Engr or Ph S. Measurement and control of 
air pollution; engineering design calculations; 
equipment and process. Cooperative course 
taught jointly by WSU and UI (Ch E 575). 
Credit not granted for both C E 408 and 508.

410 Experimental Methods in Geotechnical En-
ingineering 3 (1-6) Prereq C E 317. Experiment-
tal methods of evaluating geotechnical en-
ingineering properties including shear strength, 
stress/strain behavior, time-dependent behav-
ior, and permeability. Credit not granted for 
both C E 410 and 510.

414 Structural Design Laboratory 3 (1-6) Prereq 
C E 431, 433 or c/l. Senior design lab on the 
integration of previous course work into the 
execution of design.

415 Environmental Measurements 3 (1-6) Prereq 
C E 341. Theory and laboratory measurement 
techniques used in analyzing environmental 
quality parameters. Credit not granted for both 
C E 415 and 515.

416 Hydraulic Engineering Laboratory 3 (1-6) 
Prereq C E 317. Experiments related to fluid 
flow principles and their application to hy-
draulic engineering.

418 Hazardous Waste Engineering 3 or 4 Prereq 
C E 341 or graduate standing. Hazardous waste 
properties, chemodynamics, and health effects; 
introduction to risk assessment and hazardous 
workplace remediation. Cooperative course 
taught by WSU, open to UI students (CE 435). 
Credit not granted for both C E 418 and 518.

419 Hazardous Waste Treatment 3 Prereq C E 
418. Principles of operation and application of 
processes in design of technologies used in 
hazardous waste treatment and remediation. 
Credit not granted for both C E 419 and 519.

425 Soil and Site Improvement 3 Prereq C E 317. 
Compaction theory and methods; deep densifi-
cation of soils; advanced consolidation theory, 
preloading, vertical drains, chemical stabiliza-
tion, grouting of design with geosynthetics. 
Credit not granted for both C E 425 and 525. 
Cooperative course taught by WSU, open to UI 
students (CE 567).

430 Analysis of Indeterminate Structures 3 
Prereq C E 330. Classical and matrix-stiffness 
methods for the analysis of trusses, beams, 
and frames; computer applications.

431 Structural Steel Design 3 Prereq C E 330. De-
sign of steel structures by working stress design 
and plastic design; uses of AISC Building 
Specification.

433 Reinforced Concrete Design 3 Prereq C E 
330. Behavior, analysis, and design of rein-
forced concrete structures; flexure; shear; 
bond; serviceability requirements; design of 
beams, columns, and slabs.

434 Prestressed Concrete Design 3 Prereq C E 433. 
Behavior, analysis, and design of pretensioned 
and post-tensioned prestressed concrete struc-
tures; flexure, shear, bond, anchorage zone de-
sign; prestress losses. Credit not granted for both 
C E 434 and 534. Cooperative course taught by 
WSU, open to UI students (CE 442).

435 Foundations 3 Prereq C E 317. Site investiga-
tion; bearing capacity, settlement and design 
of shallow foundations, piles and piers; design 
of retaining walls. Cooperative course taught 
by WSU, open to UI students (CE 461).

436 Design of Timber Structures 3 Prereq C E 330. 
Engineering properties of wood products; 
analysis and design connection details, durabil-
ity and moisture effects; lumber, plywood, 
glulam, poles, adhesives. Cooperative course 
taught by WSU, open to UI students (CE 443).

442 Water and Wastewater Treatment Design 3 
Prereq C E 341; major in Engr or Env S. Water 
and wastewater treatment processes and design.

450 Hydraulic Engineering Design 3 Prereq C E 
351. Hydraulic design and planning of facili-
ties associated with gravity controlled and 
pressurized flow. Cooperative course taught 
jointly by WSU and UI (CE 422).

451 Open Channel Flow 3 Prereq C E 315. Steady, 
non-uniform flow; controls and transitions in 
fixed-bed channels. Credit not granted for both 
C E 451 and 551.

460 Advanced Hydrology 3 Prereq C E 351. Com-
ponents of the hydrologic cycle; conceptual 
models; watershed characteristics; probability/
statistics in data analysis; hydrographs; com-
puter models; and design applications. Credit 
not granted for both C E 460 and 560.

462 Engineering Law and Contracts 2 Develop-
ment of legal principles and ethics; law on con-
tracts, agency, sales, property, and patterns; 
 specifications; preparation of contract docu-
ments. Cooperative course taught by UI (CE 
484), open to WSU students.

463 Engineering Administration 3 Engineering 
economy; annual cost, present worth, rate of re-
turn, and benefit-cost ratio in engineering deci-
sion making; basic contract law. Cooperative 
course taught jointly by WSU and UI (CE 386).

464 Construction Management 3 Job schedul-
ing, job planning, project control, records and 
policies, and construction equipment.

465 [M] Integrated Civil Engineering Design 3 
(1-6) Prereq senior in C E. Civil engineering 
applications to planning and design; problem 
synthesis, data analysis, decision making and 
reporting.

471 Meteorology 3 Prereq Math 273; Phys 202. 
Basic meteorology; atmospheric thermody-
namics; cloud physics, synoptic meteorology; 
radiative processes; climate change. Credit 
not granted for both C E 471 and 571.

473 Pavement Design 3 Prereq C E 215, 317; Econ 
101 or 102, Math 360; c/l in C E 322. Systems 
approach to managing pavements; evaluation, 
design, alternative design selection and charac-
terization of pavement materials. Cooperative 
course taught jointly by WSU and UI (CE 475).

474 Intermediate Transportation Engineering 3 
(2-3) Prereq C E 322. Fundamentals of geo-
metric design and traffic engineering for urban 
and rural highways. Cooperative course 
taught by UI (CE 474), open to WSU students.

475 Groundwater 3 (2-3) Same as Geol 475.

478 [M] Ethics and Professionalism 1 Prereq senior 
status. Professional aspects of civil engineering.

495 Engineering Internship V 1-4 May be repeated 
for credit; cumulative maximum 4 hours. By interview only. Placement in a pro-
fessional, governmental, or industrial situ-
ation for specialized or general experience. 
S, F grading.

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

500 Advanced Topics in Transportation Engi-
neering V 2-4 May be repeated for credit; cu-
mulative 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 500).

506 Design and Construction of Water Wells 3 
Analysis of geologic and engineering factors 
important in design, construction, and mainte-
nance of water wells. Cooperative course 
taught by UI (Hydr 575), open to WSU students.

507 Seepage and Earth Dams 3 Principles of 
earth-dam design, failures, considerations in 
construction; principles governing flow of wa-
ter through soils. Cooperative course taught 
by UI (Geol E 535), open to WSU students.

508 Air Pollution Control Engineering 3 Prereq 
graduate standing. Graduate-level counterpart of 
C E 408; additional requirements. Credit 
not granted for both C E 408 and 508.

509 Numerical Modeling of Geomaterials 3 
Prereq graduate-geotechnical engineering-re-
lated 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 En-
ingineering 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 Engineer-
ine V 2-4 May be repeated for credit; cumulative 
maximum 9 hours. Prereq C E 317. Soil dynam-
ics, geotechnical earthquake engineering, theo-
retical soil mechanics, numerical methods in soil 
mechanics, and geohydrology, engineering ge-
ology, cold regions geoenvironment. Coopera-
tive course taught jointly by WSU and UI (CE 
569).

512 Dynamics of Structures 3 Behavior of struc-
tures under impact, impulse, and seismic loads. 
Cooperative course taught jointly by WSU and 
UI (CE 543).

514 Advanced Mechanics of Materials 3 Elastic 
stress-strain relations, shear center, unsymetri-
cal bending, curved beams, elastic stability, elas-
tically 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; addi-
tional requirements. Credit not granted for both 
C E 415 and 515.

516 Unsteady Closed-Conduit Flow 3 Prereq C E 
351. Derivation of governing equations; finite 
difference methods; methods of characteristics; 
boundary conditions; computational proce-
dures; transients caused by centrifugal pumps.

517 Unsteady Open-Channel Flow 3 Prereq C E 
451. Derivation of governing equations; explicit 
and implicit finite difference methods; compu-
tational procedures; stability and convergence.

518 Hazardous Waste Engineering 3 or 4 Prereq 
grade 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
Prereq C E 529, c// in C E 527. Faulting and seismicity; site response analysis; influence of soil on ground shaking; soil liquefaction; 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; in situ relationships 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 jointly by WSU and UI (CE 565), open to WSU students.

531 Probabilistic Methods in Structural Design 3
Probabilistic structural analysis and design; probabilistic characterization of material properties and load combinations (dead, live, earthquake, wind); LRFD structural design. Cooperative course taught jointly by WSU and UI (CE 566), open to UI students (CE 445/545).

532 Finite Elements 3
Theory of finite elements; applications to general engineering systems considered as assemblages of discrete elements. Cooperative course taught jointly by WSU and UI (CE 546).

533 Advanced Reinforced Concrete Design 3
Prereq C E 433. Composite design; slab design; limiting design of footings; retaining walls; deep beams; brackets and corbels; torsion; seismic design; shear walls. Cooperative course taught by WSU, open to UI students (CE 442).

534 Prestressed Concrete Design 3
Graduate-level counterpart of C E 434; additional requirements. Credit not granted for both C E 434 and 534. Cooperative course taught by WSU, open to UI students (CE 442).

536 Nondestructive Testing of Structural Materials 3
Principles of nondestructive testing applied to wood-based materials, steel, concrete, and masonry. Cooperative course taught by WSU, open to UI students (Forp 535).

537 Advanced Topics in Structural Engineering 3
May be repeated for credit; cumulative maximum 6 hours. Elastic stability, plates and shells, other relevant topics. Cooperative course taught by WSU, open to UI students (CE 542).

538 Earthquake Engineering 3

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. Biophysical 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/soil pollution problems, new measurement methods, hazardous waste treatment, global climate change, and water/wastewater treatments.

544 Wastewater Treatment System Design 3
(2-3) Prereq C E 542 or c//. Application of unit operations and processes to design of integrated treatment systems; critical review of designs. Cooperative course taught jointly by WSU and UI (CE 543).

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, transport phenomena, for environmental engineers.

548 Advanced Topics in Water Quality Engineering Systems V 2-4 May be repeated for credit; cumulative maximum 6 hours. Analysis and evaluation of natural water systems for retention and transport of pollutants and their associated impacts.

550 Intermediate Fluid Mechanics 3
Prereq C E 315. Basic flow equations; Navier-Stokes equations; similitude, potential flow, boundary layers, turbulence, and diffusion; uniform and non-uniform conduit flow; drag and lift. Cooperative course taught by WSU, open to UI students (CE 525).

551 Open Channel Flow 3
Graduate-level counterpart of C E 451; additional requirements. Credit not granted for both C E 451 and 551.

552 Advanced Topics in Hydraulic Engineering V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq C E 315. Cavitation, air entrainment, hydraulic machinery, similitude, mixing in rivers and estuaries, hydraulic design. Cooperative course taught by WSU, open to UI students (Hydro 527).

556 Numerical Modeling in Fluid Mechanics 3
Prereq C E 315. Fundamental concepts in development of numerical models for fluid flow with applications to steady and unsteady flows.

560 Advanced Hydrology 3
Graduate-level counterpart of C E 460; additional requirements. Credit not granted for both C E 460 and 560.

561 Water Resources Systems 3
Concepts in water development; coordination of development of other natural resources; systems approach and optimization techniques. Cooperative course taught jointly by WSU and UI (CE 523).

562 Water Resources Planning 3
Prereq C E 351. Design and feasibility studies in water supply, power, flood problems, navigation, irrigation, recreation. Cooperative course taught jointly by WSU and UI (CE 524).

569 Field Methods in Hydrogeology 2
(1-3) Prereq Chem 506, Geol 560.

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).

576 Dynamics of Groundwater Contamination 3

577 Advanced Groundwater Hydraulics 3
Prereq Geol 475, Math 315. Modeling of subsurface flow in saturated, unsaturated, and multilayer systems; analytic and numerical solutions techniques; review of statistical geohydrologic methods.

579 Groundwater Geochemistry V 2-4 May be repeated for credit; cumulative maximum 4 hours. Same as Geo 579.

580 Graduate Seminar 1
May be repeated for credit; cumulative maximum 2 hours. Lectures and reports on current developments in research and practice.

581 Environmental Engineering Analysis 2
(1-3) Prereq C E 541. Theoretical and laboratory methods for development of design criteria for environmental systems. Cooperative course taught by WSU, open to UI students (CE 534).

583 Engineering Aspects of Environmental Chemistry V 2-4 Prereq C E 442. Chemical principles as applied to water supply and pollution control engineering. Cooperative course taught by WSU, open to UI students (CE 553).

584 Engineering Aspects of Microbiology 2
(1-3) Prereq C E 583. The role of microorganisms; bacteria, algae, fungi, viruses and protozoa in water and wastewater systems. Cooperative course taught by WSU, open to UI students (CE 538).

585 Aquatic System Restoration 3
(2-3) Prereq Chem 240 or CE 583; Micro 101 or C E 581. Study of natural and damaged water systems with emphasis on water quality protection and restoration.

586 Bioremediation of Hazardous Waste 3
Prereq C E 584. Applications of bioremediations to in situ subsurface treatment of hazardous waste; subsurface microbial degradation as related to microbial ecology.

588 Atmospheric Turbulence and Air Pollution Modeling 3
Prereq C E 571. Physical aspects of atmospheric turbulence, theoretical developments in atmospheric diffusion, and applied computer modeling with regulatory and research models.
General School Requirements

Each student will complete the requirements of one of the following sequences and accumulate a minor of 18 hours (9 300-400-level hours) in a second department. At least 75 of the 120 hours required for the Bachelor of Arts degree in Communication must be taken in other departments. Transfer students, in meeting the requirements of their chosen sequence, must take a minimum of 15 credit hours in the school.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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.

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 advertising, broadcasting, communication management, communication studies, journalism, or public relations. Students may also fashion a general communication curriculum. The undergraduate program reflects a blending of professional, liberal arts, and theory and research courses.

Students in newspaper journalism and communication studies may prepare for teacher certification through the Department of Elementary and Secondary Education. The School also cooperates with the College of Agriculture and Home Economics in support of the agricultural communications option.

Supplementing the classrooms and laboratories of the Murrow School are the professional internship program, campus radio and television facilities, and student publications, including a daily newspaper.

Certification Requirements

To certify a major in communication, a student must have earned at least 45 semester hours and normally no more than 90 hours and meet the following minimum requirements: (1) 2.7 cumulative g.p.a. in WSU communication courses; (2) 2.5 overall cumulative g.p.a.; (3) C grade or better in Com 101, 245, 270, 295; ComSt 102. Students transferring into the department with 55 or more hours are urged to complete communication certification requirements within two semesters.

Satisfactory completion of a writing skills test is required for enrollment into Com 295.

BROADCAST MANAGEMENT DEGREE PROGRAM (120 HOURS)

Sophomore Year

First Semester

Acctg 230 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
GenEd 110 [A] (GER) 3

Second Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Com 270 3
GenEd 111 [A] (GER) 3

Junior Year

First Semester

Adver 380 3
Arts & Humanities [H,G] (GER) 3
Intercultural [I,G,K] (GER) 3
Physical Sciences [P] (GER) 4
Social Sciences [S,K] (GER) 3

Second Semester

Adver 381 [M] 3
Foreign Language, if necessary, or Electives 3
Minor Elective 3
Mktg 360 3
Science Elective 1
Complete Writing Portfolio

Second Semester

300-400-level Minor Electives 6
Adv 382 3
Biological Sciences [B] (GER) 4
Com Development Elective 3

Senior Year

First Semester

300-400-level Minor Elective 3
Com Literacy Elective 3
Com Literacy Elective (For Enrichment) 3
Minor Elective 3
Seminar [M] 3

Second Semester

Adver 480 3
Com Development Elective (For Enrichment) 3
Foreign Language, if necessary, or Electives 6
Tier III Capstone (GER) 3

1 18 credits in another department, 9 of which are 300-400-level.
2 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
3 Students may substitute one four-credit Tier I Science for both the three-credit Tier I Science and one-credit Science Elective.
4 Communication Development Electives: Com 409, 415, 420, 470, 481, ComSt 435, 485, 488.
5 Communication Literacy Electives: Com 410, 440, 450, 460, ComSt 324, 385, 401, Jour 425.
6 Any seminar numbered 475 in communication.

Edward R. Murrow School of Communication
### Sophomore 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>
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<tr>
<td>Com 245</td>
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<tr>
<td>Com 295</td>
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<tr>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</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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<th>Junior Year</th>
<th>Hours</th>
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<td>300-400-level Minor Electives(^1)</td>
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<tr>
<td>Bdcst 350</td>
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<td>Com Development Elective(^3)</td>
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### Second Semester

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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Complete Writing Portfolio</td>
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### Senior Year

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<td>300-400-level Minor Elective(^4)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<td>Com 415</td>
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<td>Degree Program Course(^6)</td>
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<td>Foreign Language, if necessary, or Elective(^2)</td>
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<th>Second Semester</th>
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<tr>
<td>Com Development (for enrichment)</td>
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<tr>
<td>Foreign Language, if necessary, or Elective(^2)</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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### Second Semester

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<th>Hours</th>
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<td>Complete Writing Portfolio</td>
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### Communication Studies Degree Program (120 Hours)

<table>
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<tr>
<th>Sophomore Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Com 245</td>
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<tr>
<td>Com 295</td>
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<td>ComSt 185 or 235</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>ComSt 251, 302, or 251</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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<td>ComSt 324 or 401</td>
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<td>300-400-level ComSt Elective</td>
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<td>Biological Sciences [B] (GER)</td>
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<td>Com Development Elective(^3)</td>
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<th>Senior Year</th>
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<td>Minor Elective(^2)</td>
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<td>Elective</td>
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### Second Semester

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### Junior Year

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<td>Jour 425</td>
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### Senior Year

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<td>Minor Elective(^2)</td>
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<tr>
<th>Second Semester</th>
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<tr>
<td>Com Development (for enrichment)</td>
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<tr>
<td>Foreign Language, if necessary, or Elective(^1)</td>
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### Second Semester

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1. 18 credits in another department, 9 of which are 300-400-level.
2. Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
3. Students may substitute one four-credit Tier I Science for both the three-credit Tier I Science and one-credit Science Elective.
5. Communication Literacy Electives: Com 410, 440, 450, 460, ComSt 324, 385, 401, Jour 425.
6. Any seminar numbered 475 in communication.

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Edward R. Murrow School of Communication
SCHOOL MINORS
Students declaring a minor in communication must choose one of the following sequences and complete a minimum of 18 hours, including 9 300-400-level hours and the following required courses: Advertising: Adver 380, 381, 382; Com 295. Broadcasting: Bdcst 330, 475, Com 295, 415. Communication Studies: 18 hours of approved ComSt courses. Journalism: Com 295, 410, 415, Jour 305, 330, 425. Public Relations: Com 295, Jour 305, P R 312, 313, 412.

Agricultural Communications
This is a major in the Department of Biological Systems Engineering in cooperation with the School of Communication. The student declaring this major must complete the requirements of the general agricultural curriculum and accumulate a minimum of 30 hours in the School of Communication, including any communication courses used to satisfy general agricultural requirements. Those electing this major should make that decision known as early as possible in their academic careers. Agricultural communications majors must complete the following: Broadcast Media: Bdcst 350, 355, 365; Com 295, 409; P R 312, 313, 412; and 6 elective hours in the School of Communication. Print Media: Com 253, 295, 409; Jour 305; P R 312, 313, 412; and 9 elective hours in the School of Communication. The student should consult with a School of Communication 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.

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.

Intersession Courses
Com
101 S] Mass Communications and Society 3
Mass media in contemporary society.
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.
295 Media Writing 3 (2-3) Prereq Com 101, 245, 270; typing proficiency. Writing for the media; journalistic and persuasive writing. (The typing proficiency may be waived on an individual basis for otherwise qualified disabled students.)
321 I] Intercultural Communication 3 Culture and communication.
340 Ethics in Mass Media 3 Application of basic concepts of ethics to media performance in news, advertising and entertainment.
403 Media and the Canadian Experience 3 History, structure, function of Canadian media; multiculturalism, media imperialism, news production, management censorship, freedom of information. Cooperative course taught by U1 (ComG 440), open to WSU students.

409 Quantitative Research 3 Measurement, questionnaire construction, sampling, data collection techniques, analysis and hypothesis testing in communication research.

410 History of Mass Communications 3 For seniors and graduate students. Credit not granted for both Com 410 and 510.

415 Law of Mass Communications 3 Prereq senior standing. Credit not granted for both Com 415 and 515.

420 New Communication Technologies 3 Prereq senior standing. New communication technologies, their impact on communication processes, access, regulation, and communication in organization/professional contexts. Credit not granted for both Com 420 and 520.

423 Advanced Photography 3 (2-3) Prereq Com 253. Portfolio development/directional development of student work; advanced black and white printing techniques.

450 Mass Media and the First Amendment 3 Prereq senior standing. Theoretical and philosophical bases of press, individual and government interaction centering on First Amendment. Credit not granted for both Com 450 and 550.

453 Advanced Photography 3 (2-3) Prereq Com 253. Portfolio development/directional development of student work; advanced black and white printing techniques.

455 Mass Media Criticism 3 Prereq senior standing. Theoretical and philosophical basis for critical analysis of mass communication. Credit not granted for both Com 450 and 550.

470 Mass Communications Theories and Theory Construction 3 Prereq senior standing. Theories of mass communication and the process of theory construction.

481 Media Ethics 3 For seniors and graduate students.

495 Communication Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. By interview only. S, F grading.

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

501 Theory and 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.

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 524.

525 Rhetorical Theory 3 Major theories from classical to contemporary; analysis of symbolic action in public, political discourse.

520 New Communication Technologies 3 Graduate-level counterpart of Com 420; additional requirements. Credit not granted for both Com 420 and 520.

528 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 450; 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.

567 Communication Theory 3 Relevant theories and research from mass and interpersonal communication.

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 Research Methods 3 Historical, textual, and legal methodologies for theory-based evaluative and discourse studies in communication.

599 Seminar in Communication 3 May be repeated for credit; cumulative maximum 6 hours. Special topics in rhetoric, communication, and public address.

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

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

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

Advertising

Adver 380 Advertising Principles and Practices 3 Advertising history, theory and practice by advertising agencies and organizations.


382 Media Planning 3 Prereq Adver 380. Media planning theories, strategies, and practices.

475 Special Problems 3 May be repeated for credit; cumulative maximum 9 hours. Prereq Com 409; for seniors and graduate students.

481 Broadcast Management 3 Prereq senior standing. Credit not granted for both Bdcst 481 and 581.

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.

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.

580 Advertising Agency Operation and Campaigns 3 Graduate-level counterpart of Adver 480; additional requirements. Credit not granted for both Adver 480 and 580.

581 Advertising Psychology 3 Prereq graduate standing. Examination of social and cognitive psychological theories which have contributed to the practice of advertising.

582 Advertising Management 3 Prereq graduate standing. Case method approach to appraising market opportunities for the planning, development, implementation, and administration of advertising programs.

Broadcasting

Bdcst

150 Introduction to Broadcast Equipment 1 (0-3) By interview only. Orientation to broadcast equipment; audio, studio television, and field television, as applied to various functions. S, F grading.

350 Introduction to Telecommunications 3 (2-3) Prereq Com 295. Fundamentals of the history, structure, economics and operations of broadcasting and cable.

355 Studio TV Production 3 (1-6) Prereq Bdcst 350, 355.

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.


365 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 New 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 581.
495 Broadcasting Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. Prereq Bdcst 365, 455, or 465. By interview only. S, F grading.

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

565 Broadcast News Writing, Reporting, and Editing 3 (2-3) Graduate-level counterpart of Bdcst 465; additional requirements. Credit not granted for both Bdcst 465 and 565.

566 Advanced Reporting and Documentary 3 (2-3) Graduate-level counterpart of Bdcst 481; additional requirements. Credit not granted for both Bdcst 481 and 581.

Communication Studies (Speech Communication)

ComSt (SpCom)


185 Principles of Interpersonal Communication 3 An introduction to the theory and practice of interpersonal communication; understanding and applying intrapersonal information in interpersonal settings.

235 [C] Principles of Group Communication 3 Theoretical and practical aspects of communication in groups; classroom exercises and films demonstrate principles and develop skills.

251 Oral Interpretation of Literature 3 Analyzing and oral reading of prose, poetry, and drama; sharing literature with an audience.

302 [C] Advanced Public Speaking 3 Advanced principles of public speaking and their practical implementation for effective communication.

324 [C] [M] Argumentation 3 Theory, analysis and application of written and oral arguments in everyday use.

334 Deliberative Decision-Making 3 Debate; researching the topic, case construction, analysis, and practice debating.

335 Organizational Communication 3 Prereq ComSt 235 or P R 312. Communication theory and organizational functions; communication influences on organizational behavior, managerial effectiveness, corporate culture, organizational power and politics.

351 Advanced Interpretation 3 Voice and 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 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 Speech Communication 3 By interview only. May be repeated for credit; cumulative maximum 9 hours. For seniors and graduate students.

485 Applied Interpersonal Communication 3 Prereq ComSt 185 or 385. How a person relates to others; cognitive and affective parts 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 Speech 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.

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.

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

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 P R 313. Advanced copy editing and design techniques; emphasis on visual communication.

475 Seminar in Journalism 3 May be repeated for credit; cumulative maximum 12 hours. For seniors and graduate students.

481 Newspaper Management 3 Senior standing. Credit not granted for both Jour 481 and 581.

495 Journalism Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. By interview only. Prereq Jour 330, 425. S, F grading.

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

525 Reporting of Public Affairs 3 Graduate-level counterpart of Jour 425; additional requirements. Credit not granted for both Jour 425 and 525.

581 Newspaper Management 3 Graduate-level counterpart of Jour 481; additional requirements. Credit not granted for both Jour 481 and 581.

Public Relations

PR

312 Principles of Public Relations 3 Prereq Com 295. Principles, theories, methods and objectives of public relations; public relations problems and practices.

313 [M] Public Relations Techniques and Media Usage 3 (2-3) Prereq Com 295, Jour 305; 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.

475 Public Relations Seminar 3 May be repeated for credit; cumulative maximum 9 hours. By interview only. For seniors and graduate students. Theory, methods, and applications of communication and campaign management; political communication, health communication, freedom of expression, special audiences. Credit not granted for both P R 475 and 575.

495 Public Relations Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. Prereq Jour 305, P R 313; by interview only. S, F grading.

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

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.

SPEECH COMMUNICATION COURSES

See Communication Studies (ComSt)

COMMUNITY STUDIES MINOR

See Program in Rural Sociology.

Department of Comparative American Cultures

Professor and Chair, E. San Juan; Professors, A. Kuo, J. Peterson; Associate Professors, D. Aguilar, S. Fowler, R. Ong; Assistant Professors, C. Beckles, K. Ervin, Y. Flores Niemann, B. Pincheon, M. Pizarro, L. Vo; Associate Professor Emeriti, T. Anderson, W. Willard.

The Department of Comparative American Cultures has a distinct function within the larger structure of Washington State University. It has the responsibility for providing the undergraduate student population with the critical understanding that
Ours is a complex multicultural society, made up of many racial and ethnic communities. The overall educational experience provides students with the opportunity to find significance and meaning in living within a complex multiracial and multi-cultural nation.

Comparative American Cultures offers an undergraduate major and minor which includes a stimulating sequence of core courses that introduce students to sophisticated critical analyses of race, ethnicity, and culture. The department also provides instruction through a comprehensive curriculum within four areas of emphasis: 1) African American Studies; 2) Asian/Pacific American Studies; 3) Chicana/o Studies; and 4) Native American Studies. Students can choose a particular area of emphasis or double-major in tandem with another discipline, such as American studies, anthropology, business, communication, education, English, environmental science, history, political science, psychology, sociology, teaching and learning, women's studies, and many others.

CAC faculty bring to their instruction and research multidisciplinary expertise in the areas of literature, cultural studies, education, political science, psychology, history, sociology, and anthropology. Faculty teach courses and conduct research that reflects this multidisciplinarity, thereby enriching the intellectual climate for students across the university. Many CAC faculty also hold joint appointments with departments of their specialty and most are members of the graduate faculty.

In addition to its strong academic curriculum, the Department of Comparative American Cultures is committed to developing relationships with organizations in the Pacific Northwest whose work strengthen multicultural and multiracial relationships locally, regionally, nationally, and globally. Students involved in a major program of study within the department are encouraged to seek out internships which provide them the opportunity to incorporate community service with their academic work.

The Department of Comparative American Cultures publishes the Working Paper Series in Cultural Studies, Ethnicity, and Race Relations, an international scholarly project for the research and exchange of ideas on globalization, ethnic conflict, and new forms of racism and sexism in the world system. It awards several scholarships to deserving students. It sponsors a film and lecture series. It supports the Cultural Studies Club for CAC majors and the Women's Cultural Studies Club for CAC majors and the Women's Cultural Studies Club for CAC majors. It promotes an independent study program which provides the opportunity to incorporate community service with their academic work.

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Comparative American Cultural Studies 3
Comparative analyses of the historic colonialist practices in the Americas and the continued colonial presence in contemporary culture.

Social Psychology of Prejudice 3
Preq 3 hours CAC or Psych. Applications of classic and modern theories of prejudice to American society.

Research Methods and Strategies 3
Quantitative, qualitative, and/or literary research methods and strategies particular to the study of race, ethnicity, and culture.

Asian Pacific/American Literature 3
American Asian fiction, drama, poetry, and other arts, 1900 to present; impact of Asian/Pacific American culture and experience upon these works.

Topics in Asian/Pacific American Literature 3
May be repeated for credit; cumulative maximum 6 hours. Trends, themes, major writers.

African American Literature 3
Introduction to major issues and major works in the African American literary tradition.

Topics in African American Literature 3
May be repeated for credit; cumulative maximum 6 hours. Same as Engl 322.

Civil Rights Movement in America 3
Historical development and analysis of the Civil Rights Movement in the United States from 1900 to present.

African American Folklore 3
Preq CAC 131 or 101. History of African American folk culture, examining African folklore, slave narratives, folktales, collections, and literary and critical sources.

Black Social Psychology 3
Preq CAC 101 or 131. Approaches and perspectives in contemporary psychology that lead to a broader understanding of the social psychological functioning of African Americans.

African American Cinema 3

Black Politics 3
Same as Pol S 324.

Spanish for Spanish Speakers I 1 Same as Span 324.

Chicano/Chicana Literature 3
Chicano/Chicana literature, narrative (novel and autobiography), poetry, short story, drama; development of writing skills.

Vanguard Poetics in Chicano/Latino Writers 3
Concepts and techniques of Chicano/Latino vanguard poetry.

Chicanas/os and the Educational System 3
Investigation of the educational experiences, both current and historical, of Chicanas/os in the United States.

Bilingual Bicultural Education 3
Philosophical, legal, cultural, linguistic, and curricular aspects of bilingual education.

Chicana/o Identity Power and Empowerment 3
History and evolution of Chicana/o identity as an essential means toward understanding the Chicana/o experience.

Chicano/Latino Politics 3
Character, role, and goals of Chicano/Latino politics; contemporary Chicana/o/Latino issues.

Native American Literature 3
Native American literature, by and about the original inhabitants, image and counter-image, with emphasis on the 20th century.

North American Indian History, Precontact to Present 3
Same as Hist 308.

America Before Columbus 3
Same as Anth 331.

Native Peoples of North America 3
Same as Anth 320.

Contemporary Native Peoples of the Americas 3
Same as Anth 327.

Topics in Canadian Studies 1
Same as Hist 315.

Cultural Criticism and Theory 3
Preq completion of one Tier I and three Tier II courses. Major critiques and theories of colonialist and imperialist formations of culture.

Asian Pacific American Women 3
Preq CAC or W St course; Rec CAC 101 or W St 200. Intersection of ethnicity, race, class, gender and sexuality in the lives of Asian Pacific American Women.

Asian Pacific Americans and Popular Culture 3
Preq CAC 101 or 111. Examines the racial politics that have developed around the representation of Asian Pacific Americans in U.S. popular culture.

United States 1941 to Present 3
Same as Hist 419.

Modern Japanese History 3
Same as Hist 477.

History of the Pacific Northwest 3
Same as Hist 422.

[KG] African Politics 3
Preq completion of one Tier I and three Tier II courses. Historical, economic, and social factors that shape contemporary African political systems and problems of nation-building.

Social Justice and American Culture 3
Preq completion of one Tier I and three Tier II courses. Social justice issues in relation to diverse American cultures in both an historical and contemporary context.

Health Issues for Chicanos/as 3
Preq junior standing. Current health issues related to Chicano/a and other Latina/o populations.

La Chicana in US Society 3
Preq junior standing; completion of one Tier I and three Tier II courses. Intersection of race, class, gender and sexual orientation in the experience of a marginalized group - Chicanas.

Bilingual Methods and Materials Across Content Areas 3
Same as T & L 411.

Chicano/Latino Psychology 3
Preq CoPsy 525, Psych 522, or by interview only. Current psychological research and literature relevant to the psychological well being of chicano/latino populations. Credit not granted for both CAC 457 and CoPsy 557.

Latin American Governments 3
Same as Pol S 413.

Federal Native American Resource Settlement Models 3
Preq completion of one Tier I and three Tier II courses. Issues involving indigenous ownership of natural resources within the US.

Indians of the Northwest 3
History of Native Americans of the Coast and Plateau; historic relationship with Europeans and Anglo-Americans.

Leadership in an American Context: Issues of Race and Gender 3
Preq junior standing. Contextualization of leadership on the national, local, and grassroots levels in the United States through examining issues of race and gender.

Seminar in Theories of Racism and Ethnic Conflicts 3
Preq CAC 101. Provides general knowledge of the history of racist ideas and the social, political, and cultural contexts underlying ethnic conflicts.

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, Chicanos, and Native Americans.

Internship in Comparative American Cultures 3
Preq 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.

COMPUTER ENGINEERING OR COMPUTER SCIENCE

Program in Criminal Justice


The Program in Criminal Justice, located in the Department of Criminal Justice, 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, 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, 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.
**Degree Program Requirements**

Honors students complete Honors Requirements in place of General Education Requirements.

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 DEGREE PROGRAM (122 HOURS)**

### Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Crm J 101</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or</td>
<td></td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Communication [C,W] (GER)</td>
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<tr>
<td>Crm J 150</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>Science Elective / Tier I Science</td>
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### Sophomore Year

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<tr>
<td>Arts &amp; Humanities [H,G] or</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Crm J 320</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<tr>
<td>Second Semester</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<td>Psych 311, Soc 321</td>
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<td>Approved Statistics Course</td>
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<td>Two from: Pol S 300, 402, 404, 443</td>
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<td>or Soc 364</td>
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<td>Junior Year</td>
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<td>First Semester</td>
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<td>Crm J 330</td>
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<tr>
<td>Crm J Electives ²</td>
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<td>Complete Writing Portfolio</td>
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<td>Second Semester</td>
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<tr>
<td>One from: Pol S 316, 416, or Soc 424</td>
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<tr>
<td>Pol S 340</td>
<td>3</td>
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<tr>
<td>Soc 320</td>
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<td>Soc 361</td>
<td>3</td>
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<tr>
<td>Soc 461</td>
<td>3</td>
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<td>Senior Year</td>
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<td>First Semester</td>
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<td>Foreign Language, if necessary, or Electives</td>
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<tr>
<td>Electives</td>
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### Second Semester

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<th>Course</th>
<th>Hours</th>
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<tr>
<td>Foreign Language, if necessary, or Electives</td>
<td>4</td>
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<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

¹ Students may substitute one four-credit Tier I Science for both the three-credit Tier I Science and the Science Elective.

² At least 9 hours in Crm J courses:

- CRM J 365, 370, 381, 400 [M] (may be taken twice), 403, 405 [M], 420 [M], 425, 490, 499; SOC 360, 362, 480.

### Minor in Criminal Justice

The minor in criminal justice requires 18 credits of course work in criminal justice, including Crm J 101, 320, 330. Half of the courses must be taken at the 300-400-level. Students wishing to declare a minor in criminal justice should contact the Criminal Justice Program for details.

### Transfer Students

Students planning to transfer to Washington State University at the end of the freshman or sophomore year should follow as closely as possible the general and core course requirements set forth above. If this is done, there should be no difficulty in completing the requirements for the bachelor’s degree within the normal period of four years. It should also be noted that courses numbered 300 or above at Washington State University and taken at other institutions during the freshman or sophomore years will not be accepted for major requirements.

### Preparation for Graduate Study

Undergraduates who are pursuing their studies at other institutions or through other curricula at this institution and who contemplate graduate work in this program will do well to elect courses similar to those required in the above schedule of studies.

### Description of Courses

#### Criminal Justice

**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).

**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).

**320 Criminal Law**

3 Substantive criminal law; principles, functions, and limits; basic crime categories, state and national legal research materials. Cooperative course taught jointly by WSU and UI (CJ 325).

**330 Crime Control Policies**

3 Prereq Crm J 101. Analysis of ideologies, assumptions, and performance of crime control, policies. Cooperative course taught by WSU, open to UI students (CJ 330).

**356 Juvenile Justice and Corrections**


**370 Introduction to Policing in America**

3 Prereq Crm J 101. Development, organization, policies, and performance of the police. Cooperative course taught by WSU, open to UI students (CJ 370).

**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 401).

**403 [S] 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.

**425 Law of Corrections**

3 Prereq Crm J 320. Impact of federal and state laws; court decisions regarding corrections.

**499 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).

**540 Seminar in Research Evaluation**

3 Interrelationship of ideology, data, policy development, and policy implementation in public policy analysis. Cooperative course taught by WSU, open to UI students (CJ 540).

**541 Seminar in Corrections**

3 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 individu-
als, organizations, and communities to reduce
crime and improve the criminal justice sys-
tem. Cooperative course taught by WSU, open
to UI students (CJ 550).

570 The Police and Society
3 Community and se-
lected 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 Seminar in the Administration of Criminal
justice. 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 in-
ternship 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 admin-
istration of criminal justice. Cooperative course
taught by WSU, open to UI students (CJ 591).

592 Topics in Criminal Justice
3 May be repeated for credit; cumulative maximum 6 hours. Se-
lected issues and topics in criminal justice.

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

Professor and Department Chair, T. A. Lampkin; Crop
Science: Professors, D. W. Evans, A. Kleinhofs, J. D.
Maguire, D. G. Miller, F. J. Muehlbauer, R. Parker,
M. K. Walker-Simmons, S. E. Ullrich, D. VonWettstein,
R. L. Warner; Associate Professors, P. Chevalier, S. C.
Fransen, A. N. Fransen, S. S. Jones, W. Schillinger, G.
Stuhbke, F. L. Young; Assistant Professors, S. Dofing,
E. Donaldson, E. R. Galland, M. J. Hattendorf, R.C.
Johnson, W. J. Johnston, S. T. Kenny, K. K. Kidwell,
T. Miller, C. F. Morris, M. Stannard, J. P. Yenish. Soil
Science: Professors, D. F. Bezdicek, A. J. Busacca,
A. C. Kennedy, S. Kuo, W. L. Lan, J. P. Reganold,
R. G. Stevens; Associate Professors, C. G. Cogger,
A. S. Felsot, B. E. Frazier, J. B. Harrs, F. J. Peryea,
J. L. Smith; Assistant Professors, J. R. Davenport,

The department offers study programs leading to
the degrees of Bachelor of Science in Crop Sci-
ce, Bachelor of Science in Soil Science, Master
of Science in Crop Science, Master of Science in
Soil Science, Doctor of Philosophy (Crop Science),
and Doctor of Philosophy (Soil Science). Students
can select from several options of study to fit their
career objectives and needs.

Students are encouraged to participate as part-time
employees in research programs and seek profes-
sional internships for applied learning experiences.
Departmental and college scholarships are available
based on ability, need, and interest. Students gain pro-
fessional and social contacts with the faculty and other
students through the student club activities.

CROP SCIENCE
Crop scientists and agronomists are involved in im-
proving food, feed and fiber production. They study
metabolic and developmental processes of crop
plants and seeds, develop improved crop varieties
through plant breeding and biotechnology, design
sustainable crop production and management sys-
tems which conserve natural resources while enhanc-
ing crop yields, and investigate the impact of crop-
ping systems on agricultural and nonagricultural
ecosystems. Turf management opportunities include
golf course management, recreational facilities, and
lawn care. Graduates qualify for careers in agribusiness, corporate and technical farm manage-
ment, professional consulting, research, sales, plant
biotechnology, and service positions. Positions are
available in government and commercial agencies
such as USDA’s Agricultural Research Service, Soil
Conservation Service and Cooperative Extension, the
Environmental Protection Agency or Washington De-
partment of Ecology, state Departments of Agricul-
ture and Natural Resources, as well as in food pro-
cessing companies, insurance agencies, and
commercial concerns dealing with farm products,
fertilizers and agricultural chemicals and seeds. Op-
portunities also exist for employment and further
study in international agriculture such as through the
US Agency for International Development (USAID)
and World Bank, international research institutes, and
the US Peace Corps. Teaching, research, and exten-
sion careers are available in community colleges and
universities for graduates with advanced degrees.

An interdisciplinary curriculum in integrated
pest management is available to those students
whose interests span the areas of crop science and
pest management. This curriculum is described
under the entomology section of this bulletin.

SOIL SCIENCE
Soil scientists are concerned with the physical,
chemical, and biological processes that govern
natural, agronomic, and disturbed systems. 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 contami-
nated soils; transport of pesticides through soils;
bioremediation of hazardous wastes; use of mi-
crobial systems to control weeds and plant diseases; surface
chemistry of soil minerals; modeling of cropping
systems; remote sensing of soils and vegetation;
and strategies in precision farming.

Graduates qualify for careers in agribusiness,
consulting, waste management, research, and ser-
vice positions. Positions are available with private
consulting firms and commercial concerns dealing
with farm products. In addition, government agen-
cies including Agricultural Research and Extension,
Agricultural Research Service, Departments of Ag-
riculture, Natural Resources and Ecology, and the
Natural Resource Conservation Service have need
of soil science graduates. Opportunities also exist in
international development.

Crop Science Degree Program
Requirements

Honors students complete Honors Requirements in
place of General Education Requirements.
At least 40 credit hours must be in 300-400-level
courses. Core and option requirements cannot be
taken pass, fail. Students must consult advisors.
All crop science majors must select one of the
study options listed below in addition to complet-
ing 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
Ag Econ 201 [S], Econ 101 [S].
Chem 101 [P] or 105 [P] [GER].

Second Semester
Bio S 103 [B] [GER].
Chem 102 [P] or 106 [P] [GER].
GenSt 102 [C] or H D 205 [C] [GER].

Sophomore Year
First Semester
Arts & Humanities [H,G] [GER].
Bio S 104 [B] or Bot 120 [B] [GER].
Crops 201.

Second Semester
Arts & Humanities [H,G] or
Social Sciences [S,K] [GER].
Chem 240.
GenEd 110 [A] or 111 [A] [GER].
SoilS 201 [B] [GER].

BUSINESS AND INDUSTRY DEGREE
PROGRAM (124 HOURS)

For students who wish to engage in farming, cor-
porate farm management, production specialist po-
sitions, consulting, international careers, and
agribusiness.
### Junior Year

**First Semester**
- Ag Ec Elective: 2 or 3
- Ag Ec Mgt or Mktg sequence<sup>1</sup>: 3
- Bot 320: 4
- CropS 360: 3
- CropS 403: 3
- Complete Writing Portfolio

**Second Semester**
- Ag Ec Mgt or Mktg sequence<sup>1</sup>: 3
- Crop Production Elective: 3
- SoilS 441: 3
- SoilS 442: 2
- Elective: 3

**Senior Year**

**First Semester**
- CropS 305: 3
- CropS 360: 3
- CropS 403: 3
- CropS 410: 3
- Elective: 3
- Complete Writing Portfolio

**Second Semester**
- Bio S 372: 4
- Bot 320: 4
- CropS Elective: 3
- ES/RP 444: 3
- SoilS 421 or 431: 3

**SCIENCE/BIOTECHNOLOGY DEGREE PROGRAM (126 HOURS)  ✔FYDA**

For students who wish to specialize as scientists in such areas as crop physiology, plant breeding, biotechnology and environmental quality. Students may qualify for research or teaching careers with universities, colleges, governmental agencies, or industry.

**Junior Year**

**First Semester**
- CropS 305: 3
- CropS 360: 3
- CropS 403: 3
- CropS 410: 3
- Elective: 3
- Complete Writing Portfolio

**Second Semester**
- CropS 498 or 499: 1-3
- CropS Elective: 3
- SoilS 421 or 431: 3

**Senior Year**

**First Semester**
- CropS 305: 3
- CropS 360: 3
- CropS 403: 3
- CropS 410: 3
- Elective: 3
- Complete Writing Portfolio

**Second Semester**
- CropS 498 or 499: 1-3
- CropS 411 [M]: 3
- CropS 412: 1
- CropS 445 [M]: 3
- Tier III Capstone (GER): 3
- Elective: 3

### 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 crop science core requirements.

### Preparation for Graduate Study

Preparation for graduate study requires the selection of courses that will benefit later work toward a Master of Science or a Doctor of Philosophy degree. Normally, preparation for an advanced degree in crop science includes course work outlined under one of the above options with a strong emphasis in plant sciences, chemistry, computer science, mathematics, and statistics.
Soil Science Degree Program

Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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  Hours
Bio S 103 [B] (GER) 4
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Math 107

Second Semester  Hours
Bio S 104 [B] or Bot 120 [B] (GER) 4
Chem 106 [P] (GER) 4
Communication Proficiency [C,W] (GER) 3
Math 140 [N] or 171 [N] (GER) 4

Based on the mathematics placement exam scores, students may not need to enroll in Math 107.

ENVIRONMENTAL SOIL SCIENCE DEGREE PROGRAM (122 HOURS) ✔FYDA

This option emphasizes the basic principles of soils as they relate to the quality of the environment.

Sophomore Year

First Semester  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
Arts & Humanities [H,G] (GER) 3
Chem 240 4
Geol 102 [P] (GER) 4

Junior Year

First Semester  Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
SoilS 421 3
SoilS 441 3
SoilS 442 3

Second Semester  Hours
Crops 305, Entom 305, or PI P 429 3
Elective 3
Complete Writing Portfolio

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 [L,G,K] (GER) 3
SoilS 412 1
Stat 212 or 412 3 or 4
Tier III Capstone (GER) 3
Elective 3

SUSTAINABLE AGRICULTURE DEGREE PROGRAM (125 HOURS) ✔FYDA

This option integrates concepts of biodiversity, cropping systems, farm management, soil quality, and agroecology.

Sophomore Year

First Semester  Hours
Ag Ec 201 [S1] (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
Bio S 372 4
CropS 305 or 413 3
Intercultural [L,G,K] (GER) 3
SoilS 301 [M] 3
SoilS 360 3
Complete Writing Portfolio

Second Semester  Hours
Arts & Humanities [H,G] (GER) 3
GenCB 210 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 1

Second Semester  Hours
Ag Ec 340 3
IPM 462 3
SoilS 412 3
Stat 212 or 412 3 or 4
Tier III Capstone (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 (2-6) Prereq CropS 104 or c/l. 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 Bio S, Bot, 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 (PisC 301).

302 Forage Crops 3 (2-3) Prereq Bio S 104 or Bot 120. Adaptation, production, and utilization of forage crops. Field trip required.

303 Cropping Systems 3 Prereq Bio S 104 or Bot 120; CropS 201. Management principles for sustainability of rained and irrigated agro- nomic cropping systems. Field trips required.

305 Principles of Weed Science 3 (2-3) Prereq Bio S 104, Bot 120, CropS 101, 201, or Hort 101 or 201; Chem 240. Weed science; weed identification, biology and control; herbicides and factors influencing their use.

317 Golf Course Management 1 Prereq CropS 301. Specific management practices for golf courses in the Pacific Northwest.

360 [I] World Agricultural Systems 3 Prereq two semesters physical or biological sciences. Study of agro-environmental characteristics of world agriculture; historical and contemporary features of world food production.

403 Advanced Cropping Systems 3 Prereq CropS 201; PI P 429 or c/l; 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.

410 Seed Science and Technology 3 (2-3) Prereq Bio S 104 or Bot 120; Bot 320. Principles of seed biology, development and physiology; seed quality evaluation. Cooperative course taught by WSU, open to UI students (PlSc 410).


412 Seminar 1 May be repeated for credit. Current literature and reports on research or special topics.

413 Biology of Weeds 3 Prereq Bot 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.

445 [M] Plant Breeding 3 Prereq GenCB 301. Genetic principles applied to the improvement of plants.

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 (Pisc 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.

504 Plant Transmission Genetics 3 Prereq GenCB 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 (Pisc 504).

505 Molecular Approaches for Improving Crop Quality and Adaptation 3 Prereq BC/BP 364 or Bot 320; 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 (Pisc 505).

508 Advanced Crop Physiology I 3 Prereq BC/BP 364. 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 (Pisc 508).

509 Advanced Crop Physiology II 3 Prereq Bot 320, GenCB 301. Physiology and genetics of plant hormones, carbon and nitrogen assimilation and partitioning, and seed development. Cooperative course taught by WSU, open to UI students (Pisc 509).

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.

520 Plant Cytogenetic Techniques 3 (1-6) Prereq GenCB 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 Bot 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.

536 Plant Genetic Engineering Laboratory 2 (0-6) Prereq Bot 325. Experiments: synthesis and cloning of a gene, expression of a heterologous protein in yeast and barley.

539 Herbicide Fate and Mode of Action 4 Prereq CropS 305, BC/BP 364, Bot 320. 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).

546 Plant Breeding 3 Prereq GenCB 301. Principles and practices of genetic plant improvement. Cooperative course taught by UI (Pisc 546), open to WSU students.

556 Insecticides: Toxicology and Mode of Action 1 Same as Entom 556.

557 Herbicides: Toxicology and Mode of Action 1 Same as Entom 557.

558 Pesticides Topics 1 Same as Entom 558.

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

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

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

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

Description of Courses

Soil Science

SoilS
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.


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, wild-land management problems.

412 Seminar 1 Same as CropS 412.

413 Introduction to Soil Physics 3 (2-3) Prereq Math 107; SoilS 201. Characterization of soil properties including water content and potential, and hydraulic conductivity; modeling water, solute transport, erosion, contamination of groundwater.

414 Environmental Biophysics 2 Prereq Math 107. Physical environment of living organisms (temperature, humidity, radiation, wind); heat and mass exchange and balance in plant and animal systems. Cooperative course taught by WSU, open to UI students (Bot 435). Credit not granted for both SoilS 414 and 514.

415 Environmental Biophysics Laboratory 1 (0-3) Prereq SoilS 414 or c/l. Experimental methods and procedures in environmental measurements; temperature, wind, radiation, and humidity measurements in biological environments. Cooperative course taught by WSU, open to UI students (Bot 436). Credit not granted for both SoilS 415 and 514.

421 Environmental Soil Chemistry 3 Prereq Chem 105, 106, SoilS 201. Soil constituents; soil solutions: mineral equilibria; absorption reactions; acid/base reactions; oxidation-reduction; soil contaminants. Credit not granted for both SoilS 421 and 521.

431 Soil Biology 3 (2-3) Prereq Micro 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 Prereq SoilS 201. Nutrient management impacts on crop productivity, soil and water quality; mineral requirements; soil testing; plant analysis; inorganic and organic fertilizers.
442 Soil Analysis for Environmental and Crop Management 3 (2-3) Prereq SoilS 421, 441, or c/l/. Analysis and amendment of soils for plant growth and toxicology.


462 Systems in Integrated Crop Management 3 (2-3) Same as Entom 462. Credit not granted for both SoilS 462 and 562.

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 1 Composting industry, including biology, methods, benefits, management, regulations, and environmental concerns.

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

501 Seminar 1 May be repeated for credit. Presentation of research information.

502 Advanced Topics in Soils 1 or 2 May be repeated for credit; cumulative maximum 4 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/l. 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 BC/EP 364; SoilS 421, 431. Biochemical and microbiological processes in soil-water environments; nutrient cycling; pesticide behavior; agricultural waste disposal; nitrogen fixation; advanced techniques. Cooperative course taught by WSU, open to UI students (SoilS 531).

537 Soil Biochemistry 3 (2-3) Prereq BC/EP 364; Micro 201; SoilS 421. Enzyme activity; microbial activity/biomass; rhizosphere; carbon, nitrogen phosphorus, sulfur, and micronutrient cycles. Cooperative course taught by UI (SoilS 557), open to WSU students.

541 Soil-Plant-Microbial Interactions 3 Prereq SoilS 421, 431, or 441. Soil-plant-microbial relationships to plant nutrition, plant health, and environmental cleanup; rhizosphere chemistry and microbial ecology. Cooperative course taught by WSU, open to UI students (SoilS 541).

547 Soil Fertility Management 3 Prereq SoilS 441. Philosophy of fertilizer recommendations based on soil and plant tissue testing; principles of fertilizer manufacture, placement and use. Cooperative course taught by UI (SoilS 547), open to WSU students.

551 Advanced Pedology 3 Prereq SoilS 451. Origin and development of soil; geochemical and biochemical weathering processes; dynamics of organic matter; soil development cycles. Cooperative course taught by WSU, open to UI students (SoilS 551).

557 Advanced Soil Genesis and Classification 3 (2-3) Prereq SoilS 451. Genesis, classification and interpretation of soils, including field investigation emphasizing existing interrelationships. Cooperative course taught by UI (SoilS 557), open to WSU students.

562 Systems in Integrated Crop Management 3 (2-3) Graduate-level counterpart of SoilS 462; additional requirements. Credit not granted for both SoilS 462 and 562.

574 Advanced Remote Sensing 3 (1-4) Prereq basic remote sensing. Digital image processing theory and the techniques applied to satellite and other remote sensing systems. Cooperative course taught jointly by WSU and UI (For 572).

575 Seminar in Remote Sensing 1 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

Department Chair, D. E. Leigh; Professors, R. E. Berney, R. D. Fort, W. Joerding, L. Krautkraemer, T. C. Lowinger, R. E. Roseman, D. F. Schafer; Associate Professors, R. Batina, C. Clark, W. S. Hallagan, F. S. Inaba, M. Niramansganga; Assistant Professors, A. Chaudhuri, T. Li, A. Michelsen, S. Perez.

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 career fields. The course of study for economics majors is sufficiently flexible to accommodate students with a variety of career interests, including business, law, government, education, public administration, and general economics. The undergraduate economics major is also excellent preparation for graduate study in many fields, such as business, law, and economics. Courses of study in economics allow sufficient time for electing courses outside the department while meeting all departmental requirements and General Education Requirements.

The department offers courses of study leading to the degrees of Bachelor of Arts in Economics, Bachelor of Arts in Business, Master of Arts in Economics, and Doctor of Philosophy.

Certification Requirements

Students who have completed at least 30 semester credits, including at least 6 credits of economics core courses, and met the university’s minimum g.p.a. requirement of 2.0 are eligible to apply for certification with the Department of Economics.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

During the freshman and sophomore years the economics major should normally begin economics courses and complete a major portion of the General Education Requirements. In the junior and senior year the economics major may choose from a variety of courses to prepare for employment or postgraduate education. Majors must complete courses in the following area:

Core: Econ 101 (or 198), 102 (or 198); 301 or 302; 311, 401, one Econ 400 elective, 490, three 300-400-level Econ electives.

Fields: 12 hours of 300-400-level Econ and/or related courses, at least 6 hours of which must be at the 400 level.

Mathematics: One of: Math 140, 171, 202, or 206.

The chair of the department and/or the dean of the college must approve in writing any portion of the 300-400-level credit which is to be satisfied by transfer, correspondence, independent study, or other credit which may not carry WSU grade points. Additional transfer, correspondence, and independent study credit (within university limits on these credits) may count toward the 120 hours required for the degree and/or satisfy requirements other than major courses.

Only general elective courses that are not GEIs, not core/major requirements, and not a course offered by the CBE may be taken pass, fail. A 2.0 cumulative economics g.p.a. is required for graduation.

An honors senior project is required for Honors students.

Options in Economics

Students majoring in economics and satisfying the core, field, and math requirements may elect, in consultation with their major advisor, either to self-design an additional 12-hour area of specialization or to choose from one of the 12-hour options below.

Economics of Financial Markets. Econ 320, 420, Fin 325, one of Econ 411, 499; Fin 421, 422, 425, 427.

108
Economics of Public Policy. Econ 340, 499; two of Econ 320, 345, 350, 361, 411, 420, 450, 455, 460, 481.

International Economic Development. Two of Econ 416, 418, 470, 472; two of Ag Ec 420, 425; Anth 418, 419; Econ 499, ES/RF 450, I Bus 380, 481, 482; Pol S 460.

Labor Economics. Econ 350, 450; two of Econ 312, 455; 499; Mgt 450, 456.


Preparation for Graduate Study. 12 hours of 300-400-level courses.

The FYDA schedule below allows students to complete any of the options within the Economics Department.

General Program Requirements

Students in the College of Business and Economics must demonstrate performance at a level expected of seniors in their major by presenting WSU graded coursework to satisfy at least 75% of the 300-400-level courses required by the major program. The chair of the department and the dean of the college must approve in writing any portion of 300-400-level credits which is to be satisfied by transfer, correspondence, independent study, or other credit which does not carry WSU grade points. Additional transfer, correspondence, and independent study credit (within university limits on these credits) may count toward the 120 hours required for the degree and/or satisfy requirements other than major courses.

ECONOMICS DEGREE PROGRAM

(120 HOURS)  ✔FYDA

Freshman Year

First Semester    Hours
Econ 101 [S] or Econ 102 [S] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Intercultural [I, G, K] (GER) 3
Tier I Science [Q] (GER) 3

Second Semester    Hours
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 3 or 4
Econ 101 [S] or 102 [S] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Math 171 [N] (GER)4 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 6
Econ Option Elective 3

300-400-level Electives 6
Complete Writing Portfolio

Second Semester    Hours
300-400-level Econ Core Electives2 3
Econ Option Elective2 3
Electives 9

Senior Year

First Semester    Hours
400-level Econ Core Elective2 3
Econ Option Elective2 3
Electives 9

Second Semester    Hours
Econ Option Elective2 3
Econ 490 [M] 3
Tier III Capstone (GER) 3
Electives 5

1 Math 171 is recommended. Acceptable alternatives are Math 140, 202, 206.
2 At least one of the Econ core or option courses must be a [M] course.

Minor in Economics

A minor in economics is often a desirable complement to majors such as business administration, engineering, education, agricultural economics, forestry, political science, and history. A minor in economics is offered to students who complete 18 hours of economics. Consult the department for an acceptable program of study.

Program in Sustainable Development

Interim Director, M. Nirmasanga

The intent of the Program in Sustainable Development is to address how economic and social systems interact with major resource and environmental issues, both internationally and domestically. This is an interdisciplinary program with participation by the departments of Architecture, Economics, Environmental Science and Regional Planning, International Business, Natural Resource Sciences, and Sociology. The program is build on the premise that as a society we have a responsibility to ourselves and to future generations to steward resources in ways that foster long-term environmental and socio-cultural health and economic viability for all peoples.

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 advisors.

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: Accctg 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: Accctg 230; MIS 150. 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, Accctg 231, and to take introductory courses in the major areas of business: B Law 210, Fin 325, Mgt 301, Dec S 340, MkEtg 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.


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


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.

195 [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.


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.


360 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, trade and growth.

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 Econ 101. Sustainable living, ecological, economical, and sociological aspects of sustainable development.

397 Topics - Study Abroad 3 Special topics in economics taught in NCSA study abroad programs.

401 Intermediate Macroeconomic Analysis 3 Prereq Econ 320; Rec Math 171 or 202. Income, employment, and inflation theory with policy implications.

402 History of Economic Thought 3 Prereq Econ 102. Development of economic thought; special focus on selected schools, including Greeks, scholastics, mercantilists, physiocrats, classicals, and neo-classicals. Cooperative course taught by UI (Econ 455), open to WSU students.

408 Mathematics for Economists 3 Same as Math 408.

410 Elements of Mathematical Economics 3 Prereq Econ 301; Math 273. Introduction to mathematical optimization in economic theory.

411 [M] Introduction to Econometrics 3 Prereq 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 [S] 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.

464 Freight Transportation Economics 3 Prereq Econ 301, 311. Analysis of market structure, conduct, and performance of the intercity freight transportation industry.

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 roles of regional integration and economic reforms in Western Europe, North America, Asia, Eastern Europe and Russia.

472 Economic Development and Underdevelopment 3 Prereq Econ 102; Rec Econ 301. Development theories, policies, and performance of Third World economies; population, land reform, foreign trade, aid, investment, debt, dependency.

475 Regional/Urban Economics 3 Prereq Econ 101, 102. Location of economic activity, transportation problems, resource and product distribution methods, urban structure and growth, and related policy issues. Cooperative course taught by UI (Econ 430), open to WSU students.

481 Economics of Environmental Issues 3 Prereq Econ 101; Rec Econ 301. Environmental interactions; efficient allocation of environmental resources; market failure and environmental degradation; economic analysis of environmental policies.

490 [M] Economics Capstone 3 Prereq senior in Econ, completion of Econ core. Integration of economic theory and field courses; assessment.

497 Economics Internship 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 Macroeconomic Analysis 3 Prereq Econ 401; 408 or one year calculus or c// in Econ 408. General equilibrium theories of aggregate output and the price level; consumption, investment and money demand functions; monetary and fiscal policy; business cycles, and rational expectations. Cooperative course taught by WSU, open to UI students (Econ 522).

501 Microeconomic Theory 3 Prereq Econ 301; 408, one year calculus, or c// in Econ 408. Static optimization; theory of the consumer and the firm; markets and resource allocation.

502 Advanced Macroeconomic Theory 3 Prereq Econ 500. Mathematical macro general equilibrium and disequilibrium.


510 Mathematical Models of Economics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 503. Exposition of the mathematical structure of economic theories.

511 Econometrics 3 Prereq Ag Ec 510, Stat 443 or 548. Econometric models; review of linear model; introduction to large sample theory; simultaneous equations modeling.

512 Advanced Econometrics 3 Prereq Econ 511. Advanced topics in econometrics.

520 Seminar in Monetary Economics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 501, 502. Analysis of money demand models, money supply models, and the role of money in a modern economy.

530 Economic History 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 411 or 511; Rec Econ 501. Changes in the American economy; introduction to the new economic history.

540 Advanced Public Finance 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 503. Positive effects of government policy, optimal tax theory; public goods; social choice theory; cost-benefit analysis.

552 Labor Theory 3 May be repeated for credit; cumulative maximum 6 hours. Developments in labor theory; wage theory and recent journal literature.

560 Seminar in Industrial Organization 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 460. Industrial organization, market conduct, and performance; appraisal of antitrust legislation.

570 International Factor Movement 3 Prereq Econ 470, 501. The basic nonmonetary theory; new theories of international trade; tariffs and commercial policy; effects of economic integration; international movements factor.

571 Monetary Aspects of International Economics 3 Prereq Econ 470, 500. Balance-of-payments; adjustment to payments imbalance; the foreign exchange market; open economy macroeconomic models and macroeconomic policy coordination; international monetary institutions.
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. 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.

Doctoral students will be considered for candidacy after they successfully complete the majority of their course work and pass a written comprehensive examination.

A thesis is required in each of the doctoral programs. There is a requirement of teaching or related experience for the Doctor of Education. A student pursuing a program leading to the Doctor of Philosophy degree is required to fulfill a research competency requirement, since the pursuit of research is emphasized in the program of study for the PhD.

The Master's Degree in the Master of Education degree program requires at least 35 semester hours of approved graduate credit. Although a thesis is not required, candidates for the degree are required to write a six-hour comprehensive examination.

The Master of Arts in Education degree program (minimum of 30 semester hours) is recommended for students who plan to continue work toward the doctoral level. A thesis is required for the degree, and the program and thesis topic are designed to advance the career goals and professional aspirations of the candidate.

Admission to Graduate Study

(Counseling and Educational Psychology)

Individuals applying for admission to the graduate programs offered in educational administration and counseling psychology are required to complete the following: application to the Graduate School; application for certification; one letter of recommendation; and notification of the faculty's action is provided to the applicant. All applications must be submitted to the chair of the department by February 1 for admission the following summer or fall semester.

Applications for admission to a graduate program are reviewed by faculty on an individual basis, and notification of the faculty’s action is provided in writing by the chair of the department.

Certification (Educational Administration)

A certification program for the initial and continuing certification 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. Admissions will be considered after transcripts have been received from the institution which granted the bachelor's degree.

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; and 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 coursework is also available leading to the BS degree in counseling psychology.

Bachelor of Arts in Sport Management

The Department of Educational Leadership and Counseling Psychology offers a major in sport man-
agement 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 to choose 9 credits sport management. General Education Requirements must be completed by all students enrolled in the university. Sport management majors are required to complete Engl 101 and ComSt 102. Majors are encouraged to enroll in introductory courses in sociology and psychology. Transfer students are encouraged to complete the AA degree and to contact the department for additional information on courses that may apply to the major and/or the area of specialization.

### Undergraduate Minors

The Department of Educational Leadership and Counseling Psychology offers undergraduate minors in Leadership Studies and Sport Management. Courses for minor may not be taken pass, fail. Students interested in declaring a minor in leadership studies or sport management should contact the Department of Educational Leadership and Counseling Psychology.

### 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. Students must complete 9 credits from: CAC 495, Mgt 401, Pol S 456, ComSt 434, W St 315. For more detailed information, contact www.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; 477 or 489, and 4 credits from SpMgt 365, 394, 496, 497.

### Record of Distinction

The Department of Educational Leadership and Counseling Psychology sponsors and hosts a number of state, national and international programs including the A. A. Cleveland Conference, High School Equivalency Program and the Center for Academic Leadership. The Assessment and Evaluation Center serves school districts and state agencies by providing high-quality assessment and evaluation services through grant and contract agreements. The center also provides funding opportunities for graduate students interested in assessment and evaluation. Superintendent certification course work is also offered throughout the state at branch campuses in Spokane, Tri-Cities, Vancouver, and internationally in the Far East, as well as on the Pullman campus. Counseling certification is offered at the Tri-Cities branch campus.

The College of Education has excellent facilities for graduate study and research. Modern facilities in Cleveland Hall include a comprehensive George B. Brain Education Library, Mark W. Brands Computer Lab and research studies in the Attentional Processes Laboratory. Extensive use also is made of the university Computing Service Center and the university Instructional Support Services.

### Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

#### SPORT MANAGEMENT DEGREE PROGRAM (120 HOURS)

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<tr>
<th>First Semester</th>
<th>Hours</th>
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<td>Freshman Year</td>
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<td>Freshmen Year</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<td>Tier I Science [Q] (GER)</td>
<td>3</td>
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<td>Second Semester</td>
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<tr>
<td>Biological Science [B] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
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<tr>
<td>Mathematics Proficiency [N] (GER)</td>
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<tr>
<td>SpMgt 276</td>
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<td>Sophomore Year</td>
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<td>Area of Specialization</td>
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<td>ComSt 102 [C] (GER)</td>
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<td>SpMgt 290 or additional GER [H,G,S,K]</td>
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<tr>
<td>SpMgt 394</td>
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<td>Junior Year</td>
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<td>First Semester</td>
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<td>HEd 363</td>
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<td>Second Semester</td>
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### Senior Year

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<th>Hours</th>
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<tr>
<td>SpMgt 488</td>
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<tr>
<td>SpMgt 489</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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<td>Elective</td>
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<td>Second Semester</td>
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<tr>
<td>SpMgt 491</td>
<td>10-12</td>
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</table>

### Description of Courses

#### Counseling Psychology

**CoPsy 474 Introduction to Counseling Techniques**
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.

**CoPsy 478 Career Services and Programs for Persons with Disabilities**
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.

**CoPsy 490 Instructional Practicum**
V1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 8 hours. S, F grading.

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

### 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.

### Theories, Research, and Techniques in Counseling Psychology

1-3 or 4 Philosophical assumptions, theory of personality, counseling process, techniques and relevant research in the major theories of counseling and personality.

### Career Development

3 or 4 Theories, concepts, methods and findings in career development; vocational assessment and prediction, career counseling intervention outcomes.

### Ethics and Professional Problems in Counseling Psychology

4 Professional problems; ethical, legal, and training issues, practices, and new issues.

### Theoretical Foundations of Group Counseling

3 Prereq CoPsy 512 or c/l. History, philosophy and theoretical foundations; the group counselor, members, and issues in group counseling.

### 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 nonetest 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 techniques in a school setting. S, F grading.

537 Professional Development in Counseling Psychology 3 NBCC requirements; growth and development, social and cultural foundations, the helping relationship, group dynamics, career, appraisal and research.

541 Clinical and Experimental Hypnosis Seminar 4 Prereq PhD student in counseling, educational, experimental, or clinical psychology. Clinical and experimental hypnosis, emphasizing applied research and clinical methods.

542 Cross-cultural Research in Counseling and Assessment 4 Cross-cultural research methods, concepts, and findings in counseling and assessment.

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.

555 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.

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 Problems, Directed Study, and/or Examination Variable credit. S, F grading.

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

Educational Administration

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.

497 Peer Leadership V 1-4 development of leadership and interpersonal skills for specific peer leadership and paraprofessional positions. S, F grading.

498 Undergraduate Leadership Practicum V 1-4 Prereq Ed Ad 389 or c//. Weekly seminar; development of and reporting on significant project associated with a leadership position held by the student. S, F grading.

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

501 Philosophy of Education 3 Development of American educational philosophy.

503 Values and Ethics for Educational Leaders 3 Study of ethical theories, the moral dilemmas of public schooling, and the skills of ethical reasoning; professional code of ethics.

506 Social Context of Education 2 The interpretation of social context issues including historical, legal and cultural factors as these influence policies and practice in education.

507 Social Foundations of Education 3 Educational adaptations to the economic and social trends and forces.

510 Improvement of Instruction 3 Theoretical models and strategies of teaching in classrooms; relationships between specific models and curriculum priorities.

514 Professional Teaching 2 Theoretical models and strategies of teaching in classrooms; relationships between specific models and curriculum priorities.

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 For directors, supervisors, specialized personnel, principals, and superintendents with responsibility for in-service programs; practices and procedures in in-service education.

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 2 (1-3) Rec secondary education with expertise in science, technology and/or math. 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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535 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Topical issues in education responding to shifting demands and skills needed by parents, teachers, school administrators and community leaders.

536 Introduction to Qualitative Research in Education 3 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 report writing.

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 Student 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 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.

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 financial management of sport programs.

577 The Law in Physical Education, Sport, and Athletics 3 Legal aspects of coaching, teaching, and administering sport, physical education, and athletic programs.

578 Higher Education Law and Ethics 3 Legal and ethical aspects of higher education with special reference to administrators, faculty, and students in higher education institutions.

579 Administration of Higher Education 3 Organization, administration and leadership of universities, colleges, and community colleges.

580 School Organization and Administration 3 Rec teaching experience. Readings and discussions on the theories and practices of school organization and administration. Cooperative course taught jointly by WSU and UI (EdAd 509).

582 Policy Formation and Analysis in Education 3 Political and organizational policy formation processes in educational organizations; policy analysis in education.

583 Community and Communications 3 Social, political, and economic relationships between education and the community; methods of public polling and campaign strategy techniques.

584 Human Resource Management 3 Human relations in education; problems involved and practical solutions considered.

585 Financial Management in Education 3 Economics and financing of education; financial planning, budget development, investment analysis, bonding, cost effectiveness; current trends in educational finance. Cooperative course taught jointly by WSU and UI (EdAd 535).

586 Management of Facility Planning 3 Principles and procedures in the development of educational specifications, conducting needs assessment, forecasting; selecting an architect.

587 Effective Communication Skills for Education Leaders V 1-6 May be repeated for credit; cumulative maximum 6 hours. Interdisciplinary seminars; related studies; discussions in several areas by specialists.

588 The Law and Education 3 Fundamental legal principles within which public education functions; applicable school codes of Washington and other states; review important court cases.

589 Leadership Development Seminar 3 Improving knowledge and skills in strategic planning, decision making, leadership issues, conflict, motivation, staff development, productivity, and stress.

590 Internship 3 or 6 May be repeated for credit; cumulative maximum 12 hours. By interview only. Internship in professional positions. S, F grading.

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.

568 Research Methods II 3 Prereq EdPsy 505, 565. Integration and application of research skills in writing proposals, dissertations, papers for publication; interpreting, criticizing, 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 nor 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/l. 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.


477 Sport Law 3 Legal aspects of coaching, teaching, and administering sport programs.

488 Current Trends in Sport Management 2 Prereq SpMgt 276; 468 or c/l. Current trends and issues; professional development, internship and employment procedures.

491 Theory and Application 3 Prereq SpMgt 367; senior standing. Investigation and application of the components of the sport management profession.

490 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

491 Internship V 10-12 Prereq SpMgt 489; major or minor with 15 hours completed in sport management course work. By interview only. Supervised practicum in agency or business. S, F grading.

496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Special topics in exercise and sports studies. S, F grading.

497 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Special topics in sports studies. S, F grading.

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

School of Electrical Engineering and Computer Science

Distinguished Professor in Power Engineering and Director, A. Bose; Professor and Associate Director, G. Hower; Associate Professor and Associate Director S. Broschat; Distinguished Professor in Electromagnetics, R. Olsen; Professors, D. Benson, S. Elgar, T. Fischer, A. Flechsig, C. Hsu, M. Manwaring, L. Philipp, J. Ringo, A. Saberi, R. Tinker, K. Wang; Associate Professors, T. Fiez, J. Hart, S. Hudson, B. Krameche, D. Lynch, J. Meador, K. Mayaram, M. Morse, Z. Obradovic, M. Osman, P. Pedrow, J. Schneider, K. Tomovic, V. Venkatashramamuni; Assistant Professors, U. Axen, B. Belzer, J. Hale, D. Hung, H. Karpugya, S. Kwek, R. Lewis, C. Liu, K. Sivakumar, K. Sivalingam; Adjunct Associate Professor, K. Singh; Assistant Adjunct Professor, N. Corrigan; Professors Emeriti, C. Mosher; Visiting Associate Professor, J. Shovic; Visiting Assistant Professor, M. Pattichis; Lecturers, G. Allen, W. Cocharan, C. Cole, J. Fallon, J. Hagemeister, M. Kibler, M. Rouds, T. Tan, M. Vaziri, B. Walton, R. Warnick, C. Wells, J. Yeidel.

The School of Electrical Engineering and Computer Science offers courses of study leading to the degrees of Bachelor of Science in Electrical Engineering (BSEE), Computer Science (BSCS), or Computer Engineering (BSCpe), and Master of Science in Electrical Engineering (MSEE) or Computer Science (MSCS), and Doctor of Philosophy. The program leading to the BSEE is accredited by the Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology (EAC of ABET), while the program leading to the BSCS is accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board (CSAC of CSAB).

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 areas of general interest to all electrical engineers.

Computer Engineering

Computer engineering is a multidisciplinary program. It is a field which includes engineering science and design courses to provide a balanced view of digital hardware, software, application trade-offs, and basic modeling techniques used to represent the computing process. It draws on basic courses from both electrical engineering and computer science. Therefore, the first part of the curriculum is very similar to these other two degree programs. The curriculum has been carefully designed to allow the student to enter any one of the three degree programs and to switch to another at a point before certification without serious consequences. Some credits can be transferred from community colleges with minimal difficulty. Like all engineering fields, computer engineering utilizes basic courses in mathematics, science, and related disciplines.

School of Electrical Engineering and Computer Science

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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 multitude of 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 microtechnology, systems 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 the 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 select an area of specialty. Special programs may be designed for students planning to continue on to advanced study in law, medicine, or business administration, and for those who wish to pursue undergraduate study in more than one field.

Computer Science

The computer continues to have a dramatic effect on many aspects of contemporary society, and the demand for people who are trained to use computers and software systems will increase for the foreseeable future. Computer science is a discipline that provides a scientific foundation for a variety of practical skills, including computer system design, software system design, information processing, programming, and the use of specialized computer applications. An important specialty for this school and for computer scientists in general is software engineering, which deals with the issues of designing, constructing, testing, debugging, documenting, and maintaining large, complex, and/or mission-critical software systems used in medical, scientific, and business applications (for example).

The curriculum in computer science prepares students for a variety of careers that involve the extensive use of computers. All graduates will have a solid technical background in mathematics and sciences. Courses in the discipline include structured programming, systems programming, data structures, software engineering, computer architecture, operating systems concepts, programming language concepts, and theoretical computer science. An option area course sequence allows students to specialize in areas such as software engineering, computer graphics, scientific computing, or artificial intelligence.

Computer Engineering

Computer engineering is a multidisciplinary program. It is a field which includes engineering science and design courses to provide a balanced view of digital hardware, software, application trade-offs, and basic modeling techniques used to represent the computing process. It draws on basic courses from both electrical engineering and computer science. Therefore, the first part of the curriculum is very similar to these other two degree programs. The curriculum has been carefully designed to allow the student to enter any one of the three degree programs and to switch to another at a point before certification without serious consequences. Some credits can be transferred from community colleges with minimal difficulty. Like all engineering fields, computer engineering utilizes basic courses in mathematics, science, and related disciplines.
science, and other engineering disciplines to build a knowledge foundation and to develop breadth.

Core course sequences are completed in the junior year, allowing the senior year to include various electives. Some students will have a strong interest in digital system hardware design and will pursue courses that require some depth in electrical circuits along with expertise in logic components and systems. Another path emphasizes the software aspects of digital systems where programmability and the human/computer interface are designed. A senior design project course is required in one of the three areas: (1) Digital hardware and VLSI design, (2) Microprocessor and embedded systems, or (3) Software engineering.

Certification

Students may apply for certification into any of the three programs of study after completion of 30 semester hours to include Bio S 102 or Chem 105; Cpt S 150 or 251; Math 171, 172; Phys 201, 202. Applications for certification are accepted prior to November 15 and to March 15 for certification effective the following spring and fall, respectively. Eligible students will be ranked in accordance with several criteria including WSU and transfer g.p.a. and g.p.a. in mathematics, science and in electrical engineering or computer science courses. Final acceptance will be made after current semester grades are available, and students will be notified of the decision as soon as possible.

Honors Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

No courses listed in the chosen schedule of studies may be taken on a pass, fail basis.

ELECTRICAL ENGINEERING DEGREE PROGRAM (128 HOURS) ✔FYDA

Freshman Year

First Semester
Chem 105 P (GER) 4
E 116 2
Math 171 [N] (GER) 4

Second Semester
Cpt S 150 2
GenEd 110 or 111 [A] (GER) 3
Math 171 [N] (GER) 4

Sophomore Year

First Semester
Biological Science [B] (GER) 3
C E 213 4
E 214 3
Math 273 2
Phys 202 [P] (GER) 4

Second Semester
C E 214 2
E 261 3
E 262 1
E 314 3
Economics [S] (GER) 3
Math 315 3

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] (GER) 3
MSE 302 3

Senior Year

First Semester
E E 485 2
E E 489 3
Intercultural Studies [I,G,K] (GER) 3
Stat 443 3
Technical Electives 3 6

Second Semester
E E 416 3
E E 301 3
Technical Electives 3 6
Tier III Capstone [H,G,S,K] (GER) 3

Tier III Capstone {H,G,S,K] (GER) 3

Tier I Technical Electives must all be 300-400-level courses. The capstone design requirement is satisfied by the two-semester sequence, E E 485, E 416. Technical electives must be selected with an advisor’s approval.

COMPUTER SCIENCE DEGREE PROGRAM (126 HOURS) ✔FYDA

Freshman Year

First Semester
Chem 105 P (GER) 4
Cpt S 150 4
GenEd 110 [A] (GER) 3
Engl 101 [W] (GER) 3
Math 171 [N] (GER) 4

Second Semester
Cpt S 250 4
Econ 101 [S] or 102 [S] (GER) 3
GenEd 111 [A] (GER) 3
Math 172 4
Math 220 2

Sophomore Year

First Semester
Cpt S 350 3
E E 214 3
GenEd 110 or 111 [A] (GER) 3
Math 220 2

Second Semester
E E 261 3
E E 262 1
E E 314 3
Engr Sci Elec I 3
GenEd 110 or 111 [A] (GER) 3
Math 315 3

Second Semester
Biological Sciences [B] (GER) 4
Cpt S 350 3
Cpt S 380 1
Math 315 3
Phys 202 [P] (GER) 4

Junior Year

First Semester
Cpt S 360 [M] 4
Cpt S Option Course 3
E E 261 3
Computer Science Option Areas

The computer science degree program includes an elective group of 15 credits (minimum) called an option area. Courses in the option area can reflect a technical emphasis (e.g., computer graphics or mathematics), a business emphasis (management information systems), or may be chosen for technical breadth in consultation with an academic 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. Option areas chosen from the list below will be approved.

Artificial Intelligence: Anth 450 or Psych 490; Cpt S 440, 441, 451; Phil 335 or Psych 384; Psych 105.

Communications: Cpt S 425, 445, or 455; E E 321, 341, 451, 464.

Computer Engineering: Cpt S 445, 455, or 461 E E 321, 324, 341, 424.


Management Information Systems: Cpt S 241, 370, 423; Cpt S 425 or MIS 271; Mgt 301, 350.


Robotics and Control: Cpt S 445 or 461; E E 321, 441, 442, 489.

Scientific Computation: Cpt S 423 or 443; 442; Math 340 or 440: 364, 464.


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 17 credits which must include Cpt S 150, 250, and three 300-400-level Cpt S courses excluding Cpt S 405. 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.

Software Engineering: The minor in software engineering consists of 17 credits. The following courses are required: Cpt S 150, 250, 350, 422, and 423.

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

110 Introduction to Electrical Engineering
Introduction to basic electrical engineering concepts; the electrical engineering profession.
120 Innovation in Design
Same as M E 120.
214 Design of Logic Circuits
3 (2-3) Prereq Math 172 or c//. Functional approach to design of electronic logic circuits; exposure to elementary circuit concepts and design with integrated circuits.
261 Electrical Circuits I
3 Prereq Math 315 or c//; Phys 202 or c// in E E 262. Application of fundamental concepts of electrical science in linear circuit analysis; mathematical models of electric components and circuits.
262 Electrical Circuits Laboratory I
1 (0-3) Prereq E E 261 or c//. Electrical instruments; laboratory applications of electric laws; transient and steady-state responses of electrical circuits.
304 Introduction to Electrical Circuits
305 Introduction to Microprocessors
2 Prereq Cpt S 150, 203, or 251. Digital components, circuits, and number representation; microprocessor organization, instruction sets, and system design.
311 Electronics
3 Prereq E E 214, 261 with grade of C or better; major or minor in E E. Fundamental device characteristics including diodes, MOSFETs and bipolar transistors; small- and large-signal characteristics and design of linear circuits.
312 Electronic Devices and Circuits Laboratory I
1 (0-3) Prereq c// in E E 311. Experiments in electrical circuits, measurements and electronics; principles of measurements and measuring instruments.
314 Microprocessor Systems
3 (2-3) Prereq Cpt S 150 or 251, E E 214. Microprocessor system architecture, instruction sets, and interfacing; assembly language programming.

321 Electrical Circuits II
3 Prereq E E 261 with grade of C or better; major or minor in E E. Graphs, loop and cut-set analysis, state space analysis, Laplace transforms, network functions, frequency response, two-ports, energy and passivity.

322 Electrical Engineering Laboratory I
1 (0-3) Prereq c// in E E 321. Experiments in electrical circuits, measurements, and electronics, principles of measurements and measuring instruments.

324 Fundamentals of Digital Systems
4 (3-3) Prereq E E 261, 314. Design and analysis of synchronous sequential machines; module and bitwise devices; alternative architectures; system-level design; asynchronous sequential machines.

331 Electromagnetic Fields and Waves
3 Prereq Math 315; Phys 202; major or minor in E 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, wave-guides, antennas, fiber optics.

352 E E Laboratory I
3 (1-6) Prereq Cpt S 150, 203, or 251; E E 311, 321, or 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
1 (0-3) to 2 (0-6) Prereq c// in E E 361, c// in E E 341, c// in Engl 402 or 403. Experiments in simulation, modeling, transformers, rotating machines, and transmission lines.

380 Preparation for Professional Practice
1 Prereq junior standing in Cpt S or E E. Resume writing, investigation of job and internship opportunities; curriculum integration; professional ethics; continuity of design experience. S. F. grading.

416 [M] Electrical Engineering Design
3 (1-6) Prereq E E 485; Engl 402 or 403. Electrical engineering design of several specific open-ended projects including design specifications, codes, costs, EIS; written and oral presentations and reports.

417 Numerical Solutions to EM Problems
3 Prereq E E 351. Numerical solutions to EM problems including the moment method; finite element method; finite difference method, numerical integration, and matrix operations. Cooperative course taught by WSU, open to UI students (E E 483). Credit not granted for both E E 417 and 517.

420 Capstone Engineering Design
3 (1-6) Same as M E 420.

424 Digital System Architecture
4 (3-3) Prereq E E 314, 324. Modern developments in digital system design, parallel structures, pipelining, input/output, high speed circuits, laboratory experience in digital system design; emphasis on CPU architecture.
426 Introduction to Electromagnetic Compatibility 3 Prereq E E 341, 351. Electromagnetic compatibility requirements and principles, noneideal component behavior, conducted and radiated emissions and susceptibility, crosstalk, shielding, system design. Credit not granted for both E E 426 and 526.

431 UHF and Microwave Circuits 3 or 4 (3–3) Prereq E E 351. Lines and waveguides in passive and active circuits; microstrip filter and amplifier design.

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 VLSI Systems 3 or 4 (3-3) Prereq E E 314, 324, 466 or c/. System, circuits, and physical level design of very large scale integrated circuits using CAD software; project specification, documentation, and reporting.

441 Digital Control Systems 3 Prereq E E 341, 489. Linear difference equation, Z-transform, discrete and analog circuits, D/A and A/D conversion, sampled data system analysis, frequency domain design, state space design, quantization effects.

442 Robotics 3 Prereq E E 489 or M E 481 or c/. Robots, kinematics, inverse kinematics, Jacobians, dynamics, sensors, actuators, position control, force control, hybrid control, trajectory generation.


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 Pulse and Digital Circuits 3 (2-3) Prereq E E 311, 314. Electronic theory and practice used in design of digital computers and other high-speed digital systems.

472 Power Systems Laboratory II 2 (0-6) May be repeated for credit; cumulative maximum 4 hours. Prereq E E 362; c/ in E E 486, 491, or 493. Experiments and design projects related to E E 486, 491 and/or 493.

475 Electrical Measurements and Transducers 3 (1-6) Prereq E E 352. Principles of electrical measurements and techniques with individual transducer design, development, and test problem; formal report.

476 Analog Integrated Circuits 3 Prereq E E 311; 351 or c/. 489 or c/; c/ in 477 for capstone design project. 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/ in E E 476. Laboratory applications of E E 476 including the computer-aided design of analog integrated circuits; emphasis on design documentation and reporting.

478 Microelectronic Fabrication 3 Prereq E E 311. Semiconductors, photolithography, dry and wet oxidation, diffusion, thin film deposition, clean rooms, fabrication and testing of diodes and MOS capacitors. Credit not granted for both E E 478 and 578.

480 Electrical Engineering Design Precepts 1 Prereq senior in E E. Electrical engineering design and its extensive aspects as well as formative social and ethical relationships. S, F grading.

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.

485 Design Project Management 2 Prereq senior standing. Project scheduling/planning, technical writing, oral presentation skills, working in teams, TQC, TQM, market-driven organizations.

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 525).

489 Introduction to Control Systems 3 Prereq E E 321. State variable models, system response, stability analysis, root locus analysis and design; frequency-response and state-space analysis and design.

491 Performance of Power Systems 3 Prereq E E 361, 362. Static and dynamic behavior of power systems, powerflow, and economic considerations.

493 Protection of Power Systems I 3 Prereq E E 361. Analysis and equipment fundamentals of power system protection; symmetrical components, fault calculations; fuses; and relays including burden calculations.

494 Protective Relay Labs 2 (0-6) Prereq E E 493 or c/. Experiments and measurements of protective relay equipment under test, simulated fault and fault conditions.

495 Internship in Electrical Industry V 2-4 May be repeated for credit; cumulative maximum 8 hours. Prereq E E 341 or 361. For juniors and seniors in E E. Students work full time on engineering assignments in approved industries. S, F grading.

496 Introduction to Semiconductor Device Theory 3 Prereq E E 311 or MSE 302. Equilibrium statistics of electrons and holes; carrier dynamics; p-n junctions, metal-semiconductor junctions, BJTs, MOSFETs, LEDs.

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

501 Linear System Theory 3 Prereq E E 489. Dynamic systems from the state variable approach; observability, controllability, stability, and sensitivity of differential and nondifferential systems. Cooperative course taught jointly by WSU and UI (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. Cooperative course taught by WSU, open to UI students (E E 534).


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).


511 Protection of Power Systems II 3 Prereq E E 491 or c/. Protection of electrical equipment as related to electric power systems with emphasis on digital algorithms. Cooperative course taught jointly by WSU and UI (EE 526).

512 Active Network Synthesis 3 Prereq E E 341. Devices and classical network synthesis, two-port network theory, filters, active filters.

514 Optoelectronics Lab I V 1 (0-3) to 3 (0-9) S, F grading.

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 Same as Phys 517. Numerical methods, bifurcations and complex behaviors.

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. Cooperative course taught by WSU, open to UI (EE 531).

520 Plasma Engineering 3 Prereq E E 351 or Phys 342. Electromagnetics, kinetic theory, and fluid mechanics of plasmas in space, arcs, plasma processing, coronas, and fusion reactors.

521 Analysis of Power Systems 3 Prereq E E 491. Concepts and practices of modern power engineering, including steady-state and dynamic analysis, economics and control design.

522 High Voltage Engineering 3 Prereq E E 331. High voltage-high power phenomena; design and measurements associated with electrical transmission, current interruption, insulation, transformation, lightning, and corona.
Computer Science Courses

Cpt S

120 Innovation in Design 2 Same as M E 120.
150 Program Design and Development 4 (3-3) Prereq Math 107. Formulation of problems and top-down design of programs in a modern structured language for their solution on a digital computer.

250 Data Structures 4 (3-3) Prereq Cpt S 150. Advanced programming techniques: object-oriented programming, data structures and program design principles.

317 Automata and Formal Languages 3 Prereq Math 216. Finite automata, regular sets, pushdown automata, context-free language, Turing machines and the halting problem.

330 Numerical Computing 3 Prereq Cpt S 150, 203, or 251; C// in Math 315. Power and limitation of numerical solutions; design, analysis and implementation of numerical algorithms; visualization and rendering.

350 Software Design 3 Prereq Cpt S 250, Math 216. Software design techniques; data-flow oriented design, object-oriented and data-oriented design; testing and maintenance of software.

355 Programming Language Design 3 Prereq Cpt S 350; Math 216. Design concepts of high-level programming languages; survey of existing languages, experience using some languages.

360 [M] Systems Programming 4 (3-3) Prereq Cpt S 250; 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 3 Prereq Cpt S 350. Introduction to large-scale software development; requirement analysis, estimation, design, verification techniques.

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.

426 Mobile Computing 3 Prereq Cpt S 355. Hand-held portable computing software development; object-oriented, dynamic programming; persistent object stores, wireless communication.

427 Computer Security 3 Prereq Cpt S 360. 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.

434 Neural Network Design and Application 3 Prereq Cpt S 340; Math 360. By permission of the instructor. Skills: hands-on experience with neural network modeling of nonlinear phenomena; application to classification, forecasting, identification and control. Credit not granted for both Cpt S 434 and 534.

440 Introduction to Artificial Intelligence 3 Prereq Cpt S 355. 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 350; Math 220. Raster operations; transformations and viewing; geometric modeling; visibility and shading; color. Cooperative course taught by WSU, open to UI students (CS 404). Credit not granted for both Cpt S 442 and 542.

443 Computer-Human Interaction 3 Prereq Cpt S 350. Topics in computer-human interaction; screen based paradigms and Fitt’s law; audio and haptic interfaces, virtual reality.

445 Digital Image Processing 3 Prereq Cpt S 250 or 251; Math 220, 273. Digitization, coding enhancement, restoration, reconstruction, segmentation, and description of digital images. Cooperative course taught by WSU, open to UI students (CS 404).

446 Animation Programming 3 (1-4) Prereq Cpt S or E E major; Cpt S 250. Introduction to computer animation production, animation programming techniques, simulation, and dynamic visualization.

450 Design and Analysis of Algorithms 3 Prereq Cpt S 250, 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 350, Math 216. Introduction to database concepts, data models, database languages, database design, implementation issues.


453 Graph Theory 3 Same as Math 453. Credit not granted for both Cpt S 453 and 553.

455 Introduction to Computer Networks 3 Prereq Cpt S 350. 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.

461 Embedded Systems 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).

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).

470 Virtual Organization 3 Prereq Cpt S 350 or MIS 350. Utilization of new technologies—hypermedia, groupware, and computer networks—by individuals, groups and organizations.


483 Topics in Computer Science V 1-4 May be repeated for credit. Prereq Cpt S 350. Current topics in computer science or software engineering.

490 Work Study Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq Cpt S 150, 153, or 241; 250; E E 314; Cpt S major. By permission only. Experience in programming and systems analysis in a working environment under supervision of industrial or governmental professionals and faculty. S, F grading.

495 Consulting in Computer Programming 1 May be repeated for credit; cumulative maximum 2 hours. Prereq Cpt S 150, 153 or 241; 250; E E 314; Cpt S major. Consulting for students in Cpt S 105, 150, 153, 241, 250, and E E 314. S, F grading.

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

500 Preprofessional 1 Faculty research interests, departmental computer systems, computer science research, report preparation. S, F grading.

511 Computational Structures 3 Prereq Cpt S 317 or Math 421; graduate standing. Categories as theories; formal approaches to specifications and homomorphisms of computational structures.

516 Algorithms 3 Prereq Cpt S 450. Discrete structures, automata, formal languages, recursive functions, algorithms, and computability.

518 Programming Language Theory 3 Prereq Cpt S 516 or Math 421. Syntax; operational and denotational semantics. Cooperative course taught by WSU, open to UI students (CS 510).

519 Introduction to Computational Geometry 3 Prereq Cpt S 450, graduate standing. Introduction to computational geometry; data structures and algorithms, with motivating applications.

521 Software Engineering Analysis 3 Prereq Cpt S 350. 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 four measurement domains; examples of software measurement and the applications of these measurements; using these techniques as the basis for the design of software engineering experiments; application of the scientific method in evaluation of programming methods and models; extension of the measurement concepts into the area of statistical modeling. Cooperative course taught by UI (CS 583), open to WSU students.

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.
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. While MBA programs encompass the entire business spectrum, 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, 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.

Visit the Engineering Management Program at www.ce.wsu.edu/engrmgmt.

Program Requirements

The master’s program with a nonthesis option consists of 32 credit hours including a minimum of 30 credit hours of approved graded course work and a minimum of 2 credit hours of Master’s Special Problems. The program of studies leads to a Master of Engineering Management degree. An overview of the engineering management curriculum can be summarized as follows:

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Hours</th>
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<tbody>
<tr>
<td>E M 501</td>
<td>3</td>
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<td>E M 505</td>
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<td>E M 540</td>
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<td>E M 564</td>
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<td>E M 591</td>
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<td>E M 702</td>
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Stat 430 3

Pre-Approved Elective Courses

Students need to have four three-semester credit hour electives to total 12 hours of electives: E M 517, 526, 530, 545, 560, 565, 570, 575, 580, 585, 590, 595, 596.

Admission Requirements

Students who apply to the Master of Engineering Management degree program will have earned a Bachelor of Science in Engineering from an accredited program with a minimum g.p.a. of 3.0. Working engineers with undergraduate degrees in other fields, particularly mathematics, physics, or other physical sciences, may be accepted for this program; requirements for additional undergraduate work in engineering (nonengineering majors) are evaluated on an individual basis. Prospective students must score above 500 on the Graduate Management Admission Test (GMAT), provide three letters of recommendation, a resume showing significant engineering experience, and a brief personal statement outlining the appropriateness of the program in light of career goals and work history.

For information on the certificate program, please contact the Pullman office, (509) 335-0125.

Description of Courses

Engineering Management

E M 460 Manufacturing and Operations Design and Strategy 3 Prereq junior standing. Concepts and techniques for design and managing manufacturing and service, operations intended to develop a world class organization.

E M 480 Quality Control and Reliability Design 3 Prereq junior standing. Quality analysis including process modeling, product quality, statistical process control, process capability studies and reliability prediction models.

E M 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.

E M 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.

E M 501 Management of Organizations 3 Same as Mgt 501.


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 3 Prereq Cpt S 440. Intelligent computer programs; simulation of cognitive processes.

542 Computer Graphics 3 Prereq graduate standing. Graduate-level counterpart of Cpt S 442; additional requirements. Credit not granted for both Cpt S 442 and 542.

543 Multimedia Systems 3 Prereq Cpt S 455, 460. Survey of recent advances in multimedia systems: applications, authoring tools, information retrieval, network and operating system support, and data management.

544 Numerical Computation 3 Prereq Cpt S 315, Stat 443. Parallel processing inspired by natural neural systems; neural computer architecture, supervised and unsupervised learning, generalization, implementation, and application; neurophysiology basis.

545 Computer Vision 3 Prereq Cpt S 350. 2-D and 3-D image acquisition, imaging geometry, segmentation, feature extraction, object representation, and recognition, texture, active vision.

546 Computer Animation II 3 May be repeated for credit; cumulative maximum 9 hours. Same as Arch 546.

547 Statistical Pattern Recognition 3 Prereq Stat 444. Supervised and unsupervised classification of multivariate data feature selection, extraction and display; application to computational and natural sciences.

548 Advanced Computer Graphics 3 Prereq Cpt S 442. Solid modeling, visual realism, light and color models, advanced surface generation techniques.


550 Parallel Computation 3 Prereq Cpt S 450. Parallel machine models, principles for the design of parallel algorithms, interconnection networks, systolic arrays, computational aspects to VLSI.


553 Graph Theory 3 Prereq graduate standing. Graduate-level counterpart of Cpt S 453; additional requirements. Credit not granted for both Cpt S 453 and 553.

554 Distributed Systems 3 Prereq Cpt S 460. Distributed software models, distributed protocols and algorithms, distributed file systems, multi-site concurrency control, replication, error recovery.

556 Fault Tolerant Computer Systems 3 Prereq Cpt S 460, or E E 424 and elementary probability theory. Fault tolerance aspects involved in design and evaluation of systems; methods of detection and recovery; modeling, correcting codes and reconfiguration.

557 Advanced Computer Networks 3 Prereq graduate standing. Graduate-level counterpart of Cpt S 442; additional requirements. Credit not granted for both Cpt S 442 and 542.

558 Parallel Processing: Systems and Applications 3 Prereq E E 524. Parallel processing, partitioning, allocation and mapping, array processors, hypercubes, parallel routing algorithms, parallel memory access, examples of parallel machines.

559 Computer Science Seminar I May be repeated for credit; cumulative maximum 3 hours.

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

701 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.
517 Strategic Management of Engineering Systems 3 Rec Stat 430; experience with computer programming. Analyzing and developing representative models for complex systems such as project or operations management using a variety of simulation styles.

526 Constraints Management 3 Factors that block improvement in any system; effective break-through solutions; continual systems improvements for manufacturing, administration, projects.

530 Applications of Constraints Management 3 Prereq graduate standing. Understanding and applying proved solutions developed by the Theory of Constraints in areas of production, project management, finance, and distribution.

540 Operations Research for Managers 3 Rec Math 273. Applying linear, integer, goal programming; network optimization; queuing analysis; dynamic programming; simulation; Markov analysis; and forecasting to engineering management decisions.

545 Decision Analysis for Engineering 3 Structured discipline for describing, analyzing, and finalizing decisions involving uncertainty.

550 Manufacturing and Operation Design and Strategy 3 World-class concepts, tools and techniques for designing and operating manufacturing and service operations; layout, capacity planning, inventory management scheduling.

564 Project Management 3 Rec basic statistics course. Planning, organizing, scheduling and controlling major projects; human dimensions, PERT and CPM scheduling models, resource allocation, and cost controls.

565 Systems Engineering Management 3 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 0 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

[Further text related to the Department of English]

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements. As part of their graduation requirements in the College of Liberal Arts, all majors are required to take either Hum 101 or 103, or Hum 198 in Honors.

Five programs are offered for the English major, all leading to the degree of Bachelor of Arts in English. Option I is for students who desire a general liberal arts education emphasizing literature, critical thinking and writing; it is often selected by students with double majors or minors in other departments. Option 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 and the Law School Admission Council. Option V is for English majors planning for a career in business; it emphasizes analytical and communication skills, a broad liberal arts background, and a core of business, economics, and computer science courses required for most business careers.

All options in the major share the requirements of the general degree below. In summary these consist of: A) one 3-credit GER course in Humanities, either Hum 101: Ancient World or Hum 103: Mythology; a two-credit foundation consisting of one introductory course in literary studies (Engl 108, 199, 209, or 210) and one writing-intensive course in literary analysis and critical approaches (Engl 302); and ten 300-400-level courses distributed as follows—B) Four courses in English literature, at least three of which must be in literature prior to 1900; and one from Engl 305 or 306 (Shakespeare), one from Engl 383, 384, 385, 386 (pre-1800 period courses), and one from Engl 387, 388, 389 (post-1800 period courses); C) Two courses in American Literature, at least one of which must be in literature prior to 1916, including one from Engl 380, 381, 382 (period courses) and one from Engl 311, 314, 321, 322, 341, 345, or 346 (American Writers of Color); and D) 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 non-departmental 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 [if elected, substitute relevant 300-level American literature period course in C], Gender Identity and Literature, Literature and Cultural Studies, Language and Linguistics, or Writing and Rhetoric (Professional Writing, Creative Writing, or Rhetoric and Theory Emphasis).

Some 300-400-level courses offered only on alternate semesters; please check time schedule when planning these suggested sequences.
FIRST SEMESTER REQUIREMENTS
The first semester requirements are common to all English degree programs:

Freshman Year
First Semester
- Hum 101 [H] or 103 [H] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math Proficiency [N] (GER) 3
- Science Elective (GER) 1
- Tier I Science [Q] (GER) 1

Electives 6
Tier III Capstone (GER) 3
Senior Seminar, Senior Thesis, or Internship 4

Sophomore Year
First 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

Second Semester
- Engl 383, 384, 385, or 386 3
- Engl 387, 388, or 389 3
- Intercultural [I,G,K] (GER) 3
- Electives 6

Junior Year
First Semester
- American Writers of Color 1 3
- Concentration Elective 3
- Engl 380, 381, or 382 3
- English Literature Elective 3
- Electives 3
- Complete Writing Portfolio

Second Semester
- Concentration Elective 3
- English Option Elective 3
- Electives 9

Senior Year
First Semester
- Concentration Elective 3
- English Option Elective 3
- Electives 9

Second Semester
- Senior Seminar, Senior Thesis, or Internship 3
- Tier III Capstone (GER) 3

Electives 6

A 492, 493, 494, 495, 498, or senior project).

II. GRADUATE-STUDY PREPARATION
DEGREE PROGRAM (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

Second Semester
- Engl 383, 384, 385, or 386 3
- Engl 387, 388, or 389 3
- Intercultural [I,G,K] (GER) 3
- Electives 6

Junior Year
First Semester
- American Writers of Color 1 3
- Concentration Elective 3
- Engl 380, 381, or 382 3
- English Literature Elective 3
- Elective 3
- Complete Writing Portfolio

Second Semester
- Concentration Elective 3
- English Option Elective 3
- Elective 3

Senior Year
First Semester
- Concentration Elective 3
- English Option Elective 3
- Elective 3

Second Semester
- Senior Seminar, Senior Thesis, or Internship 3
- Tier III Capstone (GER) 3
- Elective 3

A 492, 493, 494, 495, 498, or senior project).

B 492, 493, 494, 495, 498, or senior project).

C 492, 493, 494, 495, 498, or senior project).

D 492, 493, 494, 495, 498, or senior project).

E 492, 493, 494, 495, 498, or senior project).

F 492, 493, 494, 495, 498, or senior project).

G 492, 493, 494, 495, 498, or senior project).

H 492, 493, 494, 495, 498, or senior project).

I 492, 493, 494, 495, 498, or senior project).

J 492, 493, 494, 495, 498, or senior project).

K 492, 493, 494, 495, 498, or senior project).

L 492, 493, 494, 495, 498, or senior project).

M 492, 493, 494, 495, 498, or senior project).

N 492, 493, 494, 495, 498, or senior project).

O 492, 493, 494, 495, 498, or senior project).

P 492, 493, 494, 495, 498, or senior project).

Q 492, 493, 494, 495, 498, or senior project).

R 492, 493, 494, 495, 498, or senior project).

S 492, 493, 494, 495, 498, or senior project).

T 492, 493, 494, 495, 498, or senior project).

U 492, 493, 494, 495, 498, or senior project).

V 492, 493, 494, 495, 498, or senior project).

W 492, 493, 494, 495, 498, or senior project).

X 492, 493, 494, 495, 498, or senior project).

Y 492, 493, 494, 495, 498, or senior project).

Z 492, 493, 494, 495, 498, or senior project).

1 Students may substitute one 4-credit Tier I Science for both the 3-credit Tier I Science and 1-credit Science Elective.

2 If American Writers-of-Color course focuses on pre-1916 works, then Engl 380 or 381 must be chosen.

3 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.

4 Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).

5 Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).

6 Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).

7 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.
Department of English

IV. ENGLISH/PRE-LAW DEGREE PROGRAM (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  

<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>Engl 108 [H], 199 [H], 209 [H],</td>
<td></td>
</tr>
<tr>
<td>or 210 [H] (GER)</td>
<td></td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist Elective [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
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</tbody>
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Sophomore Year

First Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social</td>
<td></td>
</tr>
<tr>
<td>Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 302 [M] [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 305 [H] or 306 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
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<tr>
<td>Pol S Elective^1</td>
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Second Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<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>
<td>3</td>
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<tr>
<td>Phil 201 [H] (GER)</td>
<td>3</td>
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<tr>
<td>Elective</td>
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Junior Year

First Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>American Writers of Color^2</td>
<td>3</td>
</tr>
<tr>
<td>Economics Elective^3</td>
<td>3</td>
</tr>
<tr>
<td>Engl 380, 381, or 382^4</td>
<td></td>
</tr>
<tr>
<td>English Literature Elective^4</td>
<td>3</td>
</tr>
<tr>
<td>Phil 260 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
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Second Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Concentration Electives</td>
<td>6</td>
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<tr>
<td>Pol S Elective^1</td>
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<tr>
<td>Electives</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>Concentration Elective</td>
<td>3</td>
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<tr>
<td>Electives</td>
<td>9</td>
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Second Semester  

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<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Senior Seminar, Senior Thesis, or</td>
<td>3</td>
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<tr>
<td>Internship^3</td>
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<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

^1 Pol S 101, 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; Accg 230 may be substituted).

If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.

V. ENGLISH/BUSINESS DEGREE PROGRAM (120 HOURS)  

Requirements in this option include those of the general degree plus 22 credit hours distributed as follows: 15 hours in business core courses (B Law 210; Econ 102 or 198; MIS 350; Mgt 301 or Dec 340; and Mktg 360); 4 hours in computer applications in business (Cpt S 105 or Cpt S 100 and 101); and 3 in ethics (Phil 260). In addition to satisfying these requirements, students in this option are urged to elect GER courses in either ecology, American cultures, history, or society to round out the broad-based liberal-arts education that they will bring to careers in business.

Freshman Year

Second Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social</td>
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<td>Sciences [S,K] (GER)</td>
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<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Engl 108 [H], 199 [H], 209 [H],</td>
<td></td>
</tr>
<tr>
<td>or 210 [H] (GER)</td>
<td></td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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Sophomore Year

First Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Econ 102 [S] or 198 [S] (GER)</td>
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</tr>
<tr>
<td>Engl 302 [M] [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 305 [H] or 306 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
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<tr>
<td>Elective</td>
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Second Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Cpt S 105 or Cpt S 100 and 101</td>
<td>4</td>
</tr>
<tr>
<td>Engl 383, 384, 385, or 386</td>
<td>3</td>
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<tr>
<td>Engl 387, 388, or 389</td>
<td>3</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<td>Elective</td>
<td>3</td>
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Junior Year

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<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>American Writers of Color^1</td>
<td>3</td>
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<tr>
<td>B Law 210</td>
<td>3</td>
</tr>
<tr>
<td>Concentration Elective</td>
<td>3</td>
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<tr>
<td>Engl 380, 381, or 382^2</td>
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<tr>
<td>English Literature Elective^3</td>
<td>3</td>
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<tr>
<td>Mgt 301 or Dec 340</td>
<td>3</td>
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<tr>
<td>Phil 260 [H] (GER)</td>
<td>3</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Second Semester  

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<tbody>
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<td>Concentration Elective</td>
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<tr>
<td>English Literature Elective^3</td>
<td>3</td>
</tr>
<tr>
<td>Mktg 360</td>
<td>3</td>
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<tr>
<td>Elective</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.

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 writing placement exam or Engl 100. Designed to develop students’ academic writing, critical thinking, rhetorical strategies, reading and library skills. Credit not granted for more than one: Engl 101, 105, and 198.

102 Writing Tutorial V 1 (0-3) to 3 (0-9). May be repeated for credit; cumulative maximum 5 hours. Prereq writing placement exam. Student-centered group tutorial focusing on writing improvement usually connected to the 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.

106 Conversation ESL 1 (0-2) May be repeated for credit; cumulative maximum 2 hours. Oral communication designed specifically to fit the needs of international students.

108 [H] Introduction to Literature 3 Reading short stories, novels, plays, and poetry by diverse voices; role of conventions, culture, history in interpretation of literature. Credit not granted for both Engl 108 and 199.

138 Freshman Special Topics 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

198 [W] English Composition Honors 3 Credit not granted for more than one: Engl 101, 105, and 198. Open only to students in the Honors College.

199 [H] English Composition and Literature Honors 3 Credit not granted for both Engl 108 and 199. Open only to students in the Honors College.

200 [W] Expository Writing 1 or 2 Prereq sophomore standing. For transfer students who need to make up writing credits.

201 [W] Writing and Research 3 Prereq Engl 101 or 105. Designed to develop students’ researching skills for writing across the disciplines.

209 [H] Readings in English Literature 3 Selected works by diverse voices from different eras of English literature; importance of conventions, cultural contexts, for interpretation and understanding.

210 [H] Readings in American Literature 3 Selected works by diverse voices from different eras of American literature; importance of conventions, cultural contexts, for interpretation and understanding.

216 [H] American Culture 3 Introduction to the interdisciplinary study of American cultures and the field of American studies.

222 [G] World Literature in English 3 Literature in English from such regions as Africa, Asia, and the Caribbean.

255 English Grammar 3 Introduction to the terms, concepts, and analytical methods of traditional English grammar.

256 Introduction to Syntax and Semantics 3 Technical introduction to the structure of words and sentences in natural languages and to the study of linguistic meaning.

261 [H] Literary Masterpieces 3 Prereq Engl 101. Works of lasting appeal in world literature from 1800 to the present.

300 Computers in English 1 (0-3) May be repeated for credit; cumulative maximum 6 hours. Use of computers in the writing process and in the analysis of literature. S, F grading.

301 [W] Writing and Rhetorical Conventions 3 Prereq Engl 101 or 105. Designed to provide students with advanced practice in and study of style, argument, and other discourse conventions.

302 [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.

305 [H] Shakespeare 3 Shakespearean drama to 1600.

306 [H] Shakespeare 3 Shakespearean drama after 1600.

308 [H] [M] Introduction to Literary Criticism 3 Introduction to the systematic study of critical and theoretical approaches to literature; emphasis on problems of interpretation.

309 [H] Women Writers 3 Women’s artistic and intellectual contributions to prose, fiction, drama, and poetry.

311 [G] Asian/Pacific American Literature 3 Same as CAC 313.

314 [M] Topics in Asian/Pacific American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Same as CAC 314.


322 [M] Topics in African American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Trends and major writers.

323 Approaches to the Teaching of English 3 Literature and language arts in secondary schools.


332 [M] Topics in Poetry 3 May be repeated for credit; cumulative maximum 6 hours. Forms, history, development of poetry; the epic, the lyric, verse satire, dramatic monologue, modernist verse.

333 [M] Topics in Fiction 3 May be repeated for credit; cumulative maximum 6 hours. Forms, history, development of narrative fiction: the tale, short story, Continental and experimental novel.

334 [M] Topics in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Forms, history, development of drama: comedy, tragedy, Medieval religious drama, theatre of the absurd.

335 [H] The Bible as Literature 3 Historical and literary approach to texts of the Jewish and Christian scriptures; emphasis on history, interpretation, and influence.

338 [M] Topics: Major Trends and Figures 3 May be repeated for credit; cumulative maximum 6 hours. Literary trends or major writers.

339 Topics in Film as Literature 3 May be repeated for credit; cumulative maximum 6 hours. Analytical study of film as major literary genre.

341 [G] [M] Native American Literature 3 Same as CAC 373.

345 [G] [M] Chicano/Chicana Literature 3 Same as CAC 353.

346 Vanguard Poets 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.

354 History of the English Language 3 Prereq one year For L. Language related to the origin, history, and literature of its speakers.

355 Multimedia Authoring: Exploring New Rhetorics 3 Prereq Engl 301 or F A 331. Writing for new computer-based media; multimedia authoring project; examination of new rhetorics of information technology.

366 [H] The English Novel to 1900 3 Classic English novels in cultural perspective by such authors as Defoe, Fielding, Austen, the Brontes, Thackeray, Dickens, George Eliot, Hardy.

368 [H] The American Novel to 1900 3 Classic American novels in cultural perspective by such authors as Cooper, Hawthorne, Melville, Twain, James, Jewett, 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 WW I to the present.

383 Chaucer and Medieval Literature 3 Prereq Engl 302 or substitution approved by advisor. Chaucer’s Canterbury Tales in the context of Medieval culture and literary tradition.

384 English Literature of the 16th Century 3 Prereq Engl 302 or substitution approved by advisor. Nondramatic literature from the Metaphysicals and Jonson through Milton, against background of scientific revolution, religious controversy, and civil war.

386 English Literature of the Restoration and 18th Century 3 Prereq Engl 302 or substitution approved by 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 literacy revolt, especially 1798-1832.

388 Victorian Literature 3 Prereq Engl 302 or substitution approved by advisor. Major works by Tennyson, Dickens, Browning, Swinburne, Wilde, and others in a dynamic age of change in Britain, 1832-1901.

389 Modern British Literature 3 Prereq Engl 302 or substitution approved by advisor. Fiction, drama, poetry in age of conflict, artistic experimentation: Joyce, Woolf, Lawrence, Murdock, 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 [H] Women Writers in the American West 3 Prereq completion of one Tier I and three Tier II courses. Diversity of writings by women in the trans-Missouri West from the 1890s to the present.

410 [I] Cultural Criticism and Theory 3 Same as CAC 405.

415 [H] Traditions of Comedy and Tragedy 3 Prereq completion of one Tier I and three Tier II courses. Study of tragedy and comedy in the Age of Shakespeare.

419 [H] The Twentieth Century Novel 3 Prereq completion of one Tier I and three Tier II courses. The novel in English in the literary and cultural context of the modern age.

443 Problems in English Linguistics: Syntax and Phonology 3 May be repeated for credit; cumulative maximum 6 hours. Technical introduction to generative analysis of sentences and to sound systems of human languages. Credit not granted for both Engl 443 and 543.

451 Advanced Creative Writing: Prose 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Engl 351 or consent of instructor. Writing the novel.

452 Advanced Creative Writing: Poetry 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Engl 352 or consent of instructor. Workshop approach to poetry writing for the advanced student.

458 Topics in Sociolinguistics and Psycho-linguistics 3 May be repeated for credit; cumulative maximum 6 hours. Relationship of language to social and psychological structures.

470 Culture of the American West 3 May be repeated for credit; cumulative maximum 6 hours. The West in American literature or topics in culture of the American West.

471 [H] Cultural Politics Since World War II 3 Same as Am St 471.

472 [T] Ecological Issues and American Nature Writing 3 Same as Am St 472

492 [M] Advanced Topics in 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 Engl 496 and 596.

498 Internship V 1-5 May be repeated for credit; cumulative maximum 15 hours. Prereq junior in Engl. Off-campus cooperative education learning experience in business 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 and Practices 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 susasive discursive practices.

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.

523 Seminar in English Literature of the 17th Century 3 May be repeated for credit; cumulative maximum 6 hours.

527 Seminar in English Literature of the Restoration and 18th Century 3 May be repeated for credit; cumulative maximum 6 hours.

529 Seminar in 19th Century American Literature 3 May be repeated for credit; cumulative maximum 6 hours.

531 Administering a Writing Lab 3 Prereq Engl 501 or 502 or consent of Writing Lab Director. Combining theory and practice in writing lab supervision and management. Interns will work under direct faculty supervision.

532 Teaching Writing to Nontraditional Students 3 Prereq Engl 501, 502, or by interview only. Theory and practice of the teaching of basic writers.

534 Theories and Methods of the Teaching of Technical and Professional Writing 3 Historical and theoretical bases for production of scientific discourse; training in its practical applications.

537 Seminar in English Literature 3 May be repeated for credit; cumulative maximum 12 hours. Major topics and figures.

541 Seminar in TESOL and Linguistics 3 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught by UI (Eng 510), open to WSU students.

543 Problems in English Linguistics: Syntax and Phonology 3 May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of Eng 443; additional requirements. Credit not granted for both Engl 443 and 543. Cooperative course taught jointly by WSU and UI (Eng 543).

545 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 practice.

598 Teaching Apprenticeship 1 May be repeated for credit. S, F grading.

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

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

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

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

Department of Entomology

Professor and Chair, J. J. Brown; Professor, A. A. Berryman; Associate Professors, G. E. Long, G. L. Piper, W. S. Sheppard, W. J. Turner; Assistant Professors, C. A. Sheppard, R. S. Zuck; Research and Extension Centers: A. A. Antonelli, E. H. Beers, J. F. Brunner, J. E. Dunley, D. F. Mayer, K. Pike, J. D. Stark, L. K. Tanigoshi, D. B. Walsh.

Insects and other related arthropods are the dominant consumers in all terrestrial ecosystems. There are far more kinds of insects than all other creatures combined. They compete at all levels with humans in the production, processing and use of food and fiber resources. They are a major health threat to most of the world’s people. In-depth knowledge in basic areas of insect identification, morphology, physiology, behavior and ecology are prerequisites to developing and applying control measures against our arthropod competitors. Ecological and legal restrictions on pesticide usage require people knowledgeable in the safe use of pesticides and in the effect of such use on the environment.

The entomology curriculum provides the opportunity to study the basic and applied aspects of entomology. Courses are designed for majors and nonmajors, providing needed training for students in agriculture, education, veterinary medicine, microbiology, public health, environmental sciences, and natural sciences.

The curriculum prepares students for graduate study in entomology or for employment in institutional or private pest control oriented areas. An interdisciplinary curriculum in integrated pest management (IPM) is available to students with interests that span entomology and pest management.

Facilities are available for graduate study in the major areas of entomology: apiculture behavior, integrated biological control and sustainable pest management, ecology, forest entomology, insect-plant relationships, medical/veterinary entomology, population genetics, physiology, systematics, and environmental toxicology. Departmental faculty at outlying research centers also serve as advisors for graduate student research and sometimes teach over WHETS. Extensive insect collections, insectary, quarantine, computer and video facilities support teaching, extension, and research. The department is committed to developing an integrated biological control approaches to pest management. This commitment is reflected in the broad involvement of the faculty and evolving curricula in biocontrol.

The department offers courses of study leading to the degrees of Bachelor of Science in Entomology, Master of Science in Entomology, and Doctor of Philosophy (Entomology). Additional information can be obtained on the World Wide Web at: coeext.csce.wsu.edu/~entom/.

Degree Program Requirements
Honors students complete Honors Requirements in place of General Education Requirements.

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; PI P 429; SoilS 201; Stat 310 and 412 and crops courses in CropS and Hort.

ENTOMOLOGY DEGREE PROGRAM (120 HOURS) ✔FYDA

Freshman Year
First Semester
Bio S 103 [B] (GER) 4
Engl 101 [W], 201 [W] or 301 [W] (GER) 3
GenEd 110 [A] (GER) 3
Second Semester
Bio S 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 Electives 2 or 3
Second Semester
Bio S 372 4
Chem 240 or 340 3 or 4
GenCB 301 4
Social Sciences [S,K] (GER) 3

Junior Year
First Semester
Bot 320, Zool 352, or 353 3 or 4
Entom 343, 344 4
Math 140 [N] or 205 [P] (GER) 4
Electives 6
Second Semester
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3

Senior Year
First Semester
Entom 439 or 440 [M] 4
Electives 6
Second Semester
Entom/IPM Electives 7 or 8
Electives 7 or 10

Second Semester
Hours
Tier III Capstone (GER) 3
Electives 12

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, 443, 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 major is a multidisciplinary course of study sponsored by 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 one or both of the areas of entomology and weed science 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 Agriculture with a minor in IPM. At least 40 of the total hours required must be in 300-400-level courses.

FIRST AND SECOND YEAR REQUIREMENTS
The requirements for the first two years are common to both integrated pest management degree programs:

Freshman Year
First Semester
Bio S 103 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
IPM 201 2
Second Semester
Bio S 104 [B] or Bot 120 [B] (GER) 4
Chem 102 [P] or 106 [P] (GER) 4
GenEd 111 [A] (GER) 3

Electives 6

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Department of Entomology
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.


344 [M] General Entomology Laboratory 2 (0-6) Prereq Bio S 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.

376 Measuring Populations in Orchards 2 Prereq Entom 375. Common sampling methods and factors influencing populations dynamics of arthropods and management options. Field trips required.

377 Biological and Bio-Rational Tactics 2 Prereq Entom 376. Different tools to be used in an integrated pest program for Washington Orchards. Field trips.

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 Bio S 104, completion of one Tier I and three Tier II courses; Rec Zool 150. Development of biological ideas and knowledge from antiquity to present with emphasis on major advances achieved through invertebrate models. Cooperative course taught by WSU, open to UW 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.

443 Insect Ecology 3 (2-3) Prereq Bio S 104, Entom 343, Math 140. Interrelationships of insects with the physical and biotic environment; population dynamics and community relations. Cooperative course taught by WSU, open to UW students (Ent 443). Credit not granted for Entom 443 and 477, 478, or 479.


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 2 Prereq Bio S 103, 104. Aspects of medical entomology as they apply to humans. Cooperative course taught by WSU, open to UW students (Ent 448).

449 Veterinary Entomology 1 Prereq Bio S 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 1 Identification and biology of insects associated with aquatic and subaquatic environments. Cooperative course taught by UI (Ent 472), open to WSU students.

474 Aquatic Entomology Lab 2 (0-6) Prereq c/ or Entom 472. Field trips required. Cooperative course taught by UI (Ent 474), open to WSU students.


478 Physiological Ecology of Insects 1 Prereq Entom 343, Math 140. Effects of and reactions to physical factors in the environment by arthropods. Credit not granted for Entom 443 and 477, 478, or 479.

479 Natural History of Insects 1 Prereq Entom 343, Math 140. Life history strategies and management of population of terrestrial arthropods. Credit not granted for Entom 443 and 477, 478, or 479.
### 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.)

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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 training depth in an optional area of specialization. The program has identified nine optional areas of specialization: agricultural ecology, biological science, hazardous waste management, human ecology, environmental education, environmental quality (air & water), natural resources management, systems, and environmental land-use planning. (Fact sheets on each option are available from the ES/RP Program Office.) Students may also, in consultation with their 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 and also Areas of Coherence. 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 DEGREE PROGRAM (123 HOURS)

Freshman Year

<table>
<thead>
<tr>
<th>HOURS</th>
<th>COURSE</th>
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<tbody>
<tr>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 101 [B] or 150 [Q] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Anth 101 [S] or Soc 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Econ 101 [S] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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Sophomore Year

<table>
<thead>
<tr>
<th>HOURS</th>
<th>COURSE</th>
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<tbody>
<tr>
<td>First Semester</td>
<td>Hours</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>Bio S 103 [B] (GER)</td>
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<tr>
<td>Engl 201 [W], 301 [W], or 402 [W] (GER)</td>
<td>3</td>
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<tr>
<td>ES/RP 210</td>
<td>3</td>
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<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Bio S 104 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 240 or 340 &amp; 341</td>
<td>4 or 5</td>
</tr>
<tr>
<td>GenEd 111 [A] or Geol 102 [P] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Phys 102 [P] or 202 [P] (GER)</td>
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Junior Year

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<tbody>
<tr>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>BC/BP 364</td>
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<tr>
<td>ES/RP 335 [M]</td>
<td>3</td>
</tr>
<tr>
<td>GenCB 301 or Micro 301</td>
<td>4</td>
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<tr>
<td>GenEd 111 [A] or SoilS 201 [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Anth 309 [K] (GER)</td>
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<tr>
<td>Bio S 372</td>
<td>4</td>
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<tr>
<td>ES/RP 490</td>
<td>1</td>
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<tr>
<td>Stat 212 [N] (GER) or 412</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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Senior Year

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<tr>
<th>HOURS</th>
<th>COURSE</th>
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<tbody>
<tr>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Bio S 474</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 404 [M]</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 491</td>
<td>1</td>
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<tr>
<td>300-400-level Soc [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>300-400-level Ag Ec or Econ</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 444</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

NOTES

Courses taken to fulfill the above requirements, as listed, cannot be taken to satisfy requirements for the option. Beyond those options listed, students are encouraged, in close consultation with an advisor, to create their own options, ones more closely fitted to their specific needs; such option alternatives must be approved by the program advisor. Students with a dual major or who already have a bachelor’s degree may use the other degree program as a substitution for the required option, subject to advisor’s approval.

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.
Description of Courses

Environmental Science and Regional Planning

ES/RP


150 [Q] Natural Science in the Environment 3 (2-3) Introduction to scientific principles and problem solving with applications to studies of the environment.

174 Introduction to Meteorology and the Atmospheric Environment 3 Same as C E 174.

210 Microcomputer Models of Environmental Systems 3 Introduction to using microcomputers to model environmental systems. Cooperative course taught by WSU, open to UI students (Envs 210).

301 Forest and Range Plant Resources 1 3 (2-3) Same as NATRS 301.

311 Natural Resource Economics 3 Same as Ag Ec 311.


375 Aspects of Sustainable Development 3 Same as I Bus 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 Bio S 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, radioecology 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 4 (2-2) Same as Zool 411.

412 [M] Natural Resource Policy and Administration 3 (2-2) Same as NATRS 438.

414 Environmental Biophysics 2 Same as Soils 414. Credit not granted for both ES/RP 414 and 514.

415 Environmental Biophysics Lab 1 (0-3) Same as Soils 415.

416 Radiation Biology 4 (3-3) Prereq introductory radiological physics, or one course each in biology and radiological physics; Rec ES/RP 406. Effects of ionizing radiation at the molecular, cellular, organ and organism level. Credit not granted for both ES/RP 416 and 516.

418 Human Issues in International Development 3 Same as Anth 418.

419 Fundamentals of Risk Assessment 2 Prereq Bio S 103, 372; Math 107; Stat 412. Overview of risk assessment processes; identification of toxicological effects; introduction to methods used to quantify potential health and environmental risks.

420 Field and Laboratory Techniques in Environmental Science 2 May be repeated for credit; maximum 6 hours. Prereq Bio S 372; Chem 105. Fundamentals and hands-on experience on the use of field and laboratory techniques and instruments utilized in environmental science. Field trips required.

424 Environmental Health Assessment 2 Prereq one course each in biology, calculus, chemistry, general ecology and physics; Rec ES/RP 406. Environmental transport, fate and effects of radioactive and hazardous materials. Credit not granted for both ES/RP 424 and 524.

425 Economic Analysis of Public Projects and Policies 3 Same as Ag Ec 425.

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.

444 Environmental Assessment 3 Rec Bio S 372. Analysis of environmental impact statements and their legal framework; methods of environmental assessment and team development 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 Micro 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 Soils 470.

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, environmental modeling, and review of specific toxicants and actual waste site studies. Cooperative course taught by UI (Che 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.


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 May be repeated for credit; cumulative maximum 3 hours.

493 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours.

495 Undergraduate Internship V 1-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Practical experience in appropriate agencies; for career students in environmental science.

496 Cooperative Education Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Practical experience in appropriate agencies; for career students in environmental science.

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

502 Human Health and the Environment 3 Graduate-level counterpart of ES/RP 426; additional requirements. Credit not granted for both ES/RP 402 and 502.

503 Natural Resource Planning 3 (2-3) Same as NATRS 503.

504 Ecosystem Management 3 Analysis of ecosystem processes; dual emphasis on ecological principles and development of methods and concepts to evaluate policies for management.

509 Applied Radiological Physics 3 (2-3) Graduate-level counterpart of ES/RP 409; additional requirements. Credits not granted for both ES/RP 409 and 509.

510 Applied Radiation Dosimetry 3(2-3) Prereq ES/RP 409/509 or course in radiological physics. Determination of exposure and doses from external and internal sources of radiation, with applications to environmental, occupational, and medical protection.

511 Legal Process 3 Rec ES/RP 444. Legal process in general and role of the judiciary in natural resource management. Cooperative course taught jointly by WSU and UI (Law 511).

512 Environmental Epidemiology 3 Prereq Stat 412; Rec Micro 420; Stat 422. Environmental epidemiologic methods to investigate environmental problems and familiarity with relevant scientific literature.

514 Environmental Biophysics 2 Graduate-level counterpart of ES/RP 414; additional requirements. Credit not granted for both ES/RP 414 and 514. Cooperative course taught by WSU, open to UI students (Bot 545).

516 Radiation Biology 4 (3-3) Graduate-level counterpart of ES/RP 416; additional requirements. Credit not granted for both ES/RP 416 and 516.

517 Fate and Effects of Environmental Contaminants 3 Prereq graduate standing. Rec biochemistry, organic chemistry. Rational perspective on the environmental behavior and biological effects of contaminants.

519 International Development and Human Resources 3 Same as Anth 519.
524 Environmental Health Assessment 2 Graduate-level counterpart of ES/RP 424; additional requirements. Credit not granted for both ES/RP 424 and 524.

526 Population Analysis 1 Same as NATRS 526. Credit not granted for ES/RP 426 and 526.

527 Environmental Chemistry 2 Same as Chem 527. Credit not granted for both ES/RP 427 and 527.

528 Environmental Management Systems 3 (2-3) Introduction to EMS standards; procedures and requirements for EMS certification; creations and auditing of an EMS.

529 Population Theory 1 Same as NATRS 529. Credit not granted for both ES/RP 429 and 529.

530 Fundamentals of Industrial Safety 2 Prereq graduate standing or by interview only. Fundamentals for recognizing and controlling hazards and losses to protect the safety and health of workers.


532 Applied Environmental Toxicology 3 Prereq ES/RP 531 or P/T 535. 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.

544 Environmental Assessment 3 Graduate-level counterpart of ES/RP 444; additional requirements. Credit not granted for both ES/RP 444 and 544. Cooperative course taught by WSU, open to UI students (Geog 544).

545 Hazardous Waste Management 3 Graduate-level counterpart of ES/RP 445; additional requirements. Credit not granted for both ES/RP 445 and 545. Cooperative course taught by WSU, open to UI students (EnvS 545).

547 Public Budgeting 3 Same as Pol S 546.

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 remides for environmental injury. Cooperative course taught by UI (Law 947), open to WSU students.

549 Public Land Law 3 History of public lands, special problems arising from ownership of land by governments, legal issues incident various uses of public land including land sales, mineral extraction, livestock grazing, timber harvest, recreation, wildlife protection, and preservation. Cooperative course taught by UI (Law 948), open to WSU students.

550 System Dynamics Models of Environmental Systems 3 Prereq graduate standing; Analysis of environmental system dynamics; development and uses of simulation models using the Stella software on Macintosh. Cooperative course taught by WSU, open to UI students (EnvS 550).

551 Energy Production and the Environment 2 Graduate-level counterpart of ES/RP 451; additional requirements. Credit not granted for both ES/RP 451 and 551.

552 Environmental Microbiology 3 Same as Micro 552. Credit not granted for both ES/RP 452 and 552.


554 Environmental Microbiology 3 Same as Micro 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 Environmental Risk Assessment for Hazardous Waste Evaluations 3 Graduate-level counterpart of ES/RP 473; additional requirements. Credit not granted for both ES/RP 473 and 573. Cooperative course taught by UI (Chem 580), open to WSU students.

584 Engineering Aspects of Aquatic Biology 4 (3-3) Same as C E 584.

585 Aquatic System Restoration 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.

Department of Fine Arts

Professor and Department Chair, C. Watts; Professors, R. Coates, J. Dollhausen, R. Helm, F. Ho, P. Siler; Associate Professors, A. Christenson, C. Ivory, P. Lee; Assistant Professors, P. Nguyen, S. Kesten.

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.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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.

Required Courses:

BACHELOR OF FINE ARTS DEGREE PROGRAM (120 HOURS)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA 103</td>
<td>3</td>
</tr>
<tr>
<td>Art History</td>
<td>12</td>
</tr>
<tr>
<td>FA 201, 202, 303, 304</td>
<td></td>
</tr>
<tr>
<td>Drawing</td>
<td>9</td>
</tr>
<tr>
<td>FA 110, 111, 312</td>
<td></td>
</tr>
<tr>
<td>Painting</td>
<td>3</td>
</tr>
<tr>
<td>FA 320</td>
<td></td>
</tr>
<tr>
<td>Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>FA 350</td>
<td></td>
</tr>
<tr>
<td>Contemporary Issues Seminar</td>
<td>2</td>
</tr>
<tr>
<td>FA 498</td>
<td></td>
</tr>
<tr>
<td>Senior Exhibit</td>
<td>2</td>
</tr>
<tr>
<td>FA 493</td>
<td></td>
</tr>
<tr>
<td>GERs</td>
<td>39</td>
</tr>
<tr>
<td>Foreign Language (if required)</td>
<td>8</td>
</tr>
<tr>
<td>Electives (university-wide)</td>
<td>3</td>
</tr>
<tr>
<td>FA 300-400-level electives (major emphasis)</td>
<td>18</td>
</tr>
<tr>
<td>FA 300-400-level electives (minor emphasis)</td>
<td>9</td>
</tr>
<tr>
<td>F A other electives</td>
<td>9</td>
</tr>
<tr>
<td>Writing in the Major</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives (university-wide)
Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

For the degree Bachelor of Arts in Fine Arts a total of at least 47 hours of fine arts is required; 29 of these hours must be in 300-400-level courses.

BACHELOR OF ARTS IN FINE ARTS

DEGREE PROGRAM (120 HOURS) FYDA

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>F A 101</td>
<td>3</td>
</tr>
<tr>
<td>F A 103</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>F A 110</td>
<td>3</td>
</tr>
<tr>
<td>F A 111</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</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>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>F A 201</td>
<td>3</td>
</tr>
<tr>
<td>F A 320</td>
<td>3</td>
</tr>
<tr>
<td>F A 350</td>
<td>3</td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>300-400-level F A Elective</td>
<td>3</td>
</tr>
<tr>
<td>F A 202</td>
<td>3</td>
</tr>
<tr>
<td>F A 340 or 351</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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</tbody>
</table>

Junior Year

First 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>
<tr>
<td>F A [M] Course</td>
<td>3</td>
</tr>
<tr>
<td>F A 303</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Electives</td>
<td>4</td>
</tr>
<tr>
<td>Science [B,P,Q] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>300-400-level F A Elective</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>F A [M] Course</td>
<td>3</td>
</tr>
<tr>
<td>F A 304</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

Senior Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>300-400-level F A Elective</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>F A 498</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>300-400-level F A Elective</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>8</td>
</tr>
</tbody>
</table>

Certification Process

Prospective applicants for certification are responsible for acquainting themselves with all requirements and procedures. Details including specific course requirements and portfolio submission are available in the departmental office.

Bachelor of Fine Arts certification requirements:
1. 12 hours from F A 103, 110, 111, 320, 350; 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. 12 hours from F A 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.

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.
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.
305 [H] [M] Women Artists I, Middle Ages-1900 3 Survey of women artists from Middle Ages to the end of nineteenth century.
403 [M] Modern Theories of Art 3 Selected topics in 19th and 20th centuries 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 103 Art 3 (0-6) Introduction to formal elements through studio experience.

Drawing

F A 110 Drawing 3 (0-6) Composition in pictorial space, visualization of ideas, drawing from life.
312 Advanced Drawing 3 (0-6) May be repeated for credit. Prereq F A 103, 110. 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 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. 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 Prereq F A 103, 110. 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 331. Principles and processes of electronic image processing, image/text design and designing for the internet.

433 Digital Printing V 3 (0-6) or 6 (0-12) 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 V 3 (0-6) or 6 (0-12) May be repeated for credit. Prereq F A 331, 332. Emphasis on creating multimedia and worldwide web projects; dynamic HTML, CGI scripting, digital video, animation, and multimedia authoring.

495 Electronic Imaging Partnership V 3-12 May be repeated for credit. Prereq 6 credits in F A 434, major in F A. Placement in work-related electronic imaging environments for practical application and experience.

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 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 V 3 (0-6) or 6 (0-12) May be repeated for credit. 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 V 3 (0-6) or 6 (0-12) May be repeated for credit. Prereq F A 351.

550 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

551 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

552 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Printmaking
F A

370 Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 103, 110. Variety of techniques: screenprinting, etching and lithography; emphasis is given to screenprinting during particular terms.

471 Advanced Printmaking V 3 (0-6) or 6 (0-12) May be repeated for credit. Prereq F A 370.

570 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

571 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

572 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Photography
F A

380 Introduction to Photography 3 Prereq F A 103, 110. An experience with cameras and associated materials and techniques; photography in a historical and aesthetic context.

381 Photography 3 (0-6) Prereq F A 380. Camera and black/white film used in conjunction with studio and darkroom techniques; composition and aesthetic concepts introduced.

382 Intermediate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 380. Expansion of conceptual building in black/white darkroom and camera techniques; research and portfolio.

385 Digital Imaging/Color Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Introduction to digital imaging software, digital cameras, scanning, and digital output options; conventional chemical-based color photography techniques.

483 Advanced Photography V 3 (0-6) or 6 (0-12) May be repeated for credit. 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.

580 Graduate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

581 Graduate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

582 Graduate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Art Education
F A

390 Elementary School Art Education 2 (1-2) Theory and methods for the study and making of art including practice using art media for creative expression.

Gallery Procedures
F A

490 Gallery Procedures with Museum of Art 3 (0-6) or 6 (0-12) May be repeated for credit; cumulative maximum 9 hours. By interview only. Introduction to art museums and galleries, including practicum in exhibition preparation, installation art handling, collections.

Special Topics, Seminars, and Thesis
F A

361 Special Topics—Drawing V 1-6 May be repeated for credit.

362 Special Topics—Painting V 1-6 May be repeated for credit.

363 Special Topics—Electronic Imaging V 1-6 May be repeated for credit.

364 Special Topics—Ceramics V 1-6 May be repeated for credit.

365 Special Topics—Sculpture V 1-6 May be repeated for credit.

366 Special Topics—Printmaking V 1-6 May be repeated for credit.

367 Special Topics—Black and White Photography V 1-6 May be repeated for credit.

368 Special Topics—Color Photography V 1-6 May be repeated for credit.

400 Special Topics V 1-6 May be repeated for credit; cumulative maximum 18 hours.

401 Special Topics—Art History V 1-6 May be repeated for credit. Prereq 201, 202.

491 Seminar: Advanced Study, Art on Location 3 Travel to art collections in major urban centers; individual student research into how art functions within a major art center.

493 Senior Exhibit 2 Prereq certified BFA major. Independent study involving exhibit, written thesis and oral examination working with area coordinator. S, F grading.

498 Contemporary Issues Seminar 2 May be repeated for credit; cumulative maximum 4 hours. Prereq F A major. Recent history of painting, sculpture, photography, electronic imaging, or criticism.

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

598 Graduate Seminar 2 May be repeated for credit; cumulative maximum 4 hours. Topics in contemporary issues, theory, and criticism.

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

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

Study Abroad
F A

210 Topics—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

306 Topics—Study Abroad 3

311 Topics—Study Abroad 3

314 Topics—Study Abroad 3

315 Topics—Study Abroad 3

318 Topics—Study Abroad 3

319 Topics—Study Abroad 3
Department of Food Science and Human Nutrition


The Department of Food Science and Human Nutrition offers courses of study in two undergraduate major fields, food science and dietetics with different options and areas of interests available in each field. Students enrolled in these options or areas of interests complete prescribed courses of study leading to the Bachelor of Science in Food Science and Human Nutrition.

Food Science

Food science students at Washington State University 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 equal to or 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

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 in foods (nutrition and foodservice management based on chemistry, biochemistry, physiology and business), the student fulfills the minimum academic requirements of The American Dietetic Association (ADA) as well as those of the department and university. The student must gain post-baccalaureate supervised practice experience through a dietetic internship before becoming eligible for registration and ADA membership. Internships in hospitals or selected organizations are very competitive and are available mostly in the midwest and eastern part of the United States. 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 Undergraduate Option in General Dietetics combines classroom education with supervised experience in dietetics. Course work is similar to that described for general dietetics. In this four-year option, the student completes the academic requirements for the department and university, as well as the supervised practice requirements for registration and membership in the American Dietetic Association and for taking the examination to become a registered dietitian. Graduates of this option qualify for the same kinds of positions as do the graduates of the General Dietetics Option who complete a post-baccalaureate internship.

After completing academic and performance requirements, it is necessary to pass a registration examination which is given twice each year under the auspices of The Commission on Accreditation of Dietetic Education. When students successfully complete the examination, they are Registered Dietitians and are entitled to use the initials R. D. to indicate professional competence.

Other Opportunities

The department offers minors in food science, foods and nutrition, and food service management. In addition to undergraduate studies, the department offers courses of study leading to the degrees of Master of Science in Food Science, Master of Science in Human Nutrition (thesis and non-thesis option), Doctor of Philosophy (Food Science) and Doctor of Philosophy (Nutrition).

Master of Science in Human Nutrition (non-thesis)

Requirements: 36 total hours; 32 graded hours; 4 hours of thesis or special problems; 26 hours of 500-level courses; 6 hours 300-400-level courses; thesis or special project; and oral presentation and defense.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

FOOD SCIENCE DEGREE PROGRAM (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.

Freshman Year

First Semester
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 140 or 171 [N] (GER) 1

Second Semester
Bio S 103 [B] (GER) 4
Chem 106 [P] (GER) 4
FSHN 170 2
GenEd 111 [A] (GER) 3

Sophomore Year

First Semester
Ag Ec 201 [S] (GER) 3
Chem 240 4
ComSt 102 [C] (GER) 3
Food Production Course 3
Phys 101 [P] (GER) 4

Second Semester
A S 314 or FSHN 233 3
BC/BP 364 4
FSHN 200 3
Micro 301 4

Junior Year

First Semester
Ag Ec 350 3
FSHN 303 3
FSHN 416 2
FSHN 417 3
FSHN Commodity Course 3
Stat 212 [N] (GER) 4

Second Semester
Arts and Humanities [H,G] or Social Sciences [S,K] GER 3
FSHN 422 or 450 4
FSHN Commodity Course 3
FSHN 433 3
FSHN 434 3
Intercultural Studies [I,G,K] GER 3

Senior Year

First Semester
Engl 402 [W] (GER) 3
FSHN 402 1
FSHN 460 3
FSHN 461 [M] 3
FSHN Commodity Course 3
Tier III Capstone (GER) 3

Second Semester
FSHN 422 or 450 4
FSHN 462 4
FSHN 470 3
Elective 4

Notes:
1Math 171 and 172 are required of those students who will be competing for scholarships offered by the Institute of Food Technologists.
2Food Production courses include but are not limited to: A S 101, CropS 101, 201, Hort 201, 211, 310, 320, 321.
3Commodity courses are: FSHN 301, 302, 303, 304.
4Courses are taught alternate years.

Suggested electives for areas of interest:

Business/Marketing: Acctg 230, 231, Ag Ec 360, B Law 210, Cpt S 405, Mgt 301, Psych 306.
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
DEGREE PROGRAM (126 HOURS) ♦ FYDA

Freshman Year

First Semester
Chem 101 [P] (GER) 4
Communication Proficiency [C,W] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Math Proficiency [N] (GER) 3

Second Semester
Chem 102 [P] (GER) 4
FSHN 233 3
GenEd 110 [A] or 111 [A] (GER) 3
Micro 101 [B] (GER) 4
Psych 105 [S] or Soc 101 [S] (GER) 3

Sophomore Year

First Semester
Acctg 230 3
Arts & Humanities [H,G] (GER) 3
Chem 240 4
FSHN 120 3
FSHN 121 1
Zool 251 4

Second Semester
Anth 309 [K] (GER) 3
BC/BP 364 4
FSHN 281 1
H A 359 4
Zool 315 4

Junior Year

First Semester
FSHN 330 [M] 3
FSHN 331 3
FSHN 350 3
Electives 4
Complete Writing Portfolio

Second Semester
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
FSHN 201 1
FSHN 380 3
FSHN 430 3
H D 204 3

Senior Year

First Semester
FSHN 370 3
FSHN 436 3
FSHN 438 2
FSHN 480 3
Statistics 212 [N] (GER) 3
Tier III Capstone (GER) 3

Second Semester
FSHN 420 2
FSHN 426 [M] 3
FSHN 435 3
FSHN 437 1
Electives 7

Suggested Electives: Bio S 103, 104; FSHN 431, H D 201, 202, 403; PharP 217; Psych 306.

Required for HNF majors: I D 101 or 202; H D 201 or 204. NOTE: I D 202 can also be used to partially fulfill a GER in Arts and Humanities.

COORDINATED UNDERGRADUATE
OPTION IN GENERAL DIETETICS (CUOGD)
DEGREE PROGRAM (136 HOURS)

Application for admission to the CUOGD is ordinarily made during the spring semester of the sophomore year. Application deadline is February 1. Transfer deadline is February 1. Transfer students should consult the director for advice on applying and planning.

Freshman Year

First Semester
Chem 101 [P] (GER) 4
Communication [C,W] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Math Proficiency [N] (GER) 3

Second Semester
Chem 102 [P] (GER) 4
FSHN 233 3
GenEd 110 [A] or 111 [A] (GER) 3
Micro 101 [B] (GER) 4
Psych 105 [S] or Soc 101 [S] (GER) 3

Sophomore Year

First Semester
Acctg 230 3
Arts & Humanities [H,G] (GER) 3
Chem 240 4
FSHN 120 3
FSHN 121 1
Zool 251 4

Second Semester
Anth 309 [K] (GER) 3
BC/BP 364 4
FSHN 281 1
H A 359 4
Zool 315 4

Junior Year

First Semester
FSHN 330 [M] 3
FSHN 331 3
FSHN 350 3
Electives 4
Complete Writing Portfolio

Second Semester
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
FSHN 201 1
FSHN 380 3
FSHN 430 3
H D 204 3

Senior Year

First Semester
FSHN 370 3
FSHN 436 3
FSHN 438 2
FSHN 480 3
Statistics 212 [N] (GER) 3
Tier III Capstone (GER) 3

Second Semester
FSHN 420 2
FSHN 426 [M] 3
FSHN 435 3
FSHN 437 1
Electives 7

Suggested Electives: Bio S 103, 104; FSHN 431, H D 201, 202, 403; PharP 217; Psych 306.

Required for HNF majors: I D 101 or 202; H D 201 or 204. NOTE: I D 202 can also be used to partially fulfill a GER in Arts and Humanities.

Suggested Electives: Bio S 103, 104; FSHN 431, H D 201, 202, 403; PharP 217; Psych 306.

COORDINATED UNDERGRADUATE
OPTION IN GENERAL DIETETICS (CUOGD)
DEGREE PROGRAM (136 HOURS)

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Freshman Year

First Semester
Chem 101 [P] (GER) 4
Communication [C,W] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Math Proficiency [N] (GER) 3

Second Semester
Chem 102 [P] (GER) 4
FSHN 233 3
GenEd 110 [A] or 111 [A] (GER) 3
Micro 101 [B] (GER) 4
Psych 105 [S] or Soc 101 [S] (GER) 3

Sophomore Year

First Semester
Acctg 230 3
Arts & Humanities [H,G] (GER) 3
Chem 240 4
FSHN 120 3
FSHN 121 1
Zool 251 4

Second Semester
Anth 309 [K] (GER) 3
BC/BP 364 4
FSHN 281 1
H A 359 4
Zool 315 4

Junior Year

First Semester
FSHN 330 [M] 3
FSHN 331 3
FSHN 350 3
Electives 4
Complete Writing Portfolio

Second Semester
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
FSHN 330 [M] 3
FSHN 331 3
FSHN 350 3
FSHN 436 3
FSHN 475 3
Complete Writing Portfolio

Second Semester
FSHN 380 3
FSHN 426 [M] 3
FSHN 435 3
FSHN 437 1
FSHN 476 3

Senior Year

First Semester
FSHN 370 3
FSHN 477 8
FSHN 480 3
Stat 212 [N] (GER) 3

Second Semester
FSHN 439 2
FSHN 440 3
FSHN 478 8
FSHN 485 2
Tier III Capstone (GER) 3

1 H D 205 recommended.
2 Math 205 recommended.
3 See advisor or Director of CUOGD.
4 Optional for second semester sophomore year; can be taken first semester of junior year if not following the CUOGD option.
5 Recommended that this requirement be fulfilled earlier.

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: 18 or 19 semester hours, 8 of which must be in 300-400-level courses. FSHN 120, 121, 130, 380, 480, plus H A 358 for hotel and restaurant administration majors or FSHN 281 and H A 359 for other majors.

Foods and Nutrition: 18 or 19 semester hours, 8 of which must be in 300-400-level courses. FSHN 120/121; 233, 330, 331; 420 or 430 are required. BC/BP 364 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 advisors in the selection of courses. This will ensure the courses selected will strengthen their education in areas needed for successfully completing an advanced degree program.

Students from related fields who wish to obtain an advanced degree in food science or nutrition are encouraged to apply as they may be well prepared for graduate studies. They would be required to take certain key courses required of undergraduates in addition to those needed for their graduate program.

Students who identify an interest in graduate work early in their studies are encouraged to contact the advisor no later than the end of the junior year so a course of study can be planned which schedules appropriate prerequisites to graduate courses and an introduction to research projects.

Description of Courses

Food Science and Human Nutrition

FSHN 120 Food Preparation 4 (3-3) Principles and methods of food preparation, including physical and chemical changes, quality, composition and use of foods.
130 [B] Nutrition for Living 3 Information related to the interaction of nutrients in the body and factors which govern nutrient requirements.

170 Food for Mankind 2 Interrelationships between people and their food supply; broad coverage of contemporary food-related topics.

200 Food Quality Assurance 3 (2-2) Methodology and design of quality assurance programs for analyzing microbial and chemical hazards and physical factors associated with food quality. Cooperative course taught by WSU, open to UI students (FST 201).

210 Professional Dietetics 1 Structure, function and history of the American Dietetic Association, and educational requirements and roles of registered dietitian.

210 The Science of Viticulture and Enology 2 Aspects of grapes and wines including fermentation and processing, physiology of alcohol and other components, history, general survey of wines of the US and the world, and evaluation methods; guest lecturers from the industry. Cooperative course taught by UI (FST 210), open to WSU students.

233 Human Nutrition 3 Rec Bio S or Chem coreq; or FSHN 314 or 315. Applying principles of chemistry, biology, and physiology to the study of nutrition emphasizing nutrient functions, nutrient requirements and impact of diet on health and disease.

281 Quantity Food Production Laboratory 1 (0-3) Prereq FSSHN 120, 121; c/l in H A 359. Recipe adjustment and costing; preparing and serving food in quantity.

301 Dairy Products 3 (3-3) Prereq Micro 101 or 301; org chem. Specialized techniques and practices of dairy product manufacturing and marketing. Field trip required. Cooperative course taught by WSU, open to UI students (FST 301).

302 Meat and Poultry Products 3 (2-3) Prereq Micro 101 or 301; org chem. Specialized techniques and practices of meat, poultry, and egg processing and marketing. Field trip required. Cooperative course taught by UI (FST 302), open to WSU students.

303 [M] Food Processing 3 (2-3) Prereq Micro 101 or 301; org chem. Specialized techniques and concepts of food fruit and vegetable processing and marketing. Field trip required. Cooperative course taught by WSU, open to UI students (FST 303).

304 Cereal Products 2 Prereq org chem. Technical principles relating to the production and commercial processing of legume and cereal foods. Field trip required. Cooperative course taught by UI (FST 304), open to WSU students.

305 Nutrition Related to Fitness and Sport 3 Same as Ath T 305.

330 [M] Physiological Nutrition 3 Prereq Chem 240; FSSHN 130 or 233; Zool 251, 315. Functional chemistry of nutrients in physiological systems and nutrient interactions.

331 Nutrition in the Human Life Cycle 3 Rec FSSHN 130 or 233. How growth and development impacts nutrient requirements throughout the life cycle. Cooperative course taught jointly by WSU and UI (FCS 476).

350 Dynamics of Dietetics 3 Rec FSSHN 130 or 233; FSSHN 120, 121. Dynamics of communication and counseling in nutritional care management and community nutrition in health and disease.

370 Food Policy 3 Food laws, industry standards and qualities of foods necessary for consumer acceptance; sanitation.

380 Management in Food Service Systems 3 Prereq FSSHN 281, H A 359. Management process, functions, inventory procurement and personnel management in food service.

401 Topics in Food Science and Human Nutrition V 1-3 May be repeated for credit; cumulative maximum 6 hours. Selected topics in food science and human nutrition. Credit not granted for both FSSHN 401 and 501.

402 Seminar in Food Science 1 May be repeated for credit; cumulative maximum 2 hours. Current literature and special reports.

403 Food Security 3 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 2 Prereq senior standing; BC/BP 364. Development of food products from concept to marketplace. Cooperative course taught by WSU, open to UI students (FST 407).

405 Eating Disorders 2 Examination of anorexia nervosa, bulimia nervosa, compulsive eating, obesity, and weight preoccupation; discussion of cultural and nutritional factors, family issues, and psycho-social implications, as well as preventive and therapeutic interventions. Cooperative course taught by UI (FCS 405), open to WSU students.

416 Food Microbiology 2 Prereq introductory microbiology. Purpose for enumeration, detection and identification of microorganisms in foods 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/l in FSSHN 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.

420 Comparative Foods 2 Rec organic chemistry. Experimental foods taught by means of demonstrations; chemical and physical principles in the preparation of foods.

422 Food Quality Evaluation 3 (2-3) Prereq statistics course. Techniques in evaluation of quality of foods by sensory and instrumental methods. Cooperative course taught by WSU, open to UI students (FST 422).

426 [M] Community Nutrition 3 Prereq FSSHN 330, 331; Rec FSSHN 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 FSSHN 233, senior standing. Basic skills and concepts for determining nutritional status of ambulatory adults using dietary intakes, dietary standards, anthropometric and biochemical measures.

430 Human Nutrition, Intermediary Metabolism 3 Prereq BC/BP 364, FSSHN 330, Zool 251. Biochemical roles of nutrients and processes of intermediary metabolism affecting man’s need for food; integration of biochemical pathways of major and minor nutrients; important nutritional deficiencies 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 FSSHN 430 or c/l. Nutrition principles applied to pathological conditions in people.

436 Nutrition Education 3 Prereq FSSHN 130, 233, or 331. Individual and group nutrition education programs; methods, resources, settings, and community structures for guiding change in nutritional behavior.

437 Medical Nutrition Therapy Laboratory 1 (0-3) Prereq c/l in FSSHN 435. Nutritional care planning; modified diets; nutritional assessment and dietary analysis in clinical care settings.

438 Readings in Foods and Nutrition 2 Prereq FSSHN 480 or c/l. Reports, discussions and reviews of recent scientific literature and developments in foods and food systems management.

439 Current Topics in Nutrition 2 Prereq FSSHN 430. Analysis of scientific, popular and legislative articles pertaining to topics of current interest in nutrition. Credit not granted for both FSSHN 439 and 539.

440 Advanced Medical Nutrition Therapy 3 By interview only. Advanced nutrition principles applied to pathological conditions in humans and principles of participation in delivery of nutritional care.

444 [T] Applied Nutrition in Health Science 3 Prereq biology, chemistry, sociology/psychology; completion of one Tier I and three Tier II courses. Application of current nutrition topics to community and clinical settings, integrating social science principles for individuals and groups.

450 Food Fermentations 3 (2-3) Prereq Chem 240, Micro 301; Rec BC/BP 364. Principles and procedures of fermentation of fruits and vegetables, meat products, and dairy products. Credit not granted for both FSSHN 450 and 550. Cooperative course taught by WSU, open to UI students (FST 450).

460 Food Chemistry 3 Prereq biochem, Chem 240; Rec BC/BP 364. 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 FSSHN 460 or c/l. Experiments related to the properties, reactions, and interactions of chemical components of foods. Cooperative course taught by WSU, open to UI students (FST 461).

462 Food Analysis 2 (2-2) Prereq microbiology, organic chemistry. Introductory food analysis; methods common to many food commodities. Cooperative course taught by WSU, open to UI students (FST 462).

470 Advanced Food Technology 3 Prereq FSSHN 416, 433 or c/l. Physical principles of food preservation and recent advances in food technology. Credit not granted for both FSSHN 470 and 570. Cooperative course taught by WSU, open to UI students (FST 470).

475 Supervised Practice in Dietetics 1 (0-9) By interview only. Students in CUOGD programs receive supervised practical experience each semester during the junior and senior years.

476 Supervised Practice in Dietetics II 3 (0-9) Prereq FSSHN 475. Students in CUOGD programs receive supervised practical experience each semester during the junior and senior years.

477 Supervised Practice in Dietetics III 8 (0-24) Prereq FSSHN 476. Students in CUOGD programs receive supervised practical experience each semester during the junior and senior years.
478 Supervised Practice in Dietetics IV 8 (0-24)
Prereq FSHN 477. Students in CUOGD pro-
grams receive supervised practical experience
each semester during the junior and senior years.

480 Management in Food Service Systems II 3
Prereq FSHN 380. Management theories,
communication, financial planning, and
equipment in food service systems.

485 Clinical Experience in Food Service Sys-
tems 2 (1-3) By interview only. Experience in
food systems management in clinical settings.

495 Internship in Food Science and Human Nu-
trition 2 May be repeated for credit; cumula-
tive maximum 4 hours. Prereq sophomore
standing. Students work full time in industrial
assignments with prior approval of advisor
and industrial supervisor. S, F grading.

498 Food Practicum V 1 (0-3) to 8 (0-24) May
be repeated for credit; cumulative maximum 8
hours. Prereq junior standing. Supervised ex-
periences of working in one or more food-re-
lated businesses, organizations, and agencies.
S, F grading.

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

501 Topics in Food Science and Human Nutrition
V 1-3 May be repeated for credit; cumulative
maximum 6 hours. Graduate-level counterpart
of FSHN 401; additional requirements. Credit
not granted for both FSHN 401 and 501.

504 Advanced Human Nutrition 4 Prereq gradu-
ate standing. Scientific basis of human nutri-
tion requirements, dietary allowances and as-
essment 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 biochem-
istry, food chemistry. Chemical, physical, and
toxicological properties of water, vitamins,
pigments, synthetic colors, minerals, miscel-
laneous food additives, and natural toxicants.
Cooperative course taught by WSU, open to
UI students (FST 510).

511 Food Carbohydrates, and Lipids 3 Rec bio-
chemistry, food chemistry, S. Occurrence, struc-
ture, 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 bio-
chemistry, 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 be-
vavioral theories and qualitative/quantitative
methods of data collection to behavioral nutri-
tion research. Cooperative course taught by
WSU, open to UI students (FCS 520).

521 Research Techniques in Nutrition 3 (1-6)
Rec 6 hours 300-400-level nutrition. Methods of
conducting field, applied and metabolic
studies in human nutrition.

522 Food Quality Evaluation 3 (2-3) Prereq 300-
400-level statistics course. Advanced studies of
psychophysical testing sensory and instrumen-
tal analysis of foods and multivariate statistical
analysis of sensory data. Cooperative course
taught by UI (FST 522), open to WSU students.

526 Advanced Community Nutrition 3 Rec 300-
400-level nutrition course; by interview only.
Components of community nutrition pro-
noms-needs assessment, planning, interven-
tion, evaluation; application of concepts to
case studies. Cooperative course taught by
WSU, open to UI students (FCS 526).

530 Prenatal, Infant and Child Nutrition 2
Prereq graduate standing. Nutrition of the
mother and fetus during pregnancy and of the
child from infancy through childhood.

531 Nutrition and Aging 2 Rec 300-400-level nu-
trition course; by interview only. Assessment,
evaluation, and treatment of nutritional prob-
lems of the aged.

533 Pathophysiology of Human Nutrition 3 Rec
BC/BP 364; FSHN 435; Zool 353. Protein,
fat, carbohydrate and other nutrient patho-
physiology in the development and treatment
of major human diseases.

538 Readings in Foods and Nutrition 2 Graduate-
level counterpart of FSHN 438; additional re-
quirements. Credit not granted for both FSHN
438 and 538.

539 Current Topics in Nutrition 2 Graduate-level
counterpart of FSHN 439; additional require-
ments. Credit not granted for both FSHN 439
and 539.

550 Food Fermentations 3 (2-3) Graduate-level
counterpart of FSHN 450; additional require-
ments. Credit not granted for both FSHN 450
and 550. Cooperative course taught by WSU,
open to UI students (FST 550).

561 Sports Nutrition 3 Prereq by interview only.
Macro nutrient and selected micronutrient uti-
zation during exercise and restoration after
feeding, dietary surveys of athletes, dietary er-
gerogic aids and discussion of the origins of
dietary recommendations for athletes. Coop-
erative course taught by UI (FCS 561), open
to WSU students.

570 Advanced Food Technology 3 Graduate-level
counterpart of FSHN 470; additional require-
ments. 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 Dieta-
tic Association requirements for registra-
tion eligibility. S, F grading.

583 Advances in Cereal Science and Technology
2 Prereq BC/BP 364. Background informa-
tion, review of recent advances; relation to
processing, and use properties and marketing.

587 Food Process Engineering Design 3 Same as
BSysE 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 Vari-
able credit. S, F grading.

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

800 Doctoral Research, Dissertation, and/or Ex-
amination Variable credit. S, F grading.

Department of Foreign Languages and Literatures

Associate Professor and Department Chair, B.
Frederick; Professor, Elwood Hartman; Associate
Professors, J. Brewer, Z. Dong, E. Gonzalez, J.
Grenier-Winther, R. Halverson, B. Ingemanson, J.
Labat, W. Roby, A. M. Rodriguez-Vivaldi; Assistant
Professors, K. Andersen, H. Gabriel, S. Hokanson, F.
Manco-Rohledo; Professors Emeriti, A. Cantera,
H. C. Kim, G. Maure.

Knowledge of languages in addition to English is essential in the modern world of rapid communica-
tion, international business, and multinational ven-
tures in science and technology. The Department of
Foreign Languages and Literatures attempts to help
students prepare themselves for full participation in
the world community by offering a wide range of
classes in language, literature, and culture.

The department’s curriculum is structured to allow
entry on any level. Students who begin language
study in the public schools or at another institution
may continue here at their level of competence with-
out loss of time. Specifically, the courses in this
department serve several purposes. They (1) enable
students to gain proficiency in their target language
and to appreciate the literature and culture of that lan-
guage; (2) give language training for careers which
require it; (3) provide a continuing service to students
of other departments by helping them to learn to read
foreign publications in their fields of interest; and (4)
prepare future foreign language teachers.

Two language laboratories containing audio, vi-
sual, and computer-mediated materials are available.
Recognizing the need for students to reinforce
in a practical way knowledge gained in the class-
room, 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,
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 Lan-
guages and Literatures (French, German, Russian,
and Spanish) and Master of Arts in Foreign Lan-
guages and Literatures (Spanish).

Degree Program Requirements

Honors students complete Honors Requirements
in place of General Education Requirements.

At least 40 of the total hours required for the
bachelor’s degree in this program must be in 300-
400-level courses.
A minimum of 30-36 hours beyond the 203 level (or the equivalent level in competence) in the major language is required for a Bachelor of Arts degree in Foreign Languages and Literatures. In addition, each major must present either (1) competence in a second foreign language, up to and including 304 or the equivalent level in competence, or (2) an approved university minor or teaching minor, or a second major in another field.

No course in which a C- or lower grade is earned will be counted toward the major or minor. Upper-division courses taken pass, fail may not be included for credit toward the major. No course may count for both the major and the minor.

 Majors and prospective majors are strongly encouraged to spend at least one semester abroad, living in the target culture and enhancing their fluency. Many accredited study abroad programs are available; students should work with their advisors in the selection of a program.

Of the 30-36 hours required for the major, a minimum of 15 must be taken in residence or in an approved study abroad program. Additionally, German majors must take a minimum of 6 hours at the 400 level in residence; Spanish majors must take at least two 3-hour Spanish literature courses; and French majors at least two 3-hour French literature courses in residence.

**FRENCH DEGREE PROGRAM (120 HOURS)**

Students may earn some equivalent credit in approved study abroad programs.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Fren 101, if necessary, or Elective1</td>
<td>4</td>
</tr>
<tr>
<td>Fren 315, 316, or 416</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fren 102, if necessary, or Elective1</td>
<td>4</td>
</tr>
<tr>
<td>Fren 315, 316, or 416</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective (GER)2</td>
<td>1</td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)2</td>
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</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Fren 203, if necessary, or Elective1</td>
<td>4</td>
</tr>
<tr>
<td>Elective1</td>
<td>3</td>
</tr>
</tbody>
</table>

<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 [B] Sciences (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Fren 304</td>
<td>4</td>
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<tr>
<td>Elective1</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>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Fren 307 or 407</td>
<td>3</td>
</tr>
<tr>
<td>Fren 320 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Physical [P] Sciences (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Elective1</td>
<td>3</td>
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<tr>
<td>Complete Writing Portfolio</td>
<td></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Fren 308 [M] or 408 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Fren 322</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective1</td>
<td>3</td>
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</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Fren 409</td>
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<tr>
<td>One from: Fren 306, 310, 407, or 408</td>
<td>3</td>
</tr>
<tr>
<td>One from: Fren 420, 421, 422, 423, 424, 425, or 427</td>
<td>3</td>
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<tr>
<td>Elective1</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>One from: Fren 306, 310, 407, or 408</td>
<td>3</td>
</tr>
<tr>
<td>One from: Fren 420, 421, 422, 423, 424, 425, or 427</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives1</td>
<td>9</td>
</tr>
</tbody>
</table>

1 Electives must be represented by competence in a second foreign language, up to and including 304, and an approved university minor or teaching minor, or a second major in another field.

2 Students may substitute one 4-credit Tier I Science for both the 3-credit Tier I Science and 1-credit Science Elective.

**GERMAN DEGREE PROGRAM (121 HOURS)**

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fren 304</td>
<td>4</td>
</tr>
<tr>
<td>Ger 101, if necessary, or Elective1</td>
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</tr>
<tr>
<td>Ger 310 or Ger 312</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Ger 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Ger 102, if necessary, or Elective1</td>
<td>4</td>
</tr>
<tr>
<td>Science Elective [B,P] (GER)2</td>
<td>1</td>
</tr>
<tr>
<td>Tier 1 Science [Q] (GER)2</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Electives must be represented by competence in a second foreign language, up to and including 304, and an approved university minor or teaching minor, or a second major in another field.

2 Students may substitute one 4-credit Tier I Science for both the 3-credit Tier I Science and 1-credit Science Elective.

**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] (GER) or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Ger 203</td>
<td>4</td>
</tr>
<tr>
<td>Ger 315</td>
<td>3</td>
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<tr>
<td>Physical [P] Sciences (GER)</td>
<td>4</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Ger 304</td>
<td>4</td>
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<tr>
<td>Ger 317</td>
<td>3</td>
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<tr>
<td>Elective1</td>
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**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Ger 310 [M] or Ger 312</td>
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<tr>
<td>Electives1</td>
<td>6</td>
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<tr>
<td>Complete Writing Portfolio</td>
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**Senior 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>Ger 320</td>
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<tr>
<td>One from: Ger 422, 423, 424, 425, 426, or 427 [M]</td>
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<tr>
<td>Electives1</td>
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</table>

**RUSSIAN DEGREE PROGRAM (120 HOURS)**

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Russ 304</td>
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<tr>
<td>Russ 315</td>
<td>3</td>
</tr>
<tr>
<td>Russ 317</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biological [B] Sciences (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Rus 102, if necessary, or Elective1</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
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**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical [P] Sciences (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Rus 203</td>
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<tr>
<td>Rus 317</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Rus 304</td>
<td>3</td>
</tr>
<tr>
<td>Rus 315</td>
<td>3</td>
</tr>
<tr>
<td>Rus 323</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Rus 311 [M]</td>
<td>3</td>
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<tr>
<td>Elective2</td>
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<tr>
<td>Complete Writing Portfolio</td>
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*Department of Foreign Languages and Literatures*
Second Semester Hours
Intercultural [I,G,K] (GER) 3
Rus 320 [M] 3
Electives1 9

Senior Year
First Semester Hours
One from: Rus 311, 320, 424, 426, or 430 3 or 4
Electives2 12

Second Semester Hours
One from: Rus 311, 320, 424, 426, or 430 3 or 4
Rus 499 1
Tier III Capstone (GER) 3
Electives2 9

1 Students may substitute one 4-credit Tier I Science for both the 3-credit Tier I Science and 1-credit Science Elective.
2 Electives must be represented by competence in a second foreign language, up to and including 304, and an approved university minor or teaching minor, or a second major in another field.

SPANISH DEGREE PROGRAM (120 HOURS)
Freshman Year
First Semester Hours
Arts & Humanities [H,G] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3 or 4
Span 101, if necessary, or Elective1 4

Second Semester Hours
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Science Elective [B,P] (GER)2 1
Span 102, if necessary, or Elective1 4
Tier I Science [Q] (GER)2 3

Sophomore Year
First Semester Hours
Biological [B] Sciences (GER) 4
Span 203, if necessary, or Elective1 4
Spanish Electives 3
Electives1 3

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Spanish Electives 3
Complete Writing Portfolio 6

Junior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Spanish Electives 5
Elective1 6

Second Semester Hours
Intercultural [I,G,K] (GER) 3
Spanish Electives 6
Electives1 6

Senior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Spanish Electives 3
Spanish Literature Elective3 3
Electives1 7

Second Semester Hours
Spanish Literature Elective1 3
Tier III Capstone (GER) 3
Electives1 9

1 The Spanish major consists of a minimum of 33 credits beyond the 203 level. A maximum of 18 credits may transfer towards the major from an approved study abroad program. Electives must be represented by competence in a second foreign language, up to and including 304, and an approved university minor or teaching minor, or a second major in another field.
2 Students may substitute one 4-credit Tier I Science for both the 3-credit Tier I Science and 1-credit Science Elective.
3 Taken in residence at WSU.

Minimal Requirements for Each Minor
To fulfill requirements for a minor in French, German, Russian, or Spanish, a student must present a minimum of 16 hours of course work in one language area. In addition, a minimum of 9 hours must be in the target language, and at least 3 of the target language hours must be taken at a WSU campus.

Minor in Danish
The student must earn a minimum of 16 total hours in the language area, which may include credit for advanced standing or transfer credit of courses through 204. Six hours of the course work in the language area above the 204 level must be taken in residence. These 6 hours must include at least 3 credit hours in the target language. Upper-division courses (300 and above) graded pass, fail may not be included for credit toward the minor. No course may be repeated for credit toward the minor. No course may count for both the major and the minor.

Minor in French Area Studies
Both options in the minor require a minimum of 23 credit hours, chosen according to the following schedule of studies.


*Students choosing Francophone Area Studies Option must take these courses.

Minor in German Area Studies
The minor in German Area Studies requires 18 hours, at least 9 of which must be 300-400-level including Ger 312, 317, Hist 468; 9 credits from: Hist 448, 449, 450; Pol S 472 (in courses covering a broader geographical area than Germany, Austria and Switzerland, the student is expected to ask the professor for a German Area Studies topic for the semester project or term paper); a student paper on German Area Studies-related topic (it may be a paper from one of the above courses) submitted to the German Area Studies faculty. (Also strongly recommended: Hist 102).

Minor in Japanese Studies
The minor in Japanese Studies requires 22 hours: Japn 101, 102, 303, 304, plus two courses from the following: Hist/Asia 374, 477; Phil/Asia 315; Pol S/Asia 436. A minimum of 4 hours of language, and 3 hours of electives must be taken at WSU.

Minor in Latin American Area Studies
The minor in Latin American Area Studies requires 20 hours, at least 8 of which are 300-400-level. Eight of the total hours must be in Spanish language courses. Courses may be chosen from: Ag Ec 420; Anth 331, 428; CAN 315, 255, 354; CropS 360; Econ 470, 472; Hist 230, 231, 331, 430, 432, 433, 434; Pol S 413, 435; Span 323, 416, 434, 435.

Minor in Russian Area Studies
The minor in Russian Area Studies requires 20 hours, at least 8 of which must be 300-400-level. Option 1: Russia through the 19th Century: Hist 462; Rus 101, 102, 315. Option 2: Russia in the 20th Century: Hist 463; Rus 101, 102, 317. Both options require two additional courses from: Econ 416, Hist 465, Pol S 102, 333, Rus 323. The required courses in the option not chosen may also serve as electives. Except for Rus 101 and 102, all courses are taught in English.

Minor in Scandinavian Area Studies
The minor in Scandinavian Area Studies requires 20 hours, at least 8 of which are 300-400-level including Hist 348; For L 300, Scand 101, 102, 323, 490, 499; Soc 391. Students may apply up to 10 hours of approved study abroad course work toward the minor.

INTERNATIONAL BUSINESS OPTION
The international business area studies curriculum combines a major in foreign languages with core courses in business. Complete details are available from the department. Through careful choice of electives and of courses meeting General Education Requirements, a student may obtain sufficient concentration to prepare for graduate study in several fields or to enhance a wide variety of career possibilities.

TEACHER-TRAINING PROGRAM
Students preparing to teach should consult the catalog listing of the Department of Teaching and Learning for certification requirements and for teaching majors and minors. Those who intend to major in foreign languages and education should begin the study of the major language in the first year and of the minor language, if any, not later than the beginning of the second year.

Preparation for Graduate Study
Students who contemplate graduate work in the Department of Foreign Languages and Literatures
should present an undergraduate degree similar to those described in the above schedule of studies. Complete details on graduate programs are available from the chair of the department.

Description of Courses

Foreign Languages and Literatures

For L

300 Studies in Foreign Languages V 1-4 May be repeated for credit. Languages not currently a part of the curriculum may be offered on demand. Cooperative course taught by WSU, open to UI students (FL 300). 3

315 Topics in Canadian Studies 1 May be repeated for credit; cumulative maximum 5 hours. Same as Hist 315.

340 Methods of Teaching Foreign Languages 3 Prereq two years foreign language. Survey of current methodology with emphasis on practical application in the classroom.

341 Practicum in CAI for the Foreign Language Classroom 1 May be repeated for credit; cumulative maximum 3 hours. Prereq 304-level foreign language course; Rec For L 340. Practicum in Computer-Assisted Instruction (CAI) in foreign language classes, to train students working toward a career in second language instruction.

350 [S] Speech, Thought, and Culture 3 Same as Anth 350.

400 Special Topics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq GenEd 110 or 111. Interdisciplinary study of foreign languages, literature, or culture.

422 [T] 20th-Century Issues in German and Latin American Film and Literature 3 Prereq completion of one Tier I and three Tier II courses. Comparison of film adaptations with their literary inspirations to give students an understanding of how cultures respond to contemporary conditions.

444 Instructional Technology for Foreign Language Learning 3 Prereq For L 340. The use of technology in the foreign language classroom, hands-on experience with equipment and multi-media materials. Credit not granted for both For L 444 and 544.

450 Descriptive Linguistics 3 Same as Anth 450.

474 Secondary School Foreign Language Methods 3 Prereq two years foreign language. Specific methods, research, curricula, and media in teaching secondary school foreign language. Cooperative course taught by UI (Ed 474), open to WSU students.

495 Cooperative Education Internship V 2-6 May be repeated for credit; cumulative maximum 6 hours. Off-campus cooperative education internship with business, industry, or government unit. S, F grading.

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

544 Instructional Technology for Foreign Language Learning 3 Graduate-level counterpart of For L 444; additional requirements. Credit not granted for both For L 444 and 544.

597 Seminar in Scholarly Methodology 2 Bibliography and formal aspects of scholarly writing; general introduction to literary criticism.

600 Special Projects or Independent Study Variable credit. S, F grading.
Department of Foreign Languages and Literatures


409 Pronunciation and Phonetics 2 Prereq Fren 307 or 308. A theoretical and practical approach to French phonetics.

416 Seminar in French Civilization 3 Prereq Fren 307, 308, 320 or 322. May be repeated for credit; cumulative maximum 6 hours.

418 Topics in French Civilization—Study Abroad V 1-4

420 Medieval French Literature 3 Prereq Fren 320 or 322. In-depth study of selected works by medieval authors, including, among others, Chrétien de Troyes, Marie de France, François Villon.

421 French Literature of the Renaissance 3 Prereq Fren 320 or 322. In-depth study of selected works from the late 14th through the 16th centuries, including poetry, essays, stories, and philosophical texts.

422 Literature of the Classical Period 3 Prereq Fren 320 or 322. Authors and works from the 17th century, including Corneille, Racine, and Molière.

423 Literature of the Enlightenment 3 Prereq Fren 320 or 322. Authors and works from the 18th century, including Voltaire, Diderot, and Rousseau.

424 French Literature of the 19th Century 3 Prereq Fren 320 or 322. Authors and works from the 19th century, including Stendhal, Balzac, Zola, and Sartre.

426 Russian Literature of the Soviet Period 3 Prereq Rus 320. Selected works by writers from the former USSR.

427 Seminar in French Language or Literature 3 May be repeated for credit. Prereq Fren 320 or 322.

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

German

German Ger

101 First Semester 4 Fundamentals of speaking, reading, and writing. 1

102 Second Semester 4 Prereq Ger 101. Continued development of basic skills in speaking, reading, and writing. 1

203 Third Semester 4 Prereq Ger 102. Grammar review and further development of speaking, reading, and writing skills. 1

304 Intermediate 4 Prereq Ger 203. Continued practice in spoken and written language; selected texts in a cultural context. 1

305 Conversation 1 Prereq Ger 203. May be repeated for credit; cumulative maximum 4 hours. Conversation practice in small groups. S, F grading. 1

310 German for Professionals 3 Prereq Ger 304. Applied language skills useful in a professional or business environment.

312 Composition and Conversation 3 Prereq Ger 304. Development of proficiency in speaking and writing skills; emphasis on fluency and accuracy. 1

315 [H] Germanic Civilization 3 The cultural development of the Germanic peoples to 1750; readings, lectures, and discussions in English.

1Not open to native speakers except with permission. Bilingual speakers should consult departmental guidelines for proper placement.

Italian

Italian Ital

101 First Semester—Study Abroad V 3-6 Introductory Italian. (Siena) 1

102 Second Semester—Study Abroad V 3-6 Prereq Ital 101. Continuation of Ital 101. (Siena). 1

203 Third Semester—Study Abroad V 3-6 Prereq Ital 102. Continuation of Ital 102; grammar review, further development of speaking, reading, and writing skills. (Siena). 1

318 Topics—Study Abroad 5 May be repeated for credit; cumulative maximum 6 hours. (Siena).

Japanese

Japanese Japn

101 First Semester 4 Fundamentals of speaking, reading, and writing. Cooperative course taught by WSU, open to UI students (Japn 101). 1

102 Second Semester 4 Prereq Japn 101. Continuation of Japn 101. Cooperative course taught by WSU, open to UI students (Japn 102). 1

303 Third Semester 4 Prereq Japn 102 Conversation and reading of selected texts. Cooperative course taught by WSU, open to UI students (Japn 201). 1

304 Intermediate 4 Prereq Japn 303. Continued practice in spoken and written language; selected texts in a cultural context. Cooperative course taught by WSU, open to UI students (Japn 202). 1

317 [S] Contemporary German Culture and Society 3 Lectures, readings, and discussions in English; current social, political, economic, and cultural trends in Germany.

318 Topics in German Civilization Study Abroad 3 (Cologne)

320 [M] Introduction to German Literature 3 Prereq Ger 304. Reading in context; modern German prose.

407 Advanced Practice in Speaking Proficiency 3 Prereq Ger 310 or 312. Development of speaking skills in German to an advanced level.

412 [M] Advanced Composition and Conversation 3 Prereq Ger 312. Continued development of proficiency speaking and writing skills; emphasis on fluency and accuracy. 1

422 [M] 18th Century German Studies; Topics 3 Prereq Ger 310, 312, or 320. The works of Lessing, young Goethe, young Schiller, and others.

423 [M] German Literature of the Classical Periods 3 Prereq Ger 320 or 322. Dramatic, lyric, and prose texts by Goethe, Schiller and others in the period 1780 - 1800.

424 [M] German Literature of the Early 19th Century 3 Prereq Ger 320 or 322. Dramatic, lyric and prose texts of the Romantics, Junges Deutschland and the early Realists.

425 [M] German Literature of the Late 19th Century 3 Prereq Ger 320 or 322. Dramatic, lyric and prose texts of the Realists and the Naturalists.

426 [M] 20th Century German Studies: Topics 3 Prereq Ger 310, 312, or 320. Dramatic, lyric and prose texts of the Impressionists, Expressionists, and Dadaists.

472 Seminar in German Language or Literatures 3 May be repeated for credit. Prereq Ger 320 or 322.


203 Third Semester 4 Prereq Rus 102. Grammar review and further development of speaking, reading, and writing skills. Cooperative course taught by WSU, open to UI students (Russ 303). 1

304 Intermediate 4 Prereq Rus 203. Continued practice in spoken and written language; selected texts in a cultural context. Cooperative course taught by WSU, open to UI students (Russ 304). 1

305 Conversation 1 (0-3) May be repeated for credit; cumulative maximum 4 hours. Prereq Rus 304. Conversation practice in small groups. Cooperative course taught by WSU, open to UI students (Russ 305). 1


311 [M] Seminar in Russian Language 3 Prereq Rus 304. May be repeated for credit; cumulative maximum 6 hours. Application and elaboration of the basic syntactic and stylistic principles of the language. Taught in Russian.

315 Russian Civilization 3 Russian culture to 1917; readings, lectures, and discussions in English.

317 [G] Contemporary Russian Culture and Society 3 Readings, lectures, and discussions in English; current cultural and social trends in the former USSR.

318 Topics in Russian Study Abroad V 4-6 Prereq Rus 304. Topics and language study abroad in Vladivostok.

320 [M] Topics in Russian Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Rus 304. Reading course shifting emphasis from language to literature.

323 [H] Masterpieces of Russian Literature in Translation 3 The masterpieces of the great Russian and Soviet writers of the 19th and 20th centuries. Taught in English.

360 [H] Russian Film 3 Russian daily life, historical events, and values in representative samples of Russian film.

424 Seminar in Russian Literature Prereq Rus 320. Selected works from the 19th century. Taught in Russian.

425 Seminar in Russian Literature 3 Prereq Rus 311 or 320. Advanced practice in reading Russian stories and poems, discussing them, and examining their reflection of Russian life.

430 [H] St. Petersburg 3 Prereq completion of one Tier I and three Tier II courses. The image and role of St. Petersburg in Russian and world classics in literature, art, music, and film.

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

Scandinavian

Scand

101 First Semester Danish 4 Introduction to Danish; fundamentals of speaking, reading, and writing. Cooperative course taught by WSU, open to UI students (Scand 101).¹

102 Second Semester Danish 4 Prereq Scand 101. Intermediate Danish; continued development of the basic communicative skills in speaking, reading, and writing. Cooperative course taught by WSU, open to UI students (Scand 102).¹

323 [H] Masterpieces of Scandinavian Literature in Translation 3 May be repeated for credit; cumulative maximum 6 hours. Topics in Scandinavian literature from the Icelandic sagas to the present. Cooperative course taught by WSU, open to UI students (Scand 323).

490 Topics in Scandinavian Studies V 1-3 May be repeated for credit.

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

Spanish

Span

101 First Semester 4 Fundamentals of speaking, reading, and writing.¹

102 Second Semester 4 Prereq Span 101. Continued development of basic skills in speaking, reading, and writing.¹

130 Beginning Spanish—Study Abroad V 1-12 Equivalent to Span 101, 102, 203.³

203 Third Semester 4 Prereq Span 102. Further development of speaking, reading, and writing skills.¹

304 Intermediate 4 Prereq Span 203. Continued practice in spoken and written language; selected texts in a cultural context.¹

305 Spanish Conversation 1 May be repeated for credit; cumulative maximum 4 hours. Prereq Span 304. Conversation practice in small groups, S, F grading.¹

306 Spanish for Reading Proficiency 2 Prereq Span 203. Vocabulary building, contrastive English-Spanish grammar, development of skills to increase reading speed and fluency.

307 Speaking Proficiency 3 Prereq Span 304. Systematic development of speaking; pronunciation of basic Spanish sounds.¹


310 Spanish for the Professions 3 Prereq Span 203. Special topics in language and culture for the professions.

311 Advanced Grammar 3 Prereq Span 304. Recommended for those intending to take the upper-level composition or conversation courses.

312 Spanish for Native Speakers 4 Prereq fluency in Spanish. Readings on Spanish-speaking communities; information and corrective feedback for native speakers of Spanish, grammatical emphasis in writing and speaking.¹

315 [H] Hispanic Civilization 3 Spanish culture with lectures and readings in English.

316 [G] Hispanic American Culture 3 Contemporary social, political, and cultural issues. Taught in English.


391 Hispanic Film 3 Genre, structure and style of representative fiction and nonfiction films of Spain and Latin America. Cooperative course taught by UI (Span 391), open to WSU students.

407 Advanced Practice in Speaking Proficiency 3 Prereq Span 307. Systematic development of oral skills on the advanced level, including delivery of brief formal presentations involving specialized vocabulary.¹

408 [M] Advanced Composition 2 Prereq Span 308. Development of advanced proficiency in writing.¹

424 Spanish Literature of the 19th Century 3 Prereq Span 320. Drama, poetry, the short story, the costume sketch, and novel in 19th century Spain.

425 Spanish Literature of the 20th Century 3 Prereq Span 320. Reading and discussion of representative works by Peninsular writers of the 20th century.

427 Seminar in Spanish Language or Literature 3 May be repeated for credit. Prereq Span 320.


435 Spanish American Literature of the 20th Century 3 Prereq Span 320. Reading and discussion of representative works by Spanish American writers of the 19th century.

437 Seminar on Hispanic Literature and Culture 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Span 320. Seminar on topics of Spanish and/or Spanish American literatures and cultures.

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

520 Medieval Literature 3 Selected works.

521 Cervantes 3 Quixote plus selected critical works.

522 Seminar in Golden Age Literature 3 Reading and discussion of representative works of the Spanish Golden Age.

524 Topics in Nineteenth-Century Spanish Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Selected works and topics.

525 Topics in Twentieth-Century Spanish Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Selected works and topics.

527 Seminar in Spanish Literature 3 May be repeated for credit.

533 Seminar in Colonial Spanish American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Seminar on conquest and colonial literature in Hispanic America.

534 Seminar in Nineteenth-Century Spanish American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Study of nineteenth-century Spanish American literature.

535 Seminar in Twentieth-Century Spanish American Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Study of twentieth-century Spanish American literature and culture.

536 Seminar in Spanish American Literature 3 May be repeated for credit.

540 Beginning Instructional Practicum 2 Prereq graduate standing. An introduction to foreign language instruction for beginning teaching assistants.

542 Advanced Instructional Practicum 1 May be repeated for credit; cumulative maximum 4 hours. Supervised practical experience in foreign language teaching. S, F grading.

544 Research and Methods of Teaching Foreign Languages 3 Prereq graduate standing. Current research and theory-based methods in foreign language pedagogy.

547 Special Topics in Hispanic Studies 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Special interdisciplinary topics in Hispanic studies.

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

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

General Education Courses

Description of Courses

General Education

GenEd

104 Freshman Seminar 2 Introduction to college disciplinary and interdisciplinary discourse and to academic culture, including its values, procedures, and techniques. Credit not granted for more than one of GenEd 104, 105, U H 105.

105 Residential Freshman Seminar 2 Prereq residency in participating university-approved housing. Introduction to college disciplinary and interdisciplinary discourse and to academic culture, including its values, procedures, and techniques. Credit not granted for more than one of GenEd 104, 105, U H 105.

110 [A] World Civilizations I 3 Integrated study of social, political, and philosophical/religious systems in early civilizations, with an introduction to distinctive art forms.

111 [A] World Civilizations II 3 Integrated study of social, political, and philosophical religious systems in modern civilizations, with an introduction to distinctive art forms of the major world civilizations.

200 [I] Studying World Civilizations Abroad V 1-3 May be repeated for credit; cumulative maximum 3 hours. Prereq GenEd 110 or 111 or c//. Study-abroad experience for general education students to introduce them to the cultures they have studied in GenEd 110 and/or 111.
General Education Courses

300 (Univ) Accessing Information for Research
   1 Effective research strategies in the disciplines, including emerging information resources, such as Internet.

302 Advanced Writing Tutorial V 1(0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 5 hours. Prereq permission of Writing Lab Director/Writing Assessment Coordinator. Assigned tutorials in the WSU Writing Lab. S, F grading.

General Studies Program
General studies is for students who have varied interests that may cut across the usual departmental boundaries and who wish to play a major role in deciding on a suitable curriculum of study. The student earns a Bachelor of Arts in Humanities, Bachelor of Arts in Social Sciences, Bachelor of Science, or Bachelor of Liberal Arts degree depending upon the program selected. The degree is not identified with a 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.

Honors students complete Honors Requirements in place of General Education Requirements.

Description of Course

General Studies
GenSt
400 General Studies Portfolio I Prereq senior standing. Evaluating one’s educational experience and presenting that evaluation in written form. S, F grading.

Biological, Mathematical, and Physical Sciences

B. Lentz, Coordinator
This division of general studies is for students who are interested in interdisciplinary programs in science or mathematics which offer broader options in course selections than are possible within single departments. Students who wish to earn a Bachelor of Science degree will devise an approved, coherent program of study with the coordinator 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—Major/Minor Concentration

Minor concentration: a minimum of 15 semester credits, including at least 6 300-400-level credits, must be completed in another academic department, program or area published in the catalog with a minimum 2.0 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 including at least 9 credits in each department or program and 21 300-400-level hours must be completed with at least a 2.0 g.p.a. in these courses. The related areas in general biological sciences (Gen B) include biology, biochemistry, botany, genomics and cell biology, microbiology, zoology and approved biology-based courses in agriculture. Students who complete a Plan B curriculum receive a Bachelor of Science degree with a major concentration in general biological sciences (Gen B).

Plan C—Three Related Areas in Physical Sciences

A combination of physical sciences and mathematics courses of at least 39 credits in three or more departments or programs including at least 9 credits in each department or program and 21 300-400-level hours must be completed with at least a 2.0 g.p.a. in these courses. The related areas in mathematical and physical sciences include chemistry, computer science, geology, mathematics, pharmacy, physics, and math/science-based engineering courses. Students who complete a Plan C curriculum must be completed in another academic department, program or area published in the catalog with a minimum 2.0 minor concentration g.p.a.

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 Geography is a prerequisite for 300-400-level geology courses.)

General Mathematics (Gen M): Three semesters of calculus and linear algebra.

Classical Studies

R. S. Williams, Coordinator
The classical studies option is designed for students who wish to obtain a broad understanding of the ancient Greek and Roman foundation of modern western civilization. Greek and Latin language study is an important part of the program in order to aid comprehension of classical thought, literature, and history. This major should be of great value for students contemplating careers in medicine, law, and business or graduate work in history, archaeology, or literature. It is not suitable for those who wish to teach Latin or Greek or enter graduate school in classics unless additional language study is undertaken. The approach is interdisciplinary and flexible to allow students to pursue varied interests within a broad field. Students who major in classical studies will earn a Bachelor of Arts in Humanities degree.

GENERAL STUDIES CLASSIC STUDIES DEGREE PROGRAM (120 HOURS)

Each student must complete (1) the General Education Requirements and any additional requirements of the College of Sciences and Arts, (2) 120 semester hours which include 40 or more at the 300-400 level, (3) a second year (or its equivalent) of Greek or Latin language, which may be completed at the University of Idaho.

Freshman Year

First Semester
   First Semester
   Engl 101 [W] (GER) 3
   GenEd 110 [A] (GER) 3
   Math Proficiency [N] (GER) 3
   Science Elective1 1
   Tier I Science [Q] (GER) 3
   Second Semester
   Biological Sciences [B] (GER) 4
   GenEd 111 [A] (GER) 3

Sophomore Year

First Semester
   Clas Language Elective2 4
   Hum 101 [H] (GER) 3
   Physical Sciences [P] (GER) 4
   Social Sciences [S,K] (GER) 3
   Second Semester
   Clas Language Elective2 4
   Hist 341 [H] (GER) 3
   Hum 103 [H] (GER) 3
   Phil 290 [H] (GER) 3
   Approved 300-400-level Elective3 3

Junior Year

First Semester
   Clas Language Elective2 4
   Hist 340 [H] (GER) 3
   Approved 300-400-level Elective3 3
   300-400-level Electives 6
   Complete Writing Portfolio
   Second Semester
   Intercultural [L,G,K] (GER) 3
   Approved 300-400-level Electives1 6
   300-400-level Electives 6

Senior Year

First Semester
   Approved 300-400-level Electives1 6
   300-400-level Electives 6
   Electives 3
   Second Semester
   Tier III Capstone (GER) 3
   Electives 11

1 Students may substitute one 4-credit Tier I Science for both the 3-credit Tier I Science and 1-credit Science Elective.
2 Students must complete a second year (or its equivalent) of Greek or Latin language, which may be completed at the University of Idaho.

Additional Greek and Latin beyond the basic language requirements, appropriate seminars, spe-
cial 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**

*B. Lentz, 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—Major/Minor Concentration**

Major 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 major concentration g.p.a. The major (Gen H or Gen S) and the degree will depend on the major concentration.

Minor concentration: a minimum of 15 semester credits, including at least 6 300-400-level credits, must be completed in another academic department, program or area published in the catalog with a minimum 2.00 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 2.00 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.

**Liberal Arts**

*J. Dollhausen, 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 DEGREE PROGRAM (120 HOURS)**

**Freshman Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Engl 101 [W]</td>
<td>(GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A]</td>
<td>(GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency</td>
<td>N</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tier 1 Science [Q]</td>
<td>(GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>(GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B]</td>
<td>(GER)</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency [C,W]</td>
<td>(GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A]</td>
<td>(GER)</td>
<td>3</td>
</tr>
<tr>
<td>Linguistics Elective</td>
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**Sophomore Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linguistics Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Math, Cpt S, or Stat Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Physical Sciences [P]</td>
<td>(GER)</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences [S,K]</td>
<td>(GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>(GER)</td>
<td>3</td>
</tr>
<tr>
<td>Linguistics Elective</td>
<td>6</td>
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<tr>
<td>Phil Elective</td>
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<td></td>
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<tr>
<td>Elective</td>
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</table>

**Junior Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>(GER)</td>
<td>3</td>
</tr>
<tr>
<td>Linguistics Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>300-level Foreign Language Elective</td>
<td>3</td>
<td></td>
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<tr>
<td>Emphasis Elective</td>
<td>3</td>
<td></td>
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<tr>
<td>Elective</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercultural [I,G,K]</td>
<td>(GER)</td>
<td>3</td>
</tr>
<tr>
<td>Linguistics Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>300-level Foreign Language Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Emphasis Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
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</tbody>
</table>

**Senior Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linguistics Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>300-400-level Electives</td>
<td>12</td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier III Capstone</td>
<td>(GER)</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Electives</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

1 Students may substitute one four-credit Tier I Science for both the three-credit Tier I Science and one-credit Science Elective.
2 Students must take 21 hours or more, including at least one historical course: Ath 350, 450, 499; Engl 256, 354, 458, 499.
3 Students must take 3-12 hours depending upon special emphasis: Cpt S 150, 405; Math 107, 171, 172, 205, 212; Stat 360.
4 Students must take 3-12 hours depending upon emphasis: Phil 201, 401, 410.
5 Students must take 6-18 hours depending on special emphasis. The 6-hour minimum, if elected, must be at the 300-level or higher.
6 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 DEGREE PROGRAM (120 HOURS)**

**Freshman Year**

**First Semester**

Engl 101 [W] (GER) 3
For L Elective 4
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Science Elective1 1
Tier I Science [Q] (GER)1 3

**Second Semester**

Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Communication Proficiency [C,W] (GER) 3
For L Elective 4
GenEd 111 [A] (GER) 3

**Sophomore Year**

**First Semester**

Arth 303 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
For L Elective 4
Physical Sciences [P] (GER) 4
Social Sciences [S,K] (GER) 3

**Second Semester**

For L Elective 4
Intercultural [L,G,K] (GER) 3
Phil 207 3
Soc 341 [S] (GER) 3
Tier III Capstone (GER) 3
Complete Writing Portfolio

**JUNIOR & SENIOR YEAR—CHOICE 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.


Students may substitute one 4-credit Tier I Science for both the 3-credit Tier I Science and 1-credit Science Elective.

**Teacher-Training**

Students who are preparing to teach at the secondary level may in some cases receive their degrees in general studies. Such students must fulfill the requirements for graduation of the College of Sciences or College of Liberal Arts. There are no further requirements if they complete their teaching major and minor and fulfill all the requirements for teaching certification. The degree awarded is Bachelor of Arts in Humanities, Bachelor of Arts in Social Sciences, or Bachelor of Science according to the endorsement granted in the student’s major teaching field.

The secondary teaching major in physical science will receive a Bachelor of Science degree.

For further information on teaching certification, refer to the Department of Teaching and Learning.

**Department of Genetics and Cell Biology**


The Department of Genetics and Cell Biology offers graduate study and research programs leading to the degrees of Master of Science and Doctor of Philosophy (Genetics and Cell Biology) under the College of Sciences.

In addition to the above, the department offers a study program 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, of which Genetics and Cell Biology is also a member; and option 2: Molecular Genetics and Cell Biotechnology, offered under the College of Sciences.

The Genetics and Cell Biology Department also participates in the interdisciplinary molecular biology minor and offers minors in genetics and cell biology and pre-genetic counseling.

Students who receive a Bachelor of Science in Genetics and Cell Biology will be prepared to undertake graduate study leading to the Master’s and PhD degrees in a variety of areas in agriculture and basic science. They also will be prepared to work as high-level technicians in the biotechnology industry or in university and government laboratories.

**Minor in Genetics and Cell Biology**

Requirements: 16 hours in GenCB courses at the 300-400-level, including GenCB 301 and 450. A grade of C or better is required in all course work for the minor.

**Degree Program Requirements**

Honors students complete Honors Requirements in place of General Education Requirements.

The following is a list of the departmental requirements for the undergraduate degree in genetics and cell biology. Total of 120 credits required for graduation: Core, 63-72; Option, 15-18. Other: General Education; Electives, 13-24.

**APPLIED GENETICS AND CELL BIOLOGY DEGREE PROGRAM (123 HOURS)**

College of Agriculture and Home Economics with a focus on either plant or animal biotechnology.

**Freshman Year**

**First Semester**

Bio S 103 [B] (GER) 4
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 107 3

**Second Semester Hours**
Ag Ec 201 [S] (GER) 3
Bio S 104 [B] (GER) 4
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
Math 108 2

**Sophomore Year**

**First Semester Hours**
Chem 240; or Chem 340, 341, 342 4-8
GenCB 301 4
Math 140 [N] or 171 [N] (GER) 4

**Second Semester Hours**
Arts & Humanities [H,G] (GER) 3
BC/BP 364 4
Communication Proficiency [C,W] (GER) 3
Micro 301 4
Soc 331[S] (GER) or Soc 430 [K] (GER) 3

**Junior Year**

**First Semester Hours**
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
One from: GenCB 462, 502 2 or 3
Phys 101 [P] (GER) 4
Two from: BC/BP 366, GenCB 402, 452, Micro 464 3-6
Complete Writing Portfolio

**Second Semester Hours**
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Degree Program Course¹ 3 or 4
GenCB 450 3
Phys 102 [P] (GER) 4
Electives 3

**Senior Year**

**First Semester Hours**
Degree Program Courses² 9-12
Intercultural [I,G,K] (GER) 3
Electives 3

**Second Semester Hours**
Degree Program Courses³ 3 or 4
GenCB 498 [M] 2
Tier III Capstone (GER) 3
Electives 10

¹ For Animal Biotechnology, take A S 330; for Plant Biotechnology, take Bot 320.
² For Animal Biotechnology, take one from: A S 313 or 314; one from: A S 440 or Zool 353; and one from: V An 308 or Zool 324. For Plant Biotechnology, take one from: CropS 411 or Hort 416; and two from: CropS 445, GenCB 325, Hort 251, P P 429.
³ For Animal Biotechnology, take A S 448; for Plant Biotechnology, take Bot 410.

MOLECULAR GENETICS AND CELL BIOTECHNOLOGY DEGREE PROGRAM (120 HOURS)  

College of Sciences

**Freshman Year**

**First Semester Hours**
Bio S 103 [B] (GER) 4
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3

**Second Semester Hours**
Bio S 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 Hours**
Arts & Humanities [H,G] (GER) 3
Chem 240; or 340, 341, 342 4-8
Communication Proficiency [C,W] (GER) 3
Phys 101 [P] or 201 [P] (GER) 4

**Second Semester Hours**
BC/BP 364 4
GenCB 301 4
Phys 102 [P] or 202 [P] (GER) 4
Social Sciences [S,K] (GER) 3

**Junior Year**

**First Semester Hours**
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
GenCB 325 or 488 [M] 3
Math 172, Stat 212 [N] (GER), or 412 3 or 4
Complete Writing Portfolio

**Second Semester Hours**
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Intercultural [I,G,K] (GER) 3
Electives 3 or 4

**Senior Year**

**First Semester Hours**
GenCB 320 2
Laboratory Courses² 6
Electives 9

**Second Semester Hours**
Biological Science Electives¹ 3
GenCB 450 3
Tier III Capstone (GER) 3
Electives 3-5

² Laboratory courses: GenCB 402 [M]; 452; Required independent lab project E Mic 586/587 and GenCB 496 [M], or GenCB 499 and 496; additional laboratory courses from the following are recommended: BC/BP 366, 378, GenCB 499, Micro 413 [M], 415 [M], 464.

**Minors in Pre-Genetic Counseling**


**Minor in Molecular Biology**

Students who complete the following courses may receive a Molecular Biology minor: BC/BP 364, GenCB 301, 450, Micro 301; BC/BP 366, GenCB 402, or Micro 464; BC/BP 463, GenCB 502, or Micro 462.

**Description of Courses**

**Genetics and Cell Biology**

GenCB

150 [Q] Genetics and Society 3 (2-3) Genetics as it relates to current issues; history of genetics, genetic engineering, medical, agricultural, and population genetics and ecology.

301 General Genetics 4 Prereq Bio S 104; two semesters Chem. Principles of modern and classical genetics.

312 [M] Cell and Molecular Laboratory 2 (0-6) Prereq BC/BP 364, GenCB 301, or c/f; one semester organic chemistry. Laboratory methods in cell biology, genetics and molecular biology.

325 Plant Biotechnology 3 Same as Bot 325.

402 [M] General Genetics Laboratory 3 (1-6) Prereq GenCB 301. Basic principles of modern and classical genetics utilizing several species.

405 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Same as Hort 405/505. Credit not granted for both GenCB 405 and 505.

420 Fundamentals of Molecular Genetics 3 Prereq BC/BP 364, GenCB 301. Genetics and molecular biology emphasizing eukaryotic topics and including prokaryotic techniques.

430 Human Genetics 3 Prereq GenCB 301. Exploration of individual and population genetics leading to critical discussion of current social, medical, and scientific issues.

450 Introduction to Cell Biology 3 Prereq BC/BP 364 or GenCB 301. Cellular structure and function.

452 [M] Cell Biology Laboratory 2 (1-3) or 3 (1-6) Prereq cell biology or physiology. Experiments and techniques in cell biology, and physiology.

453 Directed Problems in Cell Biology 1 Prereq BC/BP 364 or GenCB 301; c/f in GenCB 450. Adjunct course to GenCB 450.


462 Microbial Genetics 3 Same as Micro 462.

488 [M] Perspectives in Biotechnology 3 Same as A S 488. Credit not granted for both GenCB 488 and 588.

499 [M] Genetics and Cell Biology Seminar 2 May be repeated for credit. Prereq GenCB 301. Classical literature in genetics and cell biology; current topics discussed by faculty experts in the field.

496 [M] Special Problems and Reports V 2-4 Prereq GenCB 301. Independent project with written progress report and final report required. S, F grading.

499 [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.

499 Special Problems V 1-4 May be repeated for credit. S, F grading.
Department of Genetics and Cell Biology

502 Eukaryotic Molecular Genetics 2 Prereq BC/BP 364, GenCB 301. Gene control and organization; lower eukaryotic and cell culture genetics.

504 Plant Transmission Genetics 3 Same as Crops 504.

505 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Graduate-level counterpart of GenCB 405; additional requirements. Credit not granted for both GenCB 405 and 505.

511 Introduction to Population Genetics 3 Prereq GenCB 301; Stat course. Survey of basic population and quantitative genetics. Cooperative course taught by WSU, open to UI students (For 511/Gen 505).

512 Molecular Population Genetics and Evolution 2 Prereq GenCB 511. Evolutionary change of molecular sequences; genetic distance and phylogeny; genomic evolution.

516 Fish Genetics 2 Prereq GenCB 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).

520 Conservation Genetics 2 Prereq GenCB 301. Genetic studies and approaches relevant to efforts to conserve threatened and endangered populations of organisms.

521 Quantitative Genetics 2 Prereq GenCB 511. Fundamentals of quantitative genetics; evolutionary quantitative genetics.

534 Fungal Genetics 4 (3-3) Same as Pl Pi 534.

535 Molecular Genetics of Plants and Pathogen Interactions 2 Same as Pl Pi 535.

536 Plant Genetic Engineering Laboratory 2 (0-6) Same as Crops 536.

550 Cell Biology 3 Prereq BC/BP 364; GenCB 301. Cell structure and movement, organelle structure and genome, and cell signal processing. Cooperative course taught by WSU, open to UI students (Genet/PlSc 550).

556 Cell Biotechnology V1-1 Prereq BC/BP 364; GenCB 450. Contemporary cell biotechnology; techniques including: cell culture, immunology (including preparation and use of monoclonal antibodies), nucleic acid hybridization (including in situ).

558 Molecular and Cellular Reproduction 3 (2-2) Course will review the state of the art concepts of the molecular, cellular, and physiological aspects of mammalian reproduction.

560 Molecular Genetics 3 Prereq BC/BP 563; GenCB 301, 502, or Micro 301. Biochemical description of genetic processes in microorganisms.

565 Molecular Biology I 1 Same as BC/BP 565.

566 Molecular Biology II 3 Prereq BC/BP 364; GenCB 301. Gene expression and regulation in prokaryotes and eukaryotes, including transcription, RNA processing, and translation; chromatin structure; DNA repair.

569 Research Proposal 1 May be repeated for credit; cumulative maximum 2 hours. Written and oral presentation of a research paper.

570 Plant Molecular Genetics 3 Prereq GenCB 502. 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/PlSc 571).

572 Fundamentals of Oncology 3 Same as PT 572.

573 Cellular and Molecular Aspects of Development 3 Same as Zool 573.

576 Molecular Biology Techniques I 1 (0-3) Same as BC/BP 576.

577 Molecular Biology Techniques II 1 (0-3) Same as BC/BP 577.

580 Protein Targeting in Plant Cells 3 Same as Pl Pi 580.

581 Advanced Topics in Genetics V 1-2 May be repeated for credit. Prereq GenCB 502 or 511. Recent research in selected areas of genetics.

588 Perspectives in Biotechnology 3 Graduate-level counterpart of GenCB 488; additional requirements. Credit not granted for both GenCB 488 and 588.

592 Advanced Topics in Cell Biology V 1-3 May be repeated for credit; cumulative maximum 7 hours. Current research in cell structure and function. Cooperative course taught by WSU, open to UI students (Genet/PlSc 592).

598 Seminar 2 May be repeated for credit. Prereq GenCB 501. Reviews of recent and classical research in genetics and cell biology.

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 Geology


Geology is the study of the Earth, its composition, structure, origin and evolution. Virtually every aspect of modern life is in some way dependent on the science of geology. For example it is the geologist’s job to discover new reserves of energy and raw materials, evaluate groundwater quality and quantity for drinking water supply, assess geologic hazards in land-use planning and unravel the mechanisms of continental drift and biological evolution.

Both general and advanced training is offered in most specializations in geology. The lower-division courses are designed to provide a strong foundation for those who major in geology as well as a stimulating introduction to earth science for the non-major. The 300-400-level courses provide training for professional geological work as well as preparation for postgraduate study.

The department has modern teaching facilities and special equipment, including an electron microscope, radiocarbon dating laboratory, X-ray diffraction and fluorescence instrumentation, inductively coupled plasma mass spectrometer, isotope extraction lines and isotope mass spectrometer, gas chromatographs and carbon analyzer, drilling rig, groundwater field demonstration site, transmitted and reflected light microscopes, for graduate study and research. There are active research programs in igneous petrology, geochemistry and mineralogy, structural geology and tectonics, economic geology, groundwater and contaminant hydrology, sedimentology and stratigraphy and paleontology.

The department offers courses of study leading to the degrees of Bachelor of Science in Geology, Master of Science in Geology, and Doctor of Philosophy (Geology).

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

Candidates for a B.S. degree in geology follow the curriculum outlined below. A minimum of 120 semester hours of credit is required for graduation, including a minimum of 40 semester hours of credit in 300-400-level course work with a 2.0 minimum g.p.a. overall and in the major.

GEOLOGY DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester Hours
Chem 105 [P] (GER) 3
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 Hours
Arts & Humanities [H,G] (GER) 3
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
Geol 206 3
Math 171 [N] (GER) 3

Sophomore Year

First Semester Hours
Geol 210 [P] (GER) 4
Geol 350 [M] 4
Phys 101 [P] or 201 [P] (GER) 4
Social Sciences [S,K] (GER) 3

Second Semester Hours
Biological Sciences [B] (GER) 3
Communication Proficiency [C,W] (GER) 3
Geol 260 2
Geol 310 2
Phys 102 [P] or 202 [P] (GER) 4

Junior Year

First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Geol 315 3
Geol 320 3
Geol 355 2
Geol 356 2
Intercultural [I,G,K] (GER) 3
Complete Writing Portfolio

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 6
Geol 340 [M] 4
Geol 362 2
Electives 4

Year 3, Summer Session: Geol 308 [M] 6
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 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) Introducory 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 4 (3-3) Examples in geology of how science is done, how it advances, and what constitutes scientific work. Field trip required.

180 [P] Honors Geology 4 (3-3) Prerequisite honors student or by interview. Introduction to physical geology with emphasis on original research and scientific writing. Credit not granted for more than one of Geol 101, 102, 180. Field trip required.

201 Geology of the National Parks 2 Prerequisite Geol 210. Significant geologic features, processes, and geologic history of the national parks. Field trip optional.

206 Field Petrology 3 (2-3) Prerequisite Geol 101 or 102. Hand sample analysis, petrogenesis and field relationships of rocks. Field trips required.

210 [P] Evolution and Earth History 3 (2-3) Prerequisite Geol 101 or 102; Rec Bio S 102. History and development of the Earth’s physical features and its inhabitants. Field trip required.

221 Field Trip 1 (0-3) May be repeated for credit. Prerequisite 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) Prerequisite Chem 105; Geol 350 or c/f; Math 108 or c/f; Phys 101 or 201. Basic mathematical tools and physical principles for geologic problem solving. Field trip required.

300 Vertebrate Paleontology and Evolution 3 Prerequisite Geol 210. Vertebrate evolution with focus on dinosaurs including origins, physiology, behavior, and relationships.

308 [M] Geology Field Camp 6 (0-18) Prerequisite 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) Prerequisite Geol 210. Morphology, classification, evolution, and paleoecology of fossil invertebrate organisms.

315 Water and the Earth 3 (2-3) Prerequisite Chem 106 and 101; or 260; Math 140, 171, or c/f; Phys 102 or 202. Global hydrologic cycle, including rivers and weathering, groundwater, rainwater and the atmosphere, oceans, human impacts. Field research required.

320 Sedimentary Petrology and Sedimentation 3 (2-3) Prerequisite Geol 210, 355. Sedimentary rock composition and origins applying fundamental principles of sedimentology. Field trip required.

322 [P] Geology of the Pacific Northwest 3 Prerequisite Geol 101 or 102. Physical geology of the Pacific Northwest, focusing on geological processes important in its evolution. Field trips required. Credit not granted for both Geol 322 and 323.

323 [P] Geology of the Pacific Northwest 4 (3-3) Prerequisite 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) Prerequisite Chem 101 or 105; Geol 101 or 102. Composition, physical properties, structure, crystallography, identification, and origin of minerals. Field trip required.

355 Optical Mineralogy 2 (1-3) Prerequisite Geol 350; Phys 102 or 202; c/l in Geol 356. Elements of optical crystallography and optical identification of minerals.

365 Igneous Petrology 2 (1-3) Prerequisite c/l in Geol 355. Mineralogy and petrology of igneous rocks using the polarizing microscope. Field trip required.

362 Metamorphic Petrology 2 (1-3) Prerequisite Geol 356. Mineralogy and petrology of metamorphic rocks using the polarizing microscope. Field trip required.

403 Environmental Geology 3 Prerequisite Geol 101 or 102. Geologic hazards and geologic problems associated with human activities. Optional field trip.

405 Geophysics 4 (3-3) Prerequisite 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.

421 [M] Principles of Stratigraphy 3 (2-3) Prerequisite Geol 210, 340. Correlation and dating of sedimentary strata; tectonics and sedimentary basins; regional patterns of sedimentation.

426 Geological Engineering Principles 3 Prerequisite Geol 101 or 102; Phys 101 or 201. Application of geology to solution of engineering problems; emphasis on selection of rock and soil parameters for use in design analysis. Credit not granted for both Geol 426 and 526. Cooperative course taught by UI (GeolE 435), open to WSU students.

428 Geostatistics 3 Same as Stat 428. Cooperative course taught by UI (GeolE/Stat 428), open to WSU students.

444 Seismic Hazard Analysis 3 Prerequisite Geol 101, Phys 101. Examines the geology of earthquakes from the mechanics of failure to seismic waves to seismicity associated with all fault types in a variety of tectonic settings. Cooperative course taught by UI (Geol 444), open to WSU students.

451 Pedology 3 (2-3) Same as Soils 451.

470 Introduction to Economic Geology 4 (3-3) Prerequisite 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.

475 Groundwater 3 (2-3) Prerequisite Geol C 317; or Geol 315; or all of the following four courses: Chem 106; Geol 101; Math 140 or 172; and Phys 101 or 202. Introduction to groundwater occurrence, movement, quality, and resource management, emphasizing physical and biochemical principles. Field trip required.

480 Introductory Geochemistry 3 Prerequisite Chem 106, Geol 350. The chemistry of Earth materials and processes.

491 Remote Sensing and Geologic Applications 3 (2-3) Prerequisite Geol 340; Phys 102 or 202. Remote sensing techniques and their utilization in geologic studies, air photos, radar, IR, and Landsat imagery used. Field trip required. Credit not granted for both Geol 491 and 591.

498 Undergraduate Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Prerequisite 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.

508 Advanced Field Methods 3 (0-9) May be repeated for credit. Individual instruction in advanced methods of field geology.

511 Advanced Topics in Paleontology 3 Prerequisite 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 Geol 320. Clastic sedimentary environments; architectural elements and facies analysis. Cooperative course taught by WSU, open to UI students (Geol 528). Field trip required.

527 Petrology of Carbonate Rocks 3 Prereq Geol 320. Origin, classification, distribution, depositional environments, and diagenesis of modern and ancient carbonates; emphasis on petrographic analysis. Field trip required. Cooperative course taught by UI (Geol 526), open to WSU students.

528 Geological 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).

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 I 3 (2-3) Prereq Chem 331, Geol 582; or by interview only. Application of solution chemistry to hydrothermal solutions; Eh-pH, log f(O2) -pH, activity - activity diagrams; estimation techniques; water structure; metal complexation; solubility, transport and deposition; equilibrium speciation; geothermal fields; experimental methods; activity coefficients. Cooperative course taught by UI (Geol 557), open to WSU students.

558 High-Temperature Aqueous Geochemistry II 3 Prereq Chem 331, Geol 557, 582; or by interview only. Expands on topics covered in Geology 557 through seminar format; selected readings from primary literature followed by presentations and discussions in class. Cooperative course taught by UI (Geol 558), open to WSU students.

560 Advanced Igneous Petrology 3 (2-3) Origin, evolution, and tectonic significance of igneous rocks. Cooperative course taught by WSU, open to UI students (Geol 560). Field trip required.

561 Advanced Mineral Deposits 3 Modern concepts of the origin and geochemistry of metal- and mineral deposits. 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.

567 Volcanology 3 (2-3) Prereq Geol 356. Eruption mechanisms, volcanic processes and landforms, and volcanic deposits. Field trips required. Cooperative course taught by UI (Geol 567), open to WSU students.

569 Field Methods in Hydrogeology 2 (1-3) Prereq Geol 475; Geol 577 or 579. Theory and practice of acquisition of hydrogeologic data, emphasizing design and execution of field experiments.

570 Advanced Topics in Hydrogeology V 1-4 May be repeated for credit; cumulative maximum 9 hours. Prereq Geol 475. Topics may include organic/inorganic contaminant fate, recharge, carbon cycling, isotope 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).

574 Advanced Remote Sensing 3 (1-4) Same as Soils 574.

575 Seminar in Remote Sensing 1 Same as Soils 575.

577 Advanced Groundwater Hydraulics 3 Same as CEE 577.

579 Groundwater Geochemistry V 2-4 May be repeated for credit; cumulative maximum 4 hours. Prereq Chem 331, Geol 475. Organic and inorganic aqueous geochemistry; controls on groundwater contaminant fate. Cooperative course taught by WSU, open to UI students (Hydro 566).

582 Petrologic Phase Equilibria 3 Prereq graduate standing. Thermodynamic and graphical analysis of phase equilibria in igneous and metamorphic rock systems.

584 Principles of Isotope Geochemistry 3 Principles and applications of isotope geochemistry in the geological sciences.

588 Isotope Geology 4 Prereq Geol 480. Geologically useful radioactive isotopes; geochemistry and isotope as tracers. Cooperative course taught by UI (Geol 588), open to WSU students.

591 Remote Sensing and Geologic Applications 3 (2-3) Graduate-level counterpart of Geol 491; additional requirements. Credit not granted for both Geol 491 and 591.

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).

597 Advanced Topics in Geology V 1-4 May be repeated for credit; cumulative maximum 6 hours. Topics of current interest in geology.

598 Graduate Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Prereq graduate student in Geol or related field. Papers presented by students, faculty, and visiting scientists on geological research. S, F grading.

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

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

717 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.

**Degree Program Requirements**

Honors students complete Honors Requirements in place of General Education Requirements.

**HISTORY DEGREE PROGRAM (120 HOURS)**

36 semester hours history courses required including 6 hours US history, 6 hours European history, and 9 hours of Non-Western/Global history; 12 hours 100-200-level Hist; 3 hours additional Hist; 21 hours 300-400-level, which must include Hist 300 and 469; and 12 hour concentration (at least 6 hours 300-400-level) in the same or in related disciplines with the advisor's approval.

At least 40 of the total hours required for the bachelor's degree in this program must be in 300-400-level courses. A grade of C or better is required in all History courses used to fulfill the requirements for this major.

It is assumed that prior to the junior year the student will have completed courses meeting General Education and College of Liberal Arts requirements for graduation.

**Freshman Year**

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<th>First Semester</th>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
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<td>Tier I Science [Q] (GER)</td>
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**Second Semester**

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<td>Communication Proficiency [C,W] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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**Sophomore Year**

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<td>100-200-level Hist Electives²</td>
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<td>Arts &amp; Humanities [H,G] (GER) or Social Sciences [S,K] (GER)</td>
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<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<tr>
<th>Second Semester</th>
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<tr>
<td>100-200-level Degree Program Course¹</td>
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<tr>
<td>100-200-level Hist Electives²</td>
<td>6</td>
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<td>Arts &amp; Humanities [H,G] (GER) or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3 or 4</td>
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<tr>
<td>Science Elective(GER)</td>
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**Junior Year**

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<tr>
<td>300-400-level Hist Electives²</td>
<td>6</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3 or 4</td>
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<tr>
<td>Hist 300 or Hist Elective (any level)</td>
<td>3</td>
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<td>Complete Writing Portfolio</td>
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**Second Semester**

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<tr>
<th>Hours</th>
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<tr>
<td>Hist 300, 270, 272, 273, or 275</td>
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**Senior Year**

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<td>Hist 300 or Hist Elective²</td>
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<td>300-400-level Hist Electives²</td>
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<tbody>
<tr>
<td>Hist 469</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Electives</td>
<td>6</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

1. Students may also fulfill the 3-credit Tier I Science and the 1-credit Science Elective by taking a 4-credit Tier I Science course.

2. History Electives must include 6 hours US history, 6 hours European history, and 9 hours Non-Western/Global history.

3. Courses in the same or in related disciplines with the advisor's approval; students are encouraged to explore, in consultation with their advisor, a double-major or strong minor in a complementary subject field.

**SOCIAL STUDIES DEGREE PROGRAM (120 HOURS)**

Social Studies is traditionally a major for students who plan to earn both a BA and a primary teaching endorsement and is also an interdisciplinary Liberal Arts major. Students pursuing a teaching certificate must apply for admission to the 4-12 Certificate Program. The program leads to a Primary Endorsement in Social Studies and a Secondary Endorsement in History. Students are encouraged to select an additional endorsement, and English is recommended.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anth 101 [S] or Hist 101 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
<td>4</td>
</tr>
<tr>
<td>CAP 101 [I], 111 [I], 131 [I], 151 [G], 171 [G], or W St 200 [S] (GER)²</td>
<td>3</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>Soc 101 [S] or Hist 102 [H] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Econ 101 [S] or Hist 101 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist 110 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Pol S 101 [S] or Psych 105 [S] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 201 [W], 301 [W], or 302 [W] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Hist 102 or Soc 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist 111 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist 230, 231, 270, 272, 273, or 275</td>
<td>3</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>300-400-level Hist Elective³</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hist 300, 270, 272, 273, or 275</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Writing Portfolio</td>
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</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hist 300, 270, 272, 273, or 275</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective³</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Hist 300</td>
</tr>
<tr>
<td>Hist 422</td>
</tr>
<tr>
<td>T &amp; L 301</td>
</tr>
</tbody>
</table>

**Fifth Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EdPsy 402</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 450</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electives³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>T &amp; L 415</td>
<td>16</td>
</tr>
</tbody>
</table>

1. Students may also fulfill the 3-credit Tier I Science and the 1-credit Science Elective by taking a 4-credit Tier I Science course.

2. If student elects W St 200, the [I] GER requirement remains to be fulfilled.

3. Students may elect to use these credits toward an additional certification area.

4. Approved seminar may double for 3 credits of either History or Social Studies electives.

**HISTORY EDUCATION DEGREE PROGRAM (120 HOURS)**

Students who wish to earn a teaching credential must apply to the teacher certification program in the College of Education. They should consult with an advisor in History. 36 hours of Hist, including 6 hours of U.S., 6 hours of European, 9 hours of Non-Western/Global, of which 21 hours must be 300-400-level and must include Hist 300 and 469. Hist 480 is not counted as part of the 36 hours.

A supporting endorsement (18-21 hours) is required. It should be selected in consultation with an advisor. Students must have one year of a foreign language at the college level or two years at the high school level.
Department of History

Freshman Year

First Semester
- Arts & Humanities [H,G] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math Proficiency [N] (GER) 3 or 4
- Tier I Science [Q] (GER) 3

Second Semester
- Biological [B] or Physical [P] Sciences (GER) 4
- Hist 101 [H], 111 [I], 131 [I], 151 [G], 171 [G], or W St 200 [S] (GER) 3
- ComSt 102 [C] (GER) 3
- GenEd 111 [A] (GER) 3
- Pol S 101 [S] or Psych 105 [S] (GER) 3

Sophomore Year

First Semester
- Biological [B] or Physical [P] Sciences (GER) 4
- Engl 201 [W], 301 [W], or 302 [W] (GER) 3
- Hist 101
- Hist 110
- Pol S 101 [S] or Psych 105 [S] (GER) 3

Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Hist 102
- Hist 111
- Hist 230, 231, 270, 272, 273, or 275 3
- Science Elective(GER) 3
- Supporting Endorsement 3

Junior Year

First Semester
- 300-400-level Hist Electives 6
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Hist 300
- Supporting Endorsement 3
- T & L 300
- Complete Writing Portfolio

Second Semester
- 300-400-level Hist Elective or Hist 300 3
- Hist 422
- Supporting Endorsement 3
- T & L 301

Senior Year

First Semester
- 300-400-level Hist Elective 3
- Hist 469
- Supporting Endorsement 3
- T & L 317
- T & L 328

Second Semester
- 300-400-level Hist Elective 3
- Hist 480
- Supporting Endorsement 3
- Tier III Capstone (GER) 3
- T & L 404

Fifth Year

First Semester
- EdPsy 402 2
- Supporting Endorsement or Electives 6
- T & L 450 2
- Elective 3

Second Semester
- T & L 415 16

Supporting Endorsements should be chosen in consultation with the advisor; English is recommended.

Minor in History

A minor in history requires 18 hours, 9 of which must be in 300-400-level courses. A grade of C or better is required in all course work for the minor.

Preparation for Graduate Study

Students who have had basic undergraduate training in European and American history (approximately 12 hours) and who have had undergraduate majors in such subjects as American literature, economics, anthropology, and political science may be well prepared for graduate study in several fields of specialization in history. Adequate opportunities are provided for removing deficiencies by taking appropriate courses or special examinations.

Undergraduates who are pursuing their studies at other institutions or through other curricula at this institution and who contemplate graduate work in this department should select courses similar to those required in the above schedule of studies.

Description of Courses

History

Hist
- 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 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 [I] African American History 3 Same as CAC 235.
- 216 [H] American Culture 3 Same as Engl 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.
- 270 [K] Introduction to South Asian Culture 3 Development of civilization; and contemporary situations of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan, and the Maldives.
- 272 [I] Introduction to Middle Eastern History 3 History of the Middle East from Muhammad to the present; political and religious development and the impact of empires.
- 273 [G] Foundations of Islamic Civilization 3 Main ideas and institutions that have characterized Islamic civilization since its founding, presented thematically.
- 275 [K] Introduction to East Asian Culture 3 Civilizations of China and Japan.
- 298 [S] History of Women in American Society 3 The roles of women—social, economic, political—in American history from colonial times to the present.
- 306 [K] Cultures and Peoples of the Middle East 3 Same as Anth 306.
- 308 [K] North American Indian History, Precontact to Present 3 History of North American Indian peoples from circa 1350 to present.
- 313 [S] Civil Rights Movement in America 3 Same as CAC 335.
- 320 [S] [M] American Agriculture and Rural Life 3 Same as Ag Ec 320.
- 331 [K] Cultural History in Latin America 3 Social development of Blacks, Whites, and Indians in Latin America from the conquest to the modern era.
- 335 Women in Latin American History 3 Survey of women’s changing roles throughout Latin America from precolonial to present.
- 337 Women in the Ancient World 3 Women’s roles in the Ancient Near East, Greece, and Rome; focus on the formation of western attitudes toward women.
- 341 [H] Rome: Republic and Empire 3 History and culture of the Roman world from the independence of the city to the onset of the medieval order.
- 342 [H] History of England to 1485 3 English history; intellectual and cultural development.
- 343 [H] History of England Since 1485 3 Continuation of Hist 342. English history from the reign of the first Tudor monarch, Henry VII, to the present welfare-state era.
- 345 Topics in History Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.
- 348 History of Scandinavia 3 A history of Scandinavia from earliest historical times to the present.
- 349 The Vikings in History 3 The political, social, and cultural history of Scandinavia and Viking expansion to Northern Europe, Russia, and the North Atlantic, ca 750-1100 CE.
- 350 [S] European Women’s History, 1400-1800 3 Women’s experiences in Europe from the Renaissance to the Enlightenment and the ideas and roles that shaped their opportunities.
- 351 Modern European Women’s History, Since 1800 3 Explores the experience of European women and cultural ideals about gender from a historical perspective.
468 Hitler and Nazi Germany 3 Origins and rise of Nazism; state, society and culture in the Third Reich; Nazi racial ideology; world war; the Holocaust. Credit not granted for both Hist 468 and 568.

469 [M] Seminar in History 3 May be repeated for credit. Prereq Hist 390.


472 [M] 20th Century Middle East 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 [S] 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 437.

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 around the world from the medieval era to the present.

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.

501 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.

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, 1914-1941 3 Graduate-level counterpart of Hist 418; additional requirements. Credit not granted for both Hist 418 and 518.

519 United States, 1941-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, andRomantics: The Impact 3 Graduate-level counterpart of Hist 423; additional requirements. Credit not granted for both Hist 423 and 523.

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

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 Age of Revolution: Europe, 1815-1870 3 Graduate-level counterpart of Hist 453; additional requirements. Credit not granted for both Hist 453 and 553.

554 Age of Imperialism: Europe, 1870-1914 3 Graduate-level counterpart of Hist 454; additional requirements. Credit not granted for both Hist 454 and 554.

555 From the Tudor Revolution to the Glorious Revolution 3 Graduate-level counterpart of Hist 455; additional requirements. Credit not granted for both Hist 455 and 555.

559 Modern Britain 3 Graduate-level counterpart of Hist 459; additional requirements. Credit not granted for both Hist 459 and 559.

560 Field Course in Early European History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and issues in early European history.

562 History of Imperial Russia 3 Graduate-level counterpart of Hist 462; additional requirements. Credit not granted for both Hist 462 and 562.

563 History of the Soviet Union 3 Graduate-level counterpart of Hist 463; additional requirements. Credit not granted for both Hist 463 and 563.

565 East-Central Europe 3 Graduate-level counterpart of Hist 465; additional requirements. Credit not granted for both Hist 465 and 565.

567 Modern France 3 Graduate-level counterpart of Hist 467; additional requirements. Credit not granted for both Hist 467 and 567.

568 Hitler and Nazi Germany 3 Graduate-level counterpart of Hist 468; additional requirements. Credit not granted for both Hist 468 and 568.

569 Field Course in Modern European History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in modern European history.

570 Field Course in Comparative History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and issues in the comparative history of major world regions.

571 World History: Theory and Methodology 3 An introduction to themes, theories, methods, and literature of a global approach to history.
The primary objective of the University Honors College is to provide enriched educational opportunities for eligible students. The college promotes greater understanding of the artistic, natural, and cultural worlds and is designed to supplement the more specialized education in the major field.

The University Honors College is comprised of students from all departments and colleges who take honors courses in place of General Education Requirements throughout their undergraduate career. Many departments and colleges offer special honors courses for their students in addition to the university honors courses.

Students who are not admitted to the University Honors College, as incoming first year students may petition to enter the UHC any time after the end of their junior year. 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, except for the foreign language requirement where it applies.

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.

The mathematics requirement for students in the University Honors College can be met in a number of ways. Students who, on the basis of the math placement exam, test into Math 172, are exempt from this requirement, as are students awarded Math 171 advanced placement credit. Most students fulfill their mathematics requirement by completing the math required by their major department, or, if no math is required by their major, by meeting the math requirements set by the General Education Program. Typical math courses include the following: Math 140, 171, 202, 205, 206, 210, 212, or 251 and 252. For the University Honors pre-veterinary students, Stat 412 may be accepted with special permission of an honors advisor.

A student may withdraw from the University Honors College at any time within existing university rules, and the honors courses taken will be applied toward the General Education Requirements for graduation.

Courses offered through the University Honors College are open to students enrolled in the program. Other students not enrolled in the UHC may sign up for honors courses on a space-available basis providing they meet eligibility criteria for the UHC.

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/.

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 slightly alter their program schedule of studies. 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 and will be exempt from completing the independent study requirement. 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 (or approved substitutes) specified in the following schedule of studies. As stated above, UHC students are strongly urged to gain proficiency in a foreign language and to take advantage of the Study Abroad opportunities offered by Washington State University. Either or both of these options can be successfully integrated into the following schedule of classes in conjunction with the courses required by the student’s major.

Each semester, students enrolled in the Honors College take one to three honors courses in addition to their major courses. The suggested schedule of studies, distributing the honors courses over four years, is as follows:

Freshman Year
First Semester
Engl 198 or 199
Math requirement\(^1\) or social science 198

Second Semester
Engl 198 or 199
Math requirement\(^1\) or social science 198

Freshman or Sophomore Year
Choose three:
Anth 198, Econ 198, Hist 198, Pol S 198, Psych 198, Soc 198

Sophomore Year
Bio S 298 (spring only)\(^2\)
Ph S 298 (fall only)\(^3\)

Junior Year
U H 330 Development of Western Civilization
U H 350 Development of Global Civilization

Junior or Senior Year
U H 450, 451, 452, 453, 454, 455, or 456

Senior Year
U H 440 Domain of the Arts

Timing Optional with Student:
Independent Study\(^4\)
Choose one:
U H 260, Hum 198\(^5\), Phil 198

Optional: U H 430 (Education Abroad Practicum and Research)

\(^1\)Students who qualify for Calculus II (Math 172) on the basis of the math placement test are exempt from this requirement. Other students take the math required by their major. Where no math is required beyond General Education Requirements, University Honors will accept: Math 140, 171, 202, 205, 206, 210, 212, 251 and 252. For any questions concerning the math requirement, check with a University Honors College advisor.

\(^2\)Students taking biological science laboratory courses for their majors may be exempt from this requirement.

\(^3\)Students taking physical science laboratory courses for their majors may be exempt from this requirement.

\(^4\)A minimum of 3 credits of independent study is required. This requirement may be fulfilled through Special Problems (U H 499). This option involves a nonclassroom academic experience, under the guidance of a professor, designed by the student and the professor.

\(^5\)Phil and Hum can be taken from the freshman year on.
### Description of Courses

A S 198 Animal Science Honors 3  
Anth 198 Anthropology Honors 3  
Bio S 298 Biological Science Honors 4 (3-3)  
Chem 115 Chemical Principles Honors 1 4 (3-3)  
Chem 116 Chemistry Principles Honors II 4 (3-3)  
Econ 198 Economics Honors 3  
Engl 198 English Composition Honors 3  
Engl 199 English Composition and Literature Honors 3  
Geol 180 Geology Honors 4 (3-3)  
Hist 198 History Honors 3  
Hum 198 Humanities Honors 3  
Phil 198 Philosophy Honors 3  
Phys S 298 Physical Science Honors 4 (3-3)  
Phys 205 Physics Honors 1 5 (3-4)  
Phys 206 Physics Honors II 5 (3-4)  
Pol S 198 Political Science Honors 3  
Psych 198 Psychology Honors 3  
Soc 198 Sociology Honors 3  

### University Honors

U H  
105 Honors Freshman Seminar 1 Introduction to the academic culture and opportunity to enrich learning in entry-level courses. Credit not granted for more than one of GenEd 104, 105, U H 105.  
150 Introduction to Science and Technology 3 (2-3) Physical/biological science principles, methods and roles of scientists and engineers, historical context, current technological issues, limits of scientific inquiry.  
260 Honors Seminar 2 May be repeated for credit. In-depth study of selected topics.  
330 Development of Western Civilization 3 Examination of the literary, cultural, philosophical, and historical traditions within western civilization. Required of all Honors College students in their junior or senior year.  
350 Development of Global Civilizations 3 Cultural and historical traditions of one or more civilizations; primary focus on Asian, African, Middle Eastern, and South American civilizations. Required of all Honors College students in their junior or senior year.  
400 Honors Culture and Arts Practicum V 1-3 May be repeated for credit; cumulative maximum 3 hours. Methods and roles of scientists and engineers, historical context, current technological issues, limits of scientific inquiry.  
430 Education Abroad Practicum and Research V 1-4 By interview only. Special assignments in place of General Education Requirements.  
440 Domain of the Arts 3 An examination, frequently comparative, of the visual, literary, environmental, and performing arts. Required of all Honors College students in their senior year.  
450 Honors Thesis or Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Thesis or project directed by student’s major department. S, F grading. 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.

### 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.  
450 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.  
450 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.  
450 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.  
450 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 and Landscape Architecture


### Honors College

Honors students complete Honors Requirements in place of General Education Requirements. Students in horticulture may focus on environmental 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.

### Degree Program Requirements

ENVIRONMENTAL HORTICULTURE DEGREE PROGRAM (133 HOURS)  

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</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>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></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>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hort 201</td>
<td>4</td>
</tr>
<tr>
<td>L A 264</td>
<td>3</td>
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<tr>
<th>Sophomore Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
<td></td>
</tr>
<tr>
<td>Chem 240 or 340</td>
<td>3 or 4</td>
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<tr>
<td>Hort 231</td>
<td>3</td>
</tr>
<tr>
<td>Hort 234</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 201</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>Ag Ec 201 [S] or Econ 102 [S] (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>Hort 232</td>
<td>3</td>
</tr>
<tr>
<td>Hort 251</td>
<td>4</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

Summer Session—Hort 399 | 3 |
### Junior Year

**First Semester**

- Business\(^1\) or Science Emphasis\(^2\) 6
- Bot 320 4
- Hort 331 3
- Hort 356 1
- IPM 429 3

**Second Semester**

- Business\(^1\) or Science Emphasis\(^2\) 6
- Cpt S Elective 3 or 4
- Entom 340 3
- Soils 441 3

**Senior Year**

**First Semester**

- Business\(^1\) or Science Emphasis\(^2\) 3
- Hort 310 or 313 3
- Hort 320 3
- Hort 321 1
- Hort 418 [M] 3
- Hort 438 3

**Second Semester**

- Business\(^1\) or Science Emphasis\(^2\) 3
- Hort 416 3
- Hort 425 [M] 3
- Hort 439 3
- IPM Elective 2 or 3
- Tier III Capstone (GER) 3

**Third Semester**

- Business\(^1\) or Science Emphasis\(^2\) 3
- Bot 320 4
- Hort 310 or 313; 313; or 320 & 321 3 or 4
- Hort Elective 3
- Intercultural [I,G,K] (GER) 3
- IPM Elective 2 or 3
- Hort 425 [M] 3
- Electives 6

**Fourth Semester**

- Summer Session—Hort 399 3

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\(^1\) 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; BC/BP 364; GenCB 150 or 301; and Stat 412 or Math 171 are required.

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### TREE FRUIT MANAGEMENT DEGREE PROGRAM (146 HOURS)

The Tree Fruit Management option in the Horticulture B.S. degree is an integrated, cooperative program between Wenatchee Valley College and the Department of Horticulture and Landscape Architecture. This option is designed to train professional horticulturists for deciduous tree fruit industries. The first half of the program is taken at Wenatchee Valley College, where educational emphasis is on applied aspects of tree fruit production and management through courses, orchard practicum experiences and internships. The second half of the program is taken at Washington State University, where courses, laboratories and research experience provide students with an advanced knowledge of the science, technology and management of tree fruit production systems. Additional courses are taken to increase breadth of knowledge about the diversity of horticultural crops and awareness of current issues in horticultural science.

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### Senior Year (Washington State University)

**Fall Semester**

- Chem 311 (WSU [P] GER) 5
- Math 201 (WSU [N] GER) 5

**Winter Quarter**

- Agri 153 4
- Agri 161 5
- Chem 110 (WSU [P] GER) 5
- Engl 101 (WSU [P] GER) 5

**Spring Quarter**

- Agri 154 2

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### 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 234 or 251 are required. All pass, fail enrollments must be approved by the department chair.
Preparation for Graduate Study

Students with undergraduate majors in the plant sciences, including horticulture, crop science, plant pathology, environmental science, genetics, plant physiology and biochemistry may be well prepared for graduate study in horticulture.

Undergraduate students who are pursuing their studies at other institutions, or through other curricula at this institution, and who contemplate graduate work in horticulture should take as many courses in the basic physical and biological sciences as possible.

LANDSCAPE ARCHITECTURE

Landscape architecture is the professional art and science of planning and designing land elements so that the activities of people are in harmony with their environment. The practice ranges in scale from the design of residential and garden landscapes to planning and design of complex projects such as cities and regions.

The curriculum is accredited by the American Society of Landscape Architects (ASLA). It stresses a broadly based course of study emphasizing residential, community, and urban design; site, regional and land use planning, and professional practice methods. The curriculum is divided into two parts: pre-landscape architecture and landscape architecture. The opportunity exists to participate in special studies, professional work experiences and foreign study.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

PRE-LANDSCAPE ARCHITECTURE

Prelandscape architecture (preLA) is a two-year, nondegree course of study that is intended to prepare undergraduate students for the advanced professional curriculum in the upper division. The preLA curriculum concentrates on General Education Requirements (GERs) and basic professional courses. General Education Requirement (GER) courses should be selected with the assistance of a landscape architecture 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

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Bot 120 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 150 [Q] (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>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Chem 101 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Communication [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>F A 101 [H], 201 [H], or 202 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<tr>
<td>L A 202</td>
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Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Hort 231</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>L A 101</td>
<td>3</td>
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<tr>
<td>L A 260</td>
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<tr>
<td>L A 262</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Graphics Elective</td>
<td>3</td>
</tr>
<tr>
<td>Hort 232</td>
<td>3</td>
</tr>
<tr>
<td>L A 263</td>
<td>3</td>
</tr>
<tr>
<td>L A 365</td>
<td>4</td>
</tr>
<tr>
<td>L A 400</td>
<td>3</td>
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</tbody>
</table>

LANDSCAPE ARCHITECTURE (154 HOURS) (FYDA (FIVE-YEAR AGREEMENT))

The professional five-year course of study is divided into two segments. These are prelandscape architecture (listed above) and the third- through fifth-year professional landscape architecture program (BL A). 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 passing grade of C or better for students to be admitted into the professional program: Bot 120, Hort 231, 232, L A 101, 260, 262, 365, 400.

Transfer students who have completed the equivalent of the preLA curriculum may apply to the professional program. The entire fourth year of the program is conducted at the Interdisciplinary Design Institute on the WSU Spokane branch campus. Students may choose to complete their fifth year in Spokane or Pullman.

Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Bio S 372, Bot 462, or NATR S 300</td>
<td>3</td>
</tr>
<tr>
<td>Hort 331</td>
<td>3</td>
</tr>
<tr>
<td>L A 362</td>
<td>4</td>
</tr>
<tr>
<td>L A 366</td>
<td>4</td>
</tr>
<tr>
<td>SoilS 201</td>
<td>3</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>
</tr>
</thead>
<tbody>
<tr>
<td>AgTM 346</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>L A 363</td>
<td>4</td>
</tr>
<tr>
<td>L A 367</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 374</td>
<td>3</td>
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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>
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Fifth Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>L A 485</td>
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<tr>
<td>Electives</td>
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Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>L A 486 [M]</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
</tr>
<tr>
<td>Electives</td>
</tr>
</tbody>
</table>

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] The Science of Gardening 3 (2-3) Plant production systems are used to explore and understand the interrelationships between living systems, the environment, and modern civilization.

201 Introduction to Horticultural Science 4 (3-3) Prereq Bot 120. Fundamentals of plant growth and development at the cellular and whole plant levels as influenced by environment and management decisions.

231 Landscape Plant Materials I 3 (2-3) Prereq Bot 120 or Hort 201. Characteristics, ecology, nomenclature, identification, selection, and use of important woody and herbaceous landscape plant species.

232 Landscape Plant Materials II 3 (2-3) Prereq Bot 120 or Hort 201. Continuation of Hort 231.

234 Controlled Environments for Horticultural Production 3 (2-3) 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).

251 Plant Propagation 4 (2-6) Prereq Bio S 103, Bot 120, 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 Bio S 104 or Bot 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 c/l in Hort 310. Cultural practices in deciduous tree-fruit production. Field trip required.

317 Golf Course Management 1 Same as CropS 317.

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/l 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 Bot 325. Principles and techniques in horticulture. S, F grading.


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 1 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 BC/BP 364, Bot 320, GenCB 301. Genetic, molecular, and evolutionary aspects of plant reproductive strategies and their manipulations. Credit not granted for both Hort 405 and 505.

416 Advanced Horticultural Crop Physiology 3 Prereq Bot 320. Physiological processes related to growth, development, and productivity of horticultural crops; advances in recombinant DNA technology; the impact on horticultural practices. Credit not granted for both Hort 416 and 516.


418 [M] Post-harvest Biology and Technology 3 (2-3) Prereq Hort 201; Bot 320. Physical and physiological basis for handling and storage practices; perishable organ ontogeny and physiological disorders; post-harvest environment requirements. Field trip required. Cooperative course taught by WSU, open to UI students (PlSc 418). Credit not granted for both Hort 418 and 518.

420 Potato Physiology and Production Technology 2 (1-3) Prereq Bot 320. Plant and tuber physiology; physical, chemical, physiological and technical concepts of production, storage, and processing of potatoes. Field trip required. Credit not granted for both Hort 420 and 520. Cooperative course taught by WSU, open to UI students (PlSc 420).

421 [M] Fruit Crops Management 3 Prereq woody 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] Current Topics in Horticulture 3 Prereq junior standing. Use scientific, business, government, and popular information to explore trends that impact horticulture; organize and evaluate information; investigate selected topics.

438 Ornamental Plant Production 1 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 1 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).

445 [M] Plant Breeding 3 Same as CropS 445.

469 Seed Production 3 Same as CropS 469.

480 Agricultural Issues 1 Prereq Bio S 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 Bot 320. Current topics and research topics in horticulture.

505 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Graduate-level counterpart of Hort 405; additional requirements. Credit not granted for both Hort 405 and 505.

509 Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Continuous enrollment required for regularly enrolled graduate students in Hort. Recent developments in horticulture. S, F grading.

510 Graduate Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Literature reviews and research progress reports.

512 Advanced Pomology 3 Modern concepts, research, and problems of the fruit industry as reflected by current literature; practice in critical review of scientific literature.

515 Seminar in Plant Physiology 1 May be repeated for credit; cumulative maximum 4. A cross-discipline seminar, including botany, crop and soil sciences, horticulture, plant pathology, and plant physiology.

516 Advanced Horticultural Crop Physiology 3 Graduate-level counterpart of Hort 416; additional requirements. Credit not granted for both Hort 416 and 516.

518 Post-Harvest Biology and Technology 3 (2-3) Prereq graduate standing. Graduate-level counterpart of Hort 418; additional requirements. Credit not granted for both Hort 418 and 518. Cooperative course taught by WSU, open to UI students (PlSc 518).

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 520).

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).

536 Plant Genetic Engineering Laboratory 2 (0-6) Same as CropS 536.

538 Ornamental Plant Production I 3 (2-3) Graduate-level counterpart of Hort 438; additional requirements. Credit not granted for both Hort 438 and 538. Cooperative course taught by WSU, open to UI students (PlSc 530).

539 Ornamental Plant Production II 3 (2-3) Graduate-level counterpart of Hort 439; additional requirements. Credit not granted for both Hort 439 and 539. Cooperative course taught by WSU, open to UI students (PlSc 531).

570 Plant Molecular Genetics 3 Same as GenCB 570.

590 Potato Science 3 Graduate-level counterpart of Hort 490; additional requirements. Credit not granted for both Hort 490 and 590. Cooperative course taught by UI (PlSc 590), open to WSU students.

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

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

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

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

L A 101 Landscape Architecture Graphics 3 (1-6) Basic mechanical and freehand drawing; use of various drafting media, two- and three-dimen- sional drawing, lettering, and rendering tech- niques.

L A 102 (400) Introduction to Computer Graphics in Landscape Architecture 3 (2-3) Computer-aided analysis, design, graphic techniques using AutoCAD, IntelliCAD, LandCADD, to gain 2- and 3-D design, analysis, drafting, rendering, and web format skills.

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

250 Beginning Landscape Design and Construction 3 (2-3) Prereq sophomore standing; by interview only. Basic landscape architecture design and construction for small spaces.

260 History of Landscape Architecture 3 Historical development in the practice and profession of landscape architecture throughout the world, circa B.C. to present. Cooperative course taught jointly by WSU and UI (LArc 389).

262 Landscape Architectural Design I 3 (2-3) Prereq Arch 102 or L A 101. Application of basic design principles and design process to site planning; integration of design graphics and verbal/graphic presentations.

263 Landscape Architectural Design II 3 (0-6) Prereq 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 or L A. Project planned with and approved by faculty as professional work experience; written report and presentation to faculty required.

362 Landscape Architectural Design III 4 (2-6) Prereq L A 263, junior in L A. Professional site design processes; concentration on planting and site planning, design with urban community, ecological, and open-space projects.

363 Landscape Architectural Design IV 4 (2-6) Prereq L A 263, junior in L A. Professional site design processes; concentration on recreation facilities and site planning within residential, urban, institutional, and regional projects.

365 Landscape Architectural Construction I 4 (2-6) Prereq L A 262. Basic grading and surface drainage facility; surface drainage systems, hori- zontal 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 popu- lation, community, landscape, restoration, and historical ecology, as they relate to planning and design.

399 Professional Work Experience: Office Practice 1 or 2 Prereq 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 hu- mans and environment; exploration of major theoretical approaches to design, planning, and management of landscapes.

440 Advanced Application in Computer-Aided Design 3 Prereq introductory course in CAD. Advanced applications in 2-D and 3-D CAD, including photorealistic modeling and rendering, landform analysis, animation, and customization.

450 (M) Principles and Practice of Planning 3 Same as ESP 450.

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.

470 Regional Landscape Inventory and Analysis 4 (2-6) Prereq Bio S 120; Geo 101 or SoilS 201. Application of ecological planning process for landscape inventory and analysis.

476 [M] Senior Creative Project 4 Prereq L A 475. Individually developed studio and schol- arly 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 in- dividual 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 con- struction contract legal requirements within the practice of landscape architecture. Cooperative course taught jointly by WSU and UI (LA 358).

485 Senior Creative Project I 4 (0-8) Prereq L A 425. Individually developed studio or schol- arly project conducted with faculty advisor; collection, analysis, and interpretation of project information.

486 Senior Creative Project II 4 (0-8) Prereq L A 485. Individually developed studio or schol- arly project conducted with faculty advisor; synthesis of information, solution develop- ment, 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 Architec- ture 3 Prereq graduate standing. Natural and cultural processes that characterize the in- teraction 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 Rockies regional landscape.

700 Master's Research, Thesis, and/or Examina- tion Variable Credit. S, F grading.

Program in Hotel and Restaurant Administration

Director, W. T. Umbrett: Taco Bell Distinguished Professor, W. Maynard; Ivar Haglund Distinguished Professor, K. Rutherford; Associate Professors, K. Kendall, M. C. Paxson; Assistant Professor, D. Corsan; Assistant Professor and Coordinator Swiss Center, W. H. Samenfink, C. Young; Lecturers, W. Costen, R. Harrington, C. Kroeze; Professors Emeriti, P. Diaz, B. Keck, D. Smith.

The program provides instruction at WSU Pullman and also to qualified transfer students at the off-site locations of Seattle, Washington, and Brig, Switzerland. The Seattle location will be phased out as of May 2000 and is not accepting admissions. This program provides specialized study of the major organizational and administrative problems of the hotel and restaurant industry. The program is intended to prepare graduates for the managerial opportunities available in the industry here and abroad. The cur- riculum provides for the well-rounded education of the hotel, restaurant, club, and institutional executive. It includes courses in the arts and sciences, econom- ics, 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 Ho- tel 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 comple- tion of 24 semester hours, 6 hours of which must be in Accctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Mgt 101, or MIS 150; a 2.0 cumulative g.p.a. and a 2.0 business g.p.a.

Hotel and Restaurant Administration (HA) Ma- jor 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 follow- ing courses: Accctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Engl 101, Math 201, 202, MIS 150, and meet current standards of a cumulative g.p.a. of at least 2.5. All students are eligible to pet- ition for the consideration of alternative criteria. A 2.0 cumulative business g.p.a. is required for graduation.
**Degree Program Requirements**

Honors students complete Honors Requirements in place of General Education Requirements.

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 171 or 202 (Math 202 recommended); Math 172 or 201 (Math 201 recommended); MIS 150. Enrollment in 300-level CBE business and hotel courses is restricted to those students who have met these requirements and certified as HA majors.

All students majoring in hotel and restaurant administration must complete 50% of their course work outside of the College of Business and Economics. Nine hours of economics and four hours of Dec S 215 are counted as outside of the CBE to meet this 50% rule.

Residence Requirements: 1) At least 50% of business core and major specialization course requirements must be taken at WSU; 2) At least nine 300-400-level business/economics/hotel courses must be taken in residence at WSU; and 3) The last 30 hours of course work must be taken at WSU.

The chair of the department and/or the dean of the college must approve in writing any portion of the 300-400-level credit which is to be satisfied by transfer, correspondence, independent study, or other credit which may not carry WSU grade points. Additional transfer, correspondence, and independent study credit (within university limits on these credits) may count toward the 120 hours required for the degree and/or satisfy requirements other than major courses.

Only general elective courses that are not GERs, not core/major requirements, and not a course offered by the CBE may be taken pass, fail. An honors senior project is required for Honors students.

### HOTEL AND RESTAURANT ADMINISTRATION DEGREE PROGRAM (120 HOURS)

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Year</strong></td>
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<tr>
<td>First Semester</td>
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<tr>
<td>Econ 101 or 102</td>
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</tr>
<tr>
<td>Engl 101 [W]</td>
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<tr>
<td>GenEd 110 [A]</td>
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</tr>
<tr>
<td>H A 181</td>
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<tr>
<td>Math 172 or 201</td>
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<td>Second Semester</td>
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<tr>
<td>Econ 101 or 102</td>
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<tr>
<td>FSHN 120</td>
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<tr>
<td>Math 171 [N] or 202 [N]</td>
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<td>Tier I Science [Q]</td>
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<td><strong>Sophomore Year</strong></td>
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<td>First Semester</td>
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<tr>
<td>Biological Sciences [B]</td>
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<tr>
<td>GenEd 111 [A]</td>
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<tr>
<td>H A 220</td>
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<tr>
<td>MIS 150</td>
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<tr>
<td>Acctg 231</td>
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<tr>
<td>B Law 210</td>
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<td>Dec S 215</td>
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<tr>
<td>H A 258</td>
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<td>H A 280</td>
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<td>300-400-level Engl [W] (GER)</td>
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<td>H A 358³</td>
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<td>Mgt 301</td>
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<td>Mktg 360</td>
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<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>or Semester Abroad In Switzerland</td>
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<td>Second Semester</td>
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<tr>
<td>H A 381 [M]</td>
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<tr>
<td>H A 480 [M]</td>
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<td>Soc or Psych [S,K] (GER)</td>
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<td>or Semester Abroad In Switzerland</td>
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<td><strong>Senior Year</strong></td>
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<tr>
<td>H A 320</td>
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<td>H A 491</td>
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<td>MIS 350</td>
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<td>H A Elective</td>
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<td>Second Semester</td>
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<td></td>
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<tr>
<td>H A 495</td>
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<td>H A Elective</td>
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<tr>
<td>Mgt 450</td>
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<tr>
<td>Pol Sci Elective</td>
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<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
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</tr>
</tbody>
</table>

¹For a total of 7 hours of Biological and Physical Sciences.
²Engl 402 is strongly recommended.
³H A 356 and 357 required as substitute for H A 358 at Seattle and Briggs sites.

### Minor in Hotel and Restaurant Administration

To be eligible to certify in the hotel and restaurant administration minor, students must have a cumulative g.p.a. of 2.5. A Minor in hotel and restaurant administration requires at least 16 hours of credit, 8 of which must be 300-400-level, with an overall g.p.a. of at least 2.0 in the required courses. Courses for the minors may not be taken pass, fail. A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100-200-level only. All other course work must be taken in residence at WSU. The Hotel and Restaurant Administration department chairperson must approve deviations from the stated requirements: Hotel and Restaurant Administration: H A 181, 220, 280, 301, 381, 435.

### Transfer Students

A student planning to transfer to hotel and restaurant administration from a two-year program should have made appropriate academic progress before transferring. In addition, the student should have 500 hours (one summer) of gainful employment in the hospitality industry. However, it is strongly advised that the student utilize both summers in related employment before entering WSU.

Qualified graduates of the International College of Hospitality Administration in Brig, Switzerland, may be admitted to the Swiss Center for HRA. Opportunities are available to all H A majors for a semester abroad at the Swiss Center.

### Description of Courses

Special Notice: Enrollment in 300-level hotel courses by non-hotel majors is restricted to students who have certified a major and have junior standing. Enrollment in 400-level hotel courses is open only to juniors and seniors officially certified into degree/minor programs that require these hotel courses.

### Hotel and Restaurant Administration

**H A**

181 Introduction 3 Historical development and organizational structure of the hospitality service industries. Cooperative course taught by WSU, open to UI students (RcMgt/Rec 181).

201 Quantity Food Production 3 Principles of menu writing, sanitation and food preparation applied to management of quantity food production and service.

220 Introduction to Industry Experience 1 Preparation for work in hospitality/business organizations; resume writing, interview skills, use of Career Services, career dress. S, F grading.

235 Principles of Tourism 3 Underlying principles and practices in domestic tourism. Cooperative course taught by WSU, open to UI students (RRT 236/Rec 235).

258 Fundamentals of Cooking and Dining Room Service 2 (0-6) Prereq FSHN 120. Practical applications of cooking techniques, dining room service, and restaurant operations including safety, sanitation, flow of goods and industry trends.

280 Lodging Systems and Procedures 3 Management functions relating to the planning and operational policies of various hotel departments.

284 Managed Services 3 Management systems of the segment of the hospitality industry relating to contract and self-operated management companies.

301 Introduction to Conventions and Meetings Industry 3 Prereq junior standing. Overview of industry, including elements, 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. 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.


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.

387 International Tourism 3 International and domestic tourism; effects of tourism on the society.

388 Association Management 3 Prereq H A 301. Theory, organization, structure and management of voluntary associations; economics and role in convention industry.

400 Convention Facilities Management 3 Prereq H A 301. Politics, siting, design, construction, organization and management of public assembly facilities, including private structures.

458 Advanced Culinary Management and Catering 3 Prereq H A 358. Advanced kitchen/dining room management with emphasis on culinary skill development and the planning and administration of catering events.


491 Operational Analysis 3 Prereq Acctg 231; Dec S 215; Fin 325. Using management tools in analyzing operational effectiveness of hotel and restaurant organizations.

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.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

HUMAN DEVELOPMENT EMPHASIS OR FAMILY EMPHASIS DEGREE PROGRAMS (120 HOURS)

<table>
<thead>
<tr>
<th>First 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>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S, K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science [B, P, Q] (GER)²</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>Arts &amp; Humanities [H,G] or Social Sciences [S, K] (GER)</td>
<td>3</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>H D 201</td>
<td>3</td>
</tr>
<tr>
<td>H D 204</td>
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<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biological [B] Sciences (GER)</td>
<td>3 or 4</td>
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<tr>
<td>H D 203³</td>
<td>3</td>
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<tr>
<td>H D Elective</td>
<td>3</td>
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<tr>
<td>Intercultural [I, G, K] (GER)</td>
<td>3</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<thead>
<tr>
<th>Sophomore Year</th>
<th>Hours</th>
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<tbody>
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<td>H D 201³</td>
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</tr>
<tr>
<td>H D 310³</td>
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<tr>
<td>Minor Elective⁴</td>
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<tr>
<td>Physical [P] Sciences (GER)</td>
<td>3 or 4</td>
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<tr>
<td>Elective</td>
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<thead>
<tr>
<th>Junior Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>H D Elective</td>
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<tr>
<td>Minor Elective⁴</td>
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</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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</table>

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 two emphasis areas. The first emphasis is human development. Within this emphasis students prepare to work with children, adolescents, or older adults in a variety of professional settings. These may include positions in foster parent programs, adoption agencies, various child welfare settings, and social service, resource management, or pre-family therapy.

The department also offers a Master of Arts degree in Human Development. More information is available from the graduate school.

The outline below describes a course of study leading to a degree of Bachelor of Arts in Human Development: with emphasis in either human development or family.

Additionally, two minors are offered; one in general human development and one in early childhood (see description below).

HUMAN DEVELOPMENT EMPHASIS OR FAMILY EMPHASIS DEGREE PROGRAMS (120 HOURS)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H, G] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Social Sciences [S, K] (GER)²</td>
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</tr>
<tr>
<td>Science [B, P, Q] (GER)²</td>
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<th>Second Semester</th>
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<td>Communication Proficiency [C, W] (GER)</td>
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<tr>
<td>H D 201</td>
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<tr>
<td>H D 204</td>
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<table>
<thead>
<tr>
<th>Junior Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>H D Elective</td>
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<td>Electives</td>
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<tr>
<td>Complete Writing Portfolio</td>
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</table>
Second Semester | Hours
---|---
H D Electives | 6
Minor Electives \(^1\) | 6
Elective | 3

**Senior Year**

First Semester | Hours
---|---
H D 330 | 2
H D Elective | 3
Minor Elective \(^1\) | 3
Tier III Capstone (GER) | 3
Elective | 3

**Second Semester** | Hours
---|---
H D 410 [M] | 3
H D 446 \(^2\) or 498 \(^3\) | 4 or 6
Minor Elective | 3
Electives | 6

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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. Students in the Human Development Emphasis should take H D 420 [M]; students in the Family Emphasis Program should take H D 320.
6. H D 446 requires a half-day each day, 5 days a week for a semester and can be put into the schedule any-time after taking H D 342.
7. The internship course (H D 498) can be taken during the summer semester of the junior or senior year.
8. H D 350 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 DEGREE PROGRAM (126 HOURS)**

### Freshman Year

**First Semester**

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<td>FSHN 130 [B] (GER)</td>
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<td>H D 201</td>
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<td>Math [N] (GER)</td>
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**Second Semester**

<table>
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<tbody>
<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>H D 202 (^1)</td>
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<tr>
<td>H D 204</td>
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<tr>
<td>Physical Sciences [P] (GER) (^2)</td>
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<tr>
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**Sophomore Year**

**First Semester**

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<td>AMT Elective (^3)</td>
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**Freshman Year**

**First Semester**

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<tr>
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<th>Hours</th>
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<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>Gen Ed 110 [A] (GER)</td>
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</tr>
<tr>
<td>H D 101</td>
<td>3</td>
</tr>
<tr>
<td>Psych 105 [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science [B, P, Q] (GER) (^4)</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Gen Ed 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H D 201</td>
<td>3</td>
</tr>
<tr>
<td>H D 204</td>
<td>3</td>
</tr>
<tr>
<td>Soc 101 [S,K] (GER)</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>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Engl 201 [W] (GER) (^4)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Second Semester | Hours
---|---
H D 341 \(^2\) | 3 |
Math 251 \(^2\) | 3 |
Mus 153 [H] (GER) \(^3\) | 3 |

**Junior Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kin 473</td>
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</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EdPsy 401</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 307</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 320/321</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 385</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 403</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 483</td>
<td>2</td>
</tr>
</tbody>
</table>

**Senior Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>F A 390</td>
<td>2</td>
</tr>
<tr>
<td>H D 350 (^2)</td>
<td>3</td>
</tr>
<tr>
<td>H D 446 (^2)</td>
<td>6</td>
</tr>
<tr>
<td>Intercultural Studies [I,G,K] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>H D 410</td>
<td>3</td>
</tr>
<tr>
<td>H D 430</td>
<td>3</td>
</tr>
<tr>
<td>H D 449</td>
<td>3</td>
</tr>
<tr>
<td>Sp Ed 301</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Directed Teaching**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>T &amp; L 415</td>
<td>16</td>
</tr>
</tbody>
</table>

1. FSHN 130 [B] is strongly recommended.
2. Engl 201, H D 341, 342, and Math 251 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. Courses are only offered during this semester each year.
5. H D 446 requires a half-day each day, 5 days a week for a semester and can be put into the schedule any-time after taking H D 342.
6. The internship course (H D 498) can be taken during the summer semester of the junior or senior year.
7. H D 330 should be taken no more than one to two semesters before taking the internship.

**PRESCHOOL THROUGH THIRD GRADE (P-3) CERTIFICATION DEGREE PROGRAM (135 HOURS)**

**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>Gen Ed 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H D 101</td>
<td>3</td>
</tr>
<tr>
<td>Science [B, P, Q] (GER) (^4)</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Gen Ed 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H D 201</td>
<td>3</td>
</tr>
<tr>
<td>H D 204</td>
<td>3</td>
</tr>
<tr>
<td>Soc 101 [S,K] (GER)</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>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Engl 201 [W] (GER) (^4)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester** | Hours
---|---
H D 302 | 3 |
H D 342 \(^2\) | 4 |
Math 252 [N] (GER) | 3 |
Physical Sciences [P] (GER) | 3 or 4 |
T & L 300 | 1 |

**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 101, 201, 204, 302, 341, 342, 449; plus one of: H D 403, 410, or 420. Complete-
Description of Courses

Human Development

H D

101 [S] Human Development Across the Lifespan 3 Overview of lifespan development from a psychosocial ecological perspective; individuals, families, organizations, and communities and their interrelationships.

201 Human Development - Prenatal Through Age 8 3 In-depth examination of growth and development from the prenatal period through age 8 in context of family, community and society.

202 Human Development - Middle Childhood Through Adolescence 3 In-depth study of school-age child and adolescent; observation and volunteer experience; theories and their application.

203 Human Development - Adulthood Through the Older Years 3 In-depth study of individual development from young adulthood through later years within the social context of family and community.


205 [C] Communication in Human Relations 3 (2-2) Developing an understanding of human behavior and learning skills in communication and leadership.

300 Child Abuse and Neglect 3 Prereq 6 hours in 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 systemic 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.

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 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.

341 Learning and Guidance in Early Childhood 3 Prereq H D 101 or 201; 204. Theories of child guidance; understanding of child behavior; strategies and techniques for effective group and individual guidance of young children.

342 Curriculum for Early Childhood Programs 4 (3-3) Prereq H D 101, 201, 341. Planning and implementation of developmentally appropriate curriculum for use in programs serving young children.

343 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 [M] 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 and age groups and individuals in various settings.

360 Death and Dying 3 Prereq 6 hours in Anth, H D, Psych, or Soc. Death and dying throughout life and in different contexts; manner of death, grief, and legal and ethical considerations.

401 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.

407 Directed Teaching, Agriculture and Home Economics V 4-10 Same as Ag Ed 407.

408 Advanced Adolescent Development 3 Prereq 6 hours in Anth, H D, Psych, or Soc. In-depth examination of theories and research; development 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.

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.

430 Professional Skills for Working with Individuals and Families 3 Prereq 3 hours in H D; junior standing. Development of skills important for effective professional; 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.

499 Seminar in Early Childhood Education V 1–4 May be repeated for credit; cumulative maximum 4 hours. Prereq H D 341, 342. Identification and examination of current issues and trends in early childhood education with emphasis on child, family, and community concerns.

464 Administration of Early Childhood Programs 3 Organization, administration, and management of early childhood programs; finance, program development, service delivery, personnel concerns, resource development, and evaluation. Available ONLY as a Distance Learning Flexible Enrollment Course.


482 Child Assessment and Evaluation 3 Prereq H D 201; 6 additional hours in H D. Understanding aspects of assessment and evaluation of young children; selection, administration, summary development, ethics and professional responsibilities, evaluation and follow-up.

485 Participation in Human Development Research V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq 9 hours in H D; junior standing. Supervised participation in faculty research including data collection, analysis, literature review, preparation of findings. S, F grading.

487 Special Topics in Human Development V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours in Anth, H D, Psych, or Soc. Assessment and evaluation of families and children.

495 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 4 hours. By interview only. Opportunity to assist with instruction; experience in further study of topic, organization of material, grading, management of resources. S, F grading.

498 Field Placement V 4 (0-12) to 8 (0-24) May be repeated for credit; cumulative maximum 8 hours. By interview only. Prereq H D 330. Self-initiated, supervised work experience with appropriate private organizations, businesses, or government agencies; interaction with professionals in related fields. S, F grading.

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

506 Work and Family 3 Graduate-level counterpart of H D 406; additional requirements. Credit not granted for both H D 406 and 506.

510 Seminar in Human Development I Introduction to human development within 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/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.

535 Program Development in Child, Family, and Consumer Studies 3 Prereq graduate standing. Analysis and development of program delivery systems, curricula and evaluation models. Cooperative course taught by UI (FCS 554), open to WSU students.

540 Effective Intervention Programs 3 Prereq H D 530. Innovative effective prevention and intervention programs from theoretical, applied, and outcome evaluation perspectives.

550 Seminar on Family Relationships 3 Prereq graduate standing. Survey of family studies topics and issues examined from a research point of view.

558 Advanced Parent-Child Relationships 3 Prereq graduate standing. The developing family; patterns of child rearing. Cooperative course taught by UI (FCS 540), open to WSU students.

560 Seminar in Child Development 3 Prereq graduate standing. Survey of literature on selected areas in child development; discussion of research and application related to current issues and trends.

570 Families and the Economy 3 Prereq graduate standing. Family/household as an earning and consuming unit; theoretical and policy approaches to income and household production and consumer behavior.

575 Family Resource Management 3 Prereq graduate standing. Management of economic and human resources with focus on family structure in all socioeconomic and age groups. Cooperative course taught by UI (FCS 560), open to WSU students.

580 Families, Community and Public Policy 3 Prereq H D 513, 514, or approved graduate research methods course. Analysis of family policy research; role of family policy research in public policy and knowledge building processes. Cooperative course taught by WSU, open to UI students (FCS 550).

586 Special Topics in Human Development V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Assessment and evaluation of families and children.

595 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 8 hours. Prereq senior standing. Supervised instructional practicum for departmental majors. S, F grading.

598 Professional Internship 3 Prereq H D 510. Supervised individual experiences with related organizations, businesses, or government agencies; opportunities for interaction with professionals in related fields. S, F grading.

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

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

### Humanities Courses

The humanities curriculum consists of a series of interdisciplinary courses designed to introduce students to some of the basic concepts of civilization through the study of representative masterpieces of literature, music, art, and related fields. The courses numbered 101, 302, 303, and 304 provide a survey of western civilization from ancient times to the twentieth century. English majors may elect 300-400-level humanities courses within the concentration in World Literature/Humanities.

Using Humanities courses as part of General Studies-Humanities Major

WSU-Pullman students who are interested in the interdisciplinary study of culture can use a number of the courses listed below as a minor concentration in a degree program in General Studies-Humanities. A recommended sequence would include at least three from Hum 101, 302, 303, 304, which provide students a survey of arts and thought from ancient times to the present. Any of the other humanities courses, including the study-abroad option, could be used as well. Students at branch campuses, who want a coherent minor concentration in humanities, should consult their 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.

**Hum 103** [H] Mythology 3 The theory of mythology and use of myths in art, literature, and music; Graeco-Roman and one other.

**Hum 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.

211 Topics in Humanities—Study Abroad 3

222 Topics in Humanities—Study Abroad 3

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 Eng 335.

338 Topics in Humanities 3 May be repeated for credit; cumulative maximum 6 hours. Interdisciplinary, international topics in the humanities (art, architecture, music, literature, philosophy, film).

340 [H] American Foundings 3 Examination of the differing assumptions about the nation in such founding texts as The Federalist Papers and Emerson’s Essays.

410 [H] Love in the Arts 3 Prereq completion of one Tier I and three Tier II courses. Concepts of love around the world and in history through literature, art, music, dance, and theater.

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

#### Interdisciplinary University Courses

**Description of Courses**

**University**

**Univ 100/101 College Majors and Career Choice** 1 Career development and the decision-making process; exploration of academic majors and careers.

**Preparation for College Teaching** 2 Prereq graduate student/TA appointment. Cross-discipline instructional development for graduate teaching assistants; course development teaching techniques, university policies and procedures. S, F grading.

**Interdisciplinary Studies** 1 May be repeated for credit. Contemporary issues in interdisciplinary education and research. Open to all interested students.

**Interdisciplinary Ethical Issues in Graduate Study** 3 Prereq graduate standing. Research and discussion of ethical issues arising in graduate study across disciplinary lines.
598 Interdisciplinary Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Prereq Univ 591. Seminar on theory and practice of advanced interdisciplinary doctoral study.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For Interdisciplinary PhD only. S, F grading.

Department of Kinesiology and Leisure Studies

Associate Professor and Department Chair, E. Uld; Professors, L. Bruya, K. DePaulo; Associate Professors, D. Albright, S. Blank, R. Doornink, M. Mowatt, R. Peavy; Assistant Professors, C. Christie, E. C. Johnson, Z. Zweifel.

Degrees

The Department of Kinesiology and Leisure Studies offers two undergraduate degrees: the Bachelor of Science in Kinesiology and the Bachelor of Arts in Recreation Administration and Leisure Studies. These degrees offer opportunities for studying biological, physical, psychological, and social mechanisms contributing to human development as it relates to movement and leisure studies/services.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

Departmental Undergraduate Degrees

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 the Bachelor of Science in Kinesiology and Bachelor of Arts in Recreation Administration and Leisure Studies.

BACHELOR OF SCIENCE IN KINESIOLOGY

The three kinesiology majors (athletic training, exercise science, and kinesiology) share core kinesiology and health courses. The kinesiology core is composed of a broad spectrum of courses designed to expose students to a variety of experiences, concepts, and philosophies. A grade of C or better must be obtained in all core courses. In addition, each major has a specialized curriculum designed to meet the requirements of the appropriate professional experience in which the student is interested.

Professional Core for the Bachelor of Science in Kinesiology.

GER Courses. Specific to each major. Kinesiology Core Courses required for Athletic Training, Exercise Science, and Kinesiology.


ATHLETIC TRAINING DEGREE PROGRAM (121 HOURS)

Accredited by the Commission on Accreditation of Allied Health Education Programs, the athletic training curriculum is designed to provide students with the necessary academic and clinical competency required to be certified by the National Athletic Trainers’ Association. All students majoring in athletic training will complete the kinesiology core, the athletic training major course work, and 1200 hours of clinical internship experience.

Because of curriculum accreditation guidelines for student/faculty ratio, the program admits a limited number of students in the clinical internship. Application into the clinical internship occurs in the second semester of the freshman year. Academic requirements for this application process include but are not limited to 1.) completion of H Ed 363, Kin 262, 266, and 2.) a minimum g.p.a. of 2.8. Students are advised to consult with athletic training advisors early in their academic careers for specific application procedures. Internship experiences combine the theory and management of sport-related injury/illness under the direct supervision of certified athletic trainers. Twelve hundred hands-on clinical hours are arranged over five semesters within collegiate, High School Athletic Training facilities, and sport medicine centers.

Students are expected to maintain high academic standards and clinical competence to remain a part of the athletic training student clinical staff. Specific policies and procedures governing the clinical experience are available through athletic training advisors.

Freshman Year

First Semester Hours
Engl 101 [W] (GER) 3
Kin 199 3
Kin 262 4
Kin 364 3
PEACT 112 1
Psych 105 [S] (GER) 3

Second Semester Hours
Ath T 266 2-3
Bio S 102 [B] or 103 [B] (GER) 4
ComSt 102 [C] (GER) 3
H Ed 363 3
PharP 217 2

Sophomore Year

First Semester Hours
Ath T 390 or 391 1
Ath T 491 3
Chem 101 [P] (GER) 4
FSHN 130 [B] or 233 3
GenEd 110 [A] (GER) 3
H Ed 361 3

Second Semester Hours
Ath T 390 or 391 1
Ath T 400 Series† 3
GenEd 111 [A] (GER) 3
Kin 311 3
Kin 362 3
Zool 251 4

Junior Year

First Semester Hours
Arts & Humanities [H,G] (GER) 3
Ath T 400 Series† 3
Ath T 492 3
Kin 463 4
Math 205 [N] (GER) 3
Complete Writing Portfolio

Second Semester Hours
Ath T 305 3
Ath T 400 Series† 3

Intercultural [L,G,K] (GER) 3
Kin 484 3
Soc 101 [S] (GER) 3

Senior Year

First Semester Hours
Ath T 400 Series† 3
Ath T 493 3
Kin 461 3
Zool 315 (Recommended) 3
Electives 3

Second Semester Hours
Ath T 400 Series† 3
Kin 415 3
RLS 482 or SpMgt 477 3
Tier III Capstone (GER) 3
Electives 3

† Ath T 400 Series are chosen from Ath T 465, 466, 467, 468, and 469 in consultation with an advisor.

EXERCISE SCIENCE

The Exercise Science program is designed to train students for employment in clinical medicine and/or the physical fitness industry. To accommodate individual student goals, the Exercise Science program offers two tracks: 1) Clinical/Basic Physiology, and 2) Fitness/Applied Physiology. WSU graduates from either the Exercise Science Clinical/Basic Physiology track or the Fitness/Applied Physiology track are prepared to work in a clinical setting or the physical fitness industry as exercise specialists in cardiopulmonary rehabilitation programs, corporate fitness programs, fitness centers, or private health clubs.

In addition, the Clinical/Basic track prepares students to enter graduate programs in exercise science, physiology, or in allied health career fields such as physical therapy, physician’s assistant, nursing, which require significant coursework in the sciences.

FIRST AND SECOND YEAR REQUIREMENTS

The first two years are common to both exercise science degree programs:

Freshman Year

First Semester Hours
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
Kin 262 4
PEACT 112 1
Psych 105 [S] (GER) 3

Second Semester Hours
Chem 102 [P] or 106 [P] (GER) 4
ComSt 102 [C] (GER) 3
ExSci 364 3
GenEd 110 [A] (GER) 3
Kin 199 3

Sophomore Year

First Semester Hours
Bio S 102 [B] or 103 [B] (GER)† 4
ExSci 370 1
GenEd 111 [A] (GER) 3
Math Proficiency [N] (GER) 3
Zool 251 4

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
Ath T 311 3
### Elective Core
- Chem 240: 4
- Degree Program Course: 2 or 4
- ExSci 380: 3

1. For the clinical/basic physiology degree program, take Bio S 103. For the fitness/applied degree program, take Bio S 102.
2. For the clinical/basic physiology degree program, take Bio S 104. For the fitness/applied degree program, take 2 credits of PEACT.

### EXERCISE SCIENCE, CLINICAL/BASIC PHYSIOLOGY DEGREE PROGRAM (131 HOURS)

#### Junior Year

**First Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- ExSci 370 1
- ExSci 463 4
- Kin 484 3
- Phys 101 [P] (GER) 4
- Complete Writing Portfolio

**Second Semester**
- ExSci 370 1
- ExSci 480 3
- H Ed 363 2
- Kin 362 3
- Kin 461 [M] 3
- Tier III Capstone (GER) 3

**Summer of Fourth Year**
- ExSci 491 12

### KINESIOLOGY DEGREE PROGRAM (120 HOURS)

The kinesiology curriculum is designed to provide students with the education basis for successfully pursuing a professional career in movement-related fields. Students must demonstrate proficiency in four of five activity areas: aquatics, individual/dual sports, team sports, dance and gymnastics-related. Students will have an excellent foundation to continue for their teaching certification and/or master's degree in teaching physical education.

#### Freshman Year

**First Semester**
- ExSci 370 1
- ExSci 476 3
- H Ed 361 3
- Kin 415 3
- Kin 461 [M] 3
- Recommended Course (optional) 3

**Second Semester**
- H Ed 363 2
- Kin 362 3
- Kin 461 [M] 3
- Tier III Capstone (GER) 3

**Senior Year**

**First Semester**
- Phys 101 [W] (GER) 3
- FSHN 130 [B] (GER) or 233 3
- ExSci 370 1
- ExSci 480 3
- H Ed 363 2
- Kin 199 3
- Psych 105 [S] (GER) 3
- PEACT 112 1

**Second Semester**
- Arts & Humanities [H,G] (GER) 3
- Biol S 103 [B] (GER) 4
- GenEd 110 [A] (GER) 3
- RLS 285 3

**Junior Year**

**First Semester**
- ExSci 380 3
- Eng 101 [W] (GER) 3
- FSHN 130 [B] (GER) or 233 3
- H Ed 363 2
- Kin 262 3
- Kin 364 3
- PEACT Elective 1

**Second Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- GenEd 111 [A] (GER) 3
- H Ed 361 3
- Intercultural [I,G,K] (GER) 3
- PEACT Elective 1

### BACHELOR OF ARTS IN RECREATION ADMINISTRATION AND LEISURE STUDIES

No new students are being accepted into the Recreation Administration and Leisure Studies major at this time. Contact the department for further information.

A National Recreation and Parks Association accredited degree program, the recreation administration and leisure studies curriculum is designed to provide a broad-based professional preparation to students entering the recreation and leisure service profession. All students majoring in RLS must complete a core program of general education and professional recreation administration and leisure studies requirements. Additionally, each student will design an area of concentration based on the student’s professional goals. Theory and practice are combined to prepare the student for employment in recreation administration and leisure services. A total of 1000 hours of documented practical experience is required of all RLS majors prior to their enrollment in RLS 491, Internship. A minimum of 180 hours of the 1000 hours are completed through credited practica. The remaining 820 hours may be accumulated through a variety of approved practical experiences. Field experiences may be paid or voluntary. No student will be allowed to begin the internship experience if that student’s cumulative g.p.a. is less than the current grade point standard at the completion of that student’s course of study.

At least 40 of the total hours required for the Bachelor of Arts degree in Recreation Administration and Leisure Studies must be in 300-400-level courses.

To be eligible to certify as a recreation administration and leisure studies major, a student must have earned at least 30 semester hours of credit on graded course work and meet the current standards of 1.) cumulative g.p.a. or 2.) g.p.a. based on at least 15 hours of RLS core courses. Full details are available from the department. If the cumulative g.p.a. of a certified major in RLS falls below the current standard any time after certification and the student becomes deficient under Academic Regulations 37, 38, or 39, that student will be decertified. Certification will be reinstated when the student’s cumulative g.p.a. returns to the current standard and criteria established for recertification are met.
A grade of C or better must be obtained in all RLS professional core classes.

A major in RLS may secure a second degree by meeting the requirements of the subject-matter area and presenting not less than the 150 semester hours.

Degrees: The department offers courses of study leading to a Bachelor of Arts in Recreation Administration and Leisure Studies. A Master of Arts degree is available for those wishing to pursue advanced degree work in Recreation Administration and Leisure Studies.

RECREATION ADMINISTRATION AND LEISURE STUDIES DEGREE PROGRAM (132 HOURS)

Freshman Year

**First Semester**
- RLS 482 3
- RLS 488 3
- Tier III Capstone (GER) 3
- Kin 491 Internship 10-12

**Second Semester**
- RLS (Practicum) 4 1
- Math Proficiency [N] (GER) 3
- GenEd 110 [A] (GER) 3
- Engl 101 [W] (GER) 3
- (132 HOURS)

LEISURE STUDIES DEGREE PROGRAM

The department offers courses of study leading to a Bachelor of Arts in Recreation Administration and Leisure Studies. A Master of Arts degree work in Recreation Administration and Leisure Studies. Current graduate school admissions require applicants without an appropriate undergraduate degree of ability to complete advanced academic work. Applicants must be required to complete supplemental course work. Current graduate school admission requirements govern departments admission decisions.

Departmental Minors

**Exercise Science, Clinical/Basic Physiology:**

**Exercise Science, Fitness/Applied Physiology:**

**Health and Wellness:**
FSHN 130, H Ed 361, 363, PEACT (2 hours), Kin 364, PharP 217; 3 hours from H D 203, 305, or Psych 363; one of: ES/RP 101, Psych 220, or 230. Total: 21 or 22 hours.

**Recreation Administration and Leisure Studies:**
RLS 275, 285, 375; select 6 hours from RLS 341, 342, 343, 383; select 6 hours from RLS 419, 423, 475, 481. Practicum credit will strengthen this minor. Total: 21 hours.

**Sport Management:** See Department of Educational Leadership and Counseling Psychology.

**Strength Training:**

Transfer Students

Transfer students should note the sequence of professional requirements in specialized areas. Sequences are designed to provide progression from one course to another. For information regarding acceptability of professional courses taken at other institutions, prospective students should communicate with the departmental chair.

Preparation for Graduate Study

Admission to graduate study requires 1.) a bachelor's degree in one of the fields represented in the department or an appropriate related field and 2.) evidence of ability to complete advanced academic work. Applicants without an appropriate undergraduate degree will be required to complete supplemental course work. Current graduate school admission requirements govern departments admission decisions.

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.

Physical Education Activity

**PEACT**
- 102 Beginning Conditioning ROTC
- 105 Beginning Wrestling
- 106 Self Defense
- 107 Beginning Judo
- 108 Karate
- 112 Weight Training S. F grading.
- 114 Beginning Gymnastics
- 116 Gymnastics
- 118 Adapted Physical Education
- 119 Aerobic Dance S, F grading.
- 120 American Social Dance Men
- 121 American Social Dance Women
- 122 Beginning Ballet
- 124 Tap Dancing
- 126 Beginning Mod Dance
- 127 Beginning Jazz Dance
- 128 Beginning Swimming
- 130 Diving
- 131 Scuba Diving
- 132 Conditioning Swimming S, F grading.
- 133 Water Aerobics S, F grading.
- 134 Conditioning Skiing S, F grading.
- 135 Aqua Fitness
- 136 Boating Safety Instruction
- 139 Rowing S, F grading.
- 140 Jogging S. F grading.
- 141 Beginning Golf
- 143 Beginning Bowling
- 145 Beginning Fencing Men
- 146 Beginning Fencing Women
- 147 Beginning Rollerskating and Rollerblading
- 148 Beginning Badminton
- 150 Beginning Tennis
- 152 Pocket Billiards
- 153 Ultimate Frisbee
- 154 Beginning Racquetball
- 158 Beginning Volleyball
- 164 Beginning Soccer
- 174 Beginning Skiing S. F grading.
- 177 Intermediate Racquetball
- 181 Beginning Roller Hockey
- 200 Special Topics
- 201 Intermediate Conditioning ROTC
- 208 Intermediate Karate
- 220 Advanced Social Dance Men
- 221 Advanced Social Dance Women
- 222 Intermediate Ballet
- 224 Intermediate Tap Dance
- 227 Intermediate Jazz Dance
- 228 Intermediate Swimming
- 231 Advanced Scuba Diving
- 234 Emergency Water Safety
- 235 Lifeguarding
- 236 Lifesaving Recertification
- 241 Intermediate Golf
- 242 Advanced Golf
- 243 Advanced Bowling
- 245 Intermediate Fencing Men
- 246 Intermediate Fencing Women
- 247 Advanced Racquetball
- 250 Intermediate Tennis
- 251 Advanced Tennis
- 253 Advanced Ultimate Frisbee
Department of Kinesiology and Leisure Studies

258 Intermediate Volleyball
259 Advanced Volleyball
264 Intermediate Soccer
265 Advanced Soccer
266 Fly Fishing
274 Intermediate Skiing S. F. grading.
275 Advanced Skiing S. F. grading.
281 Intermediate Roller Hockey
282 Competitive Roller Hockey

Athletic Training

Ath T
266 (Kin) Care and Prevention of Athletic Injuries 3 (2-3) Prereq Kin 262 or c/l. Administration of school sports health care program; prevention, treatment, and rehabilitation of sports injuries.

305 Nutrition Related to Fitness and Sport 3 Prereq FSHN 130 or 233. Identification of energy, macro/micro nutrient and fluid requirements during exercise; evaluation of dietary regimens and ergogenic aids for pre and post competition, weight maintenance, and wellness. Cooperative course taught by UI (H&S 305), open to WSU students.

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 Kin 311. Advanced methods as they apply to the enhancement of athletic performance, injury prevention, rehabilitation and general fitness.

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 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Prereq Ath T 266, Kin 262. S, F grading.

491 Athletic Training Clinical Internship I 3 (0-9) By interview only. Beginning techniques in management of sport injury/illness under supervision of a certified athletic trainer. S, F grading.

492 Athletic Training Clinical Internship II 3 (0-9) By interview only. Intermediate techniques in management of sport injury/illness under supervision of a certified athletic trainer. S, F grading.

493 Athletic Training Clinical Internship III 3 (0-9) By interview only. Advanced techniques in management of sport injury/illness under supervision of a certified athletic trainer. S, F grading.

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

Exercise Science

ExSci
364 (Kin) Fitness 3 (2-3) Physiological, mechanical, and health-related basis of fitness practices.


380 Introduction to Exercise Physiology 3 Prereq Zool 251. Introduction to exercise physiology as it relates to sport, physical training, and performance.

463 (Kin) Physiology of Exercise 4 (3-3) Prereq ExSci 380, Kin 262 or Zool 315; Zool 251. Advanced undergraduate exercise physiology with emphasis on mechanisms regulating physiological responses to exercise across the life span.

470 (Kin) [M] Exercise Science Laboratory Techniques 3 (2-3) Prereq ExSci 380. Routine exercise physiology field and laboratory techniques.

476 (Kin) Exercise Testing and Prescription 3 (2-3) Prereq ExSci 463. Principles of exercise testing and prescription based on current practices in physical education, physiology, and rehabilitation.

480 Introduction to Cardiac Rehabilitation 3 (2-3) 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.

Health Education

H Ed
361 Health and Wellness 3 Knowledge of the multi-dimensional aspects of wellness and concepts necessary for a positive lifestyle through self-assessment.

363 First Aid 2 (1-3) First aid; CPR; accident prevention; American Red Cross certification awarded to those who qualify.

463 Methods of First Aid Instruction 2 (1-3) Prereq Red Cross first aid and CPR certificate. Red Cross Standard First Aid and CPR instructor training; certification to those who qualify.

490 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Same as Kin 490. S, F grading.

496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 9 hours. Special topics in health.

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

Kinesiology

Kin
196 Introductory Topics 1 May be repeated for credit; cumulative maximum 4 hours. Physical education, leisure, recreation, dance, health sports.


262 Human Anatomy 4 (3-3) Comprehensive survey of the structure and organization of the human body; emphasis on skeletal muscular, cardiovascular, nervous, and respiratory systems. Cooperative course taught by WSU, open to UI students (PE 261).

289 Introduction to Youth Sports 2 Same as RLS 289.

296 Applied Computer Technology 1 (0-3) Application of scholarly concepts with the help of multimedia technology.

311 Strength Training 3 Prereq Kin 262, 364, PEACT 112. Basic information and guidelines for the enhancement of athletic performance, injury prevention, rehabilitation and general fitness.


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; Kin 262 or Zool 315; math proficiency requirement. Anatomical and mechanical influences on human movement.

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. By interview only. Supervised practicum. S, F grading.

1 Combined maximum for Kin and RLS 300-level practicum courses 8 hours.
Department of Kinesiology and Leisure Studies

392 Practicum in Physical Education 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.

393 Practicum in Special Populations V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. S, F grading.

415 Assessment 3 (2-3) Prereq senior in KLS. Program evaluation of human techniques for curriculum pertaining to human movement.

461 [M] Motor Skill Acquisition 3 Motor learning and motor control areas; neural mechanisms, practice, feedback, retention, and transfer application of theoretical concepts.


475 Marginality and Movement 3 Understanding of the current status of women’s sports participation in the U.S. and of the woman participant herself.

481 Analysis of Human Movement 3 (2-3) Development of knowledge and skills which assist the physical education teacher in planning or responding to student skill learning.

483 Management and Methods of Teaching Physical Education 3 (2-3) Prereq Kin 481 or c/l. Management and control, teaching styles, methods, lesson design, discipline, with application in teaching labs. Cooperative course taught by WSU, open to UI students (PE 320, 321).

484 Principles of Movement for Individuals with Disabilities 3 Knowledge, understanding, and skills for teaching movement activities to individuals with disabilities.

490 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. S, F grading.

496 Special Topics 1 May be repeated for credit; cumulative maximum 4 hours. Physical education, leisure, recreation, dance, health sports.

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

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 Neurophysiological components of normal and abnormal motor behavior as a result of neurological impairments/dysfunction in children through the aged. Cooperative course taught by WSU, open to UI students (PE 552).

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/risk of exercise in youth, adults, women and ethnic groups.

562 Pediatric Exercise Physiology 3 Rec Kin 463. Influences of physical development on physiological responses of children and adolescents to exercise and training.

563 Exercise and Immune Response 3 Rec Kin 463. Influence of physical exercise on immune response and consequent impact on host susceptibility to disease and infection.

564 Mechanical Analysis of Motor Activity 3 Prereq Kin 362. Fundamental laws of mechanisms applied to motor activities. Cooperative course taught by WSU, open to UI students (PE 564).

565 Advanced Physiology of Exercise 1 3 Rec Kin 463. Bioenergetic, striated muscle metabolic, and neuroendocrine responses to exercise and training.

566 Biomechanics 3 Prereq Kin 564. Biological and mechanical aspects of human movement. Cooperative course taught by WSU, open to UI students (PE 566).

567 Advanced Physiology of Exercise II 3 Rec Kin 463. Pulmonary, circulatory, thermoregulatory, fluid balance and physiological system integration responses to exercise and training.

568 Fitness Assessment and Prescription 3 Prereq Kin 463. Development of skills in testing analysis, and prescription for health-related fitness. Cooperative course taught by UI (PE 593), open to WSU students.

573 Philosophical Perspectives of Sport and Physical Activity 3 Ontological, ethical, aesthetic views of physical activity.

574 Social and Cultural Issues of Physical Activity and Sport 3 Exploration, analysis and understanding of human movement in the context of the individual, cultural, and physical environments.

575 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 532).

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).


589 Research Techniques 2 (1-3) or 3 (2-3) Application and use of research techniques and tools in physiology of exercise.

590 Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Internship in educational, industrial, municipal or private sports or recreational setting; direct participation in tasks, research and reporting activities. S, F grading.

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.

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.

596 Seminar 1 or 2 May be repeated for credit.

597 College Teaching: Physical Education I 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.

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.

Recreation and Leisure Studies

RLS 110 Recreation for Special Populations 3 History, etiology, characteristics, services, resources, professional competencies and opportunities; recreation programs. Credit not granted for both RLS 110 and 383. Cooperative course taught by UI (Rec 110), open to WSU students.


229 Nature and the American Experience V 1-6 May be repeated for credit; cumulative maximum 6 hours. Study of nature writings and the integration of these writings with natural setting observations.

230 Principles of Therapeutic Recreation 3 Prereq RLS 110. Philosophy, design, and development of recreation programs for persons with disabling conditions; theory and rationale of therapeutic recreation. Cooperative course taught by UI (Rec 230), open to WSU students.

275 Leisure in Society 3 The leisure movement in society; history, philosophies, trends; socioeconomic values; professional responsibilities within governmental and nongovernmental agencies.

284 Recreation Activities 2 (1-3) Development of theories, knowledge, and skills in a variety of recreation activities.

285 Recreation Leadership 3 (2-3) Theories and techniques of leadership.

288 American Outdoor Recreation Areas V 1-6 May be repeated for credit; cumulative maximum 6 hours. Field and readings in outdoor recreation administrative, managerial, and planning practices.
Introduction to Youth Sports 2 Coaching philosophy; sport psychology, conditioning, and pedagogy; physiology; legal aspects; recreational youth sports programs.

Social Psychology of Leisure and Recreation 3 Prereq Psych 105, Soc 101 or 102; RLS 275, 285; certified major in RLS. Presentation, interpretation and discussion of research and literature related to the social psychological aspects of leisure and recreation.

Therapeutic Recreation Programs for People with Disabilities 3 Prereq RLS 110. Prevalent disabling conditions (including etiology, symptomatology, and characteristics), and their implications for programming intervention in clinical settings. Field trip required. Cooperative course taught by UI (Rec 330), open to WSU students.

Commercial Recreation 3 Prereq RLS 275, 285. Identification, organization, and functions of the various types of commercial recreation businesses; marketing recreation and leisure services.

Therapeutic Recreation in Psychiatric Settings 3 Prereq 10 hours outside experience. Therapeutic recreation delivery in psychiatric settings, including long-term settings such as state hospitals, acute inpatient psychiatric settings, and community mental health centers; major psychiatric disorders, how to work as a part of an interdisciplinary team, and the viable role of recreation in the treatment process. Cooperative course taught by UI (Rec 342), open to WSU students.

Assessment and Evaluation in Therapeutic Recreation 2 Standardized assessment and evaluation tools currently used in therapeutic recreation services; integration of assessment practices into therapeutic recreation programs and how to choose standardized tools appropriate to both client and professional setting; practical assessment situations. Cooperative course taught by UI (Rec 341), open to WSU students.

Recreation for the Elderly 3 Recreation programing for the elderly based on aging process, cultural influences, and psychological and social aspects. Cooperative course taught by UI (Rec 365), open to WSU students.

Wildland Recreation 3 Same as NATRS 371.

Recreation Programming 3 (2-3) Prereq RLS 285; certified major in RLS. Current principles and practices in recreation programming.

Therapeutic Recreation Service 3 Prereq RLS 285. Foundations for therapeutic recreation services, recreation services for special populations, people with disabilities and older adults. Credit not granted for both RLS 110 and 383.


Practicum in Commercial Recreation 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. S, F grading.

Practicum in Municipal/Agency 3 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. S, F grading.

Practicum in Parks/Facilities 3 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. S, F grading.

Practicum in Therapeutic Recreation 5 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. S, F grading.

Practicum in Leisure/Leisure Research 5 (0-3) to 4 (0-12) By interview only. May be repeated for credit; cumulative maximum 8 hours. Supervised practicum. S, F grading.

[MA] Assessment in Recreation and Leisure 3 Prereq RLS 321 or approved stat course; Rec Math 205. Designing, implementing, and interpreting the information generated by instruments which evaluate recreation and leisure needs, leisure service programs, and personnel.

Problems in Therapeutic Recreation 3 Problems encountered in the delivery of therapeutic recreation services to clients with special needs. Cooperative course taught by UI (Rec 435), open to WSU students.

Medical Terminology 1 Basic concepts of medical terminology and symbols related to working with people with disabilities. Cooperative course taught by UI (Rec 431), open to WSU students.

Comprehensive Planning and Operations in Leisure Services 3 Prereq RLS 321, 375. Techniques and problem solving in the planning and operation of leisure services. Credit not granted for both RLS 435 and 535.

Therapeutic Recreation for People with Developmental Disabilities 3 Prereq RLS 110. Programming models for people with developmental disabilities; TR intervention from developmental sequencing to community re-integration; assessment and treatment planning incorporated into lab experience. Field trip required. Cooperative course taught by UI (Rec 467), open to WSU students.

Physical Education for Grades K-8 2 (1-3) Same as Kin 473.

Leisure Services Administration I 3 Prereq RLS 375. Financing and organizing leisure services, with attention to public recreation agencies.

Leisure Services Administration II 3 Prereq RLS 375. Principles underlying the organization, management and administration of leisure service delivery systems.

Recreation Law and Risk Management 3 Prereq RLS 375. Legal issues relating to park and recreation administration and programming; risk management planning and implementation in park and recreation settings. Credit not granted for both RLS 482 and 582. Cooperative course taught by WSU, open to UI students.

Principles of Movement for Individuals with Disabilities 3 Same as Kin 484.


Instructional Practicum 3 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 6 hours. Same as Kin 490. S, F grading.

Internship 10-12 Prereq RLS 481, 488; 1000 hours practical experience. By interview only. Supervised practicum in agency or business. S, F grading.

Special Topics 3 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 6 hours.

Special Topics 1-3 May be repeated for credit; cumulative maximum 6 hours.

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

Current Trends in Leisure Services 1 Historical development and possible outcomes of current trends and issues in leisure services.

Program Development and Supervision 3 Leisure programming process including development and evaluation techniques; application of programming theory to the supervision of programs.

Administrative Perspectives 3 Administrative problems; communication skills; public relations, personnel motivation and management; interagency cooperation; community economic, political, and social environment. Cooperative course taught by WSU, open to UI students (Rec 522).

Assessment of Youth at Risk 2 Identification and administration of instruments used to identify youth at risk in educational, recreational, and community settings.

Administering the Recovery of Youth at Risk 2 Identification and administration of programs and delivery systems that best serve the needs of at-risk youth.

Adventuring Programming for Youth at Risk 2 (1-3) Development of adventure models, risk management consideration, activities and experiences for youth at risk. Field trip required.

Commercial Recreation Operations 3 Developmental potential, capital and managerial requirements, facility development, and sources of technical assistance.

Historical and Philosophical Analysis of Leisure 3 Past and current literature related to objectives and values of recreation; analysis of philosophical beliefs. Cooperative course taught by WSU, open to UI students (Rec 529).

Urban Outdoor Recreation 3 Problems, methods, and techniques of providing outdoor recreation opportunities in urban settings.

Social Psychological Perspectives of Leisure 3 Prereq graduate standing. Social psychological aspects of leisure and human development, leisure behavior, and methods of social psychological inquiry.

Comprehensive Planning and Operations in Leisure Services 3 Graduate-level counterpart of RLS 435; additional requirements. Credit not granted for both RLS 435 and 535.

Recreation Law and Risk Management 3 Graduate-level counterpart of RLS 482; additional requirements. Credit not granted for both RLS 482 and 582. Cooperative course taught by WSU, open to UI students (REC 582).

Internship V 3 (0-9) to 12 (0-36) 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.

Sport and Recreation Budget and Finance 3 Policies and practices involved in acquisition control and financial management in sport and recreation agencies. Cooperative course taught by UI (Rec 594), open to WSU students.

Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Topics related to recreation and leisure studies and service.

1Combined maximum for Kin and RLS 300-level practicum courses 8 hours.

Department of Kinesiology and Leisure Studies
Description of Course

Liberal Arts

Liberal Arts

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.

Program in Materials Science


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.

The Mathematics Department runs the Newton Microcomputer Laboratory where a variety of computers is available for students to do assignments in both basic and advanced courses. In addition, research is conducted using a wide variety of machines available to faculty and students.

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 with the 3.5-meter Apache Point Telescope which can be operated remotely from the WSU campus.

Entering freshmen are required to take the mathematics placement test for enrollment in basic courses.

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.

Department of Pure and Applied Mathematics


Department of Pure and Applied Mathematics

Honors students complete Honors Requirements in place of General Education Requirements.

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 150 or two of Cpt S 153, 203, 251; Engl 402 (students whose native language is not English may substitute Engl 403 for 402).
# FIRST SEMESTER REQUIREMENTS

The first semester requirements are common to all mathematics degree programs:

## Freshman Year

### First Semester | Hours
--- | ---
Freshman Science [B] (GER) | 4
Degree Program Course, if necessary | 3
Engl 101 [W] (GER) | 3
GenEd 110 [A] (GER) | 3
Math 171 [N] (GER) | 4

*Students in Actuarial Science take Econ 101 [S] (GER).*

## ACTUARIAL DEGREE PROGRAM (127 HOURS)

### Freshman Year

#### Second Semester | Hours
--- | ---
Cpt S 150 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 | Hours
--- | ---
Arts & Humanities [H,G] (GER) | 4
Math 220 | 2
Math 273 | 2
Math 300 | 3
Math 315 | 3
Math 360 | 3

### Junior Year

#### First Semester | Hours
--- | ---
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) | 3
Math 364 | 3
Math 420 | 3
Math 443 | 3
Tier III Capstone (GER) | 3
Complete Writing Portfolio | 3

#### Second Semester | Hours
--- | ---
Biological [B] or Physical [P] Sciences (GER) | 3
Intercultural [I,G,K] (GER) | 3
Math 300 | 3
Math 315 | 3
Math 360 | 3

### Senior Year

#### First Semester | Hours
--- | ---
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) | 3
Math 364 | 3
Math 420 | 3
Math 443 | 3
Tier III Capstone (GER) | 3
Electives | 3

### Sophomore Year

#### First Semester | Hours
--- | ---
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) | 3
Math 360 or 443 | 3
Math 398 | 3
Math 418 or 421 | 3
Electives | 3

### Junior Year

#### First Semester | Hours
--- | ---
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) | 3
Math 420 | 3
Math 443 | 3
Math 464 | 3
Tier III Capstone (GER) | 3
Electives | 3

### Senior Year

#### First Semester | Hours
--- | ---
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) | 3
Math 401 | 3
Math 416, 440, or 464 | 3
Electives | 3

## APPLIED STATISTICS DEGREE PROGRAM (124 HOURS)

### Freshman Year

#### Second Semester | Hours
--- | ---
ComSt 102 [C] (GER) | 3
Cpt S 150 or two of Cpt S 153, 203, or 251 | 4
GenEd 111 [A] (GER) | 3
Math 172 | 4
Social Sciences [S,K] (GER) | 3

### Sophomore Year

#### First Semester | Hours
--- | ---
Arts & Humanities [H,G] (GER) | 3
Math 220 | 2
Math 273 | 2
Math 300 | 3
Math 315 | 3
Math 364 | 3

## COMPUTATIONAL DEGREE PROGRAM (122 HOURS)

### Freshman Year

#### Second Semester | Hours
--- | ---
Cpt S 150 | 4
Cpt S 203 | 2
GenEd 111 [A] (GER) | 3
Math 172 | 4
Social Sciences [S,K] (GER) | 3

### Sophomore Year

#### First Semester | Hours
--- | ---
Arts & Humanities [H,G] (GER) | 3
Math 220 | 2
Math 273 | 2
Math 300 | 3
Math 315 | 3
Math 340 | 3
Math 443 | 3

---

Department of Pure and Applied Mathematics
Junior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biological [B] or Physical [P] Sciences (GER) 4
Engl 402 [W] (GER) 3
Math 364 or 416 3
Math 420 3
Complete Writing Portfolio

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Math 415 3
Math 421 [M] 3
Math 440 3
Electives 3

Senior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Math 402 [M] 3
Math 418 or 448 3
Math 472 3
Math/Stat Elective 3
Tier III Capstone (GER) 3

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Math 402 [M] 3
Math 418 or 448 3
Math 472 3
Math/Stat Elective 3
Tier III Capstone (GER) 3

OPERATIONS RESEARCH DEGREE PROGRAMS (122 HOURS)

Freshman Year
Second Semester Hours
ComSt 102 [C] (GER) 3
Cpt S 150 or two of Cpt S 153, 203, or 251 4
GenEd 111 [A] (GER) 3
Math 172 4
Social Sciences [S,K] (GER) 3

Sophomore Year
First Semester Hours
Arts & Humanities [H,G] (GER) 3
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4
Elective 3

Second Semester Hours
Biological [B] or Physical [P] Sciences (GER) 4
Intercultural [I,G,K] (GER) 3
Math 300 3
Math 315 3
Math 398 3
T & L 301 3

Junior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biological [B] or Physical [P] Sciences (GER) 4
Math 303 [M] or 420 3
T & L 317/318 3
T & L 328 3
T & L 450/451 2
Elective 3
Complete Writing Portfolio

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Math 303 [M] or 420 3
T & L 317/318 3
T & L 328 3
T & L 450/451 2
Elective 3

Senior Year
First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Math 303, 325, or 464 3
Math 402 [M] 3
Tier III Capstone (GER) 3
Electives 6
Department of Pure and Applied Mathematics

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 decisions are made 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. Applicants for 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.

Graduate Mathematics Minor

Requirements: A minimum of 12 hours of graded graduate-level mathematics courses, usually numbered between 501 and 573, as approved by the student's committee; at least one member of the student's committee must be from the Mathematics Department; a portion of the student's preliminary examination, determined by the committee, must cover the mathematics portion of the student's program; and the mathematics courses used to satisfy the requirements for a mathematics minor must be included in the student's program of study which must be signed by the Chair of the Mathematics Department and filed through and administered by the Graduate School.

Preparation for Graduate Study

As preparation for work toward an advanced degree in mathematics, a student should have completed the equivalent of the above schedule of studies. Adequate opportunities are provided for removing deficiencies through the taking of appropriate courses. Students who contemplate undertaking studies leading to a doctoral degree should contact the department for advice and assistance in the development of their plans.

Description of Courses

Mathematics

101 Intermediate Algebra 3 Prereq appropriate math placement score. Fundamental algebraic operations and concepts. No credit earned toward degree; not qualified for financial aid.

107 Elementary Functions 4 Prereq Math 101 or satisfactory math placement score. Graphs, properties, and applications of polynomial, rational, exponential, logarithmic, and trigonometric functions.

140 [N] Mathematics for Life Scientists 4 Prereq Math 107, or satisfactory math placement score. Differential and integral calculus with emphasis on life science applications. Credit not normally granted for more than one of Math 140, 171, 202, 206.

171 [N] Calculus 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; estimations; series, derivative of a vector function.

182 Honors Calculus II 4 (3-3) Prereq Math 171 and permission of instructor. Single variable calculus, series, with emphasis on conceptual development and problem solving.

201 Introduction to Finite Mathematics for Business and Economics 3 Prereq Math 101 or 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 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 satisfactory math placement score. Nature and scope of modern mathematics, relationships to other disciplines.

212 [N] Introduction to Statistical Methods 4 (3-3) Same as Stat 212.

216 Discrete Structures 3 Prereq Math 107 and a programming course. Discrete mathematics, trees, graphs, elementary logic, and combinatorics with 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 Prereq satisfactory math placement score or passing Math 101 or 107 with a C or better. Logical and historical development of present-day number systems and associated algorithms; methods of problem solving.

252 [N] Mathematics for Elementary School Teachers II 3 Prereq one year high school geometry; Math 251. Informal approach to basic ideas: mensuration, geometrical constructions, similarity, congruency, 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.

Department of Pure and Applied Mathematics

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, circulation, divergence; Stokes' theorem; potential functions.

397 Mathematicians at Work 1 Introduction to various options in mathematics and the oral, written and leadership skills required for success in the field.

398 Mathematical Snapshots 1 Prereq Math 172. Character, life work, and historical importance of mathematicians from various eras and branches of mathematics.

401 [M] Introduction to Analysis 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.

409 Elements of Mathematical Economics 3 Same as Econ 410.

410 Topics in Probability and Statistics 3 Prereq Math 172. 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 150 or 203; statistics course. Model formulation and simulation in business, industry, and government; simulation languages; analysis of simulation output; applications. Credit not granted for both Math 416 and 516.

418 Mathematical and Scientific Visualization 3 Prereq Math 172, 220, a programming language. Three-dimensional computer imaging of scientific, engineering, and mathematical phenomena using modern techniques for curve and surface display in computer-aided design. Credit not granted for both Math 418 and 518.

420 Linear Algebra 3 Prereq Math 220. Advanced topics in linear algebra including similarity transformations, canonical forms, bilinear forms. Credit not granted for both Math 420 and 520.


423 (442) 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 Bio S 430, or CSci 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.

435 Astronomy and Astrophysics 3 May be repeated for credit; cumulative maximum 4 hours. Same as Astr 435.

439 Applications of School Mathematics 3 Prereq Math 432. For preselected teachers. Role of application in the classroom; exemplifying using arithmetic, algebra, geometry, counting principles and probability; teaching concepts in applications. Credit not granted for both Math 439 and 539.

440 Applied Mathematics I 3 Prereq Math 315. Partial differential equations; Fourier series and integrals; Bessel functions; calculus of variations; vector calculus; applications. Credit not granted for both Math 440 and 540.

441 Applied Mathematics II 3 Prereq Math 315. Complex variable theory including analytic functions, infinite series, residues, and conformal mapping; Laplace transforms; applications. Credit not granted for both Math 441 and 541.

443 Applied Probability 3 Prereq Math 172, 220. Axioms of probability theory; random variables; expectation; generating function; law of large numbers; central limit theorem; Markov chains. Cooperative course taught jointly by WSU and UI (Math 451).

448 Numerical Analysis 3 Prereq FORTRAN programming; 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 V 2-12 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught jointly by WSU and UI (Math 451).

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 invitation only. S, F grading.

498 Career Experience Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. By invitation 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 Practicum in Teaching 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 Gradu-ate-level counterpart of Math 410; additional requirements. Credit not granted for both Math 410 and 510.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credit Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 402</td>
<td>Ordinary Differential Equations</td>
<td>3 Prereq</td>
<td>4</td>
<td>Existence of solutions; linear systems; qualitative behavior, especially stability; periodic solutions. Cooperative course taught jointly by WSU and UI (Math 539).</td>
</tr>
<tr>
<td>Math 518</td>
<td>Mathematical and Scientific Visualization</td>
<td>3 Graduate-level course</td>
<td>3</td>
<td>Prereq statistical</td>
</tr>
<tr>
<td>Math 516</td>
<td>Simulation Methods</td>
<td>3 Graduate-level counterpart</td>
<td>4</td>
<td>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.</td>
</tr>
<tr>
<td>Math 518</td>
<td>Mathematical and Scientific Visualization</td>
<td>3 Graduate-level course</td>
<td>3</td>
<td>Prereq statistical</td>
</tr>
<tr>
<td>Math 518</td>
<td>Mathematical and Scientific Visualization</td>
<td>3 Graduate-level course</td>
<td>3</td>
<td>Prereq statistical</td>
</tr>
<tr>
<td>Math 520</td>
<td>Linear Algebra</td>
<td>3 Prereq</td>
<td>2</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 418; additional requirements. Credit not granted for both Math 418 and 518.</td>
</tr>
<tr>
<td>Math 521</td>
<td>Algebraic Structures</td>
<td>3 Prereq graduate standing</td>
<td>3</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 421; additional requirements. Credit not granted for both Math 421 and 521.</td>
</tr>
<tr>
<td>Math 523</td>
<td>Statistical Methods for Engineers and Scientists</td>
<td>3 Prereq graduate standing</td>
<td>3</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 423; additional requirements. Credit not granted for both Math 423 and 523.</td>
</tr>
<tr>
<td>Math 525</td>
<td>General Topology</td>
<td>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 511).</td>
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<tr>
<td>Math 526</td>
<td>Advanced Topology</td>
<td>3 Prereq Math 421, 525. General topology; basic ideas of algebraic topology. Cooperative course taught jointly by WSU and UI (Math 512).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 527</td>
<td>Algebraic Topology</td>
<td>3 Prereq Math 526. Basic homotopy theory and application. Cooperative course taught by UI (Math 523), open to WSU students.</td>
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</tr>
<tr>
<td>Math 528</td>
<td>Algebraic Topology</td>
<td>3 Prereq Math 527. Con-</td>
<td>3</td>
<td>Prereq Math 527. Cooperative course taught by UI (Math 524), open to WSU students.</td>
</tr>
<tr>
<td>Math 531</td>
<td>Topics in Science and Mathematics Teaching 1 or 2</td>
<td>May be repeated for credit. Graduate-level counterpart of Math 431; additional requirements. Credit not granted for both Math 431 and 531.</td>
<td></td>
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</tr>
<tr>
<td>Math 532</td>
<td>Foundations of Secondary School Mathematics</td>
<td>2 Prereq graduate standing</td>
<td>4</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 432; additional requirements. Credit not granted for both Math 432 and 532.</td>
</tr>
<tr>
<td>Math 534</td>
<td>Approaches to Mathematics Teaching</td>
<td>2 Prereq graduate standing</td>
<td>3</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 434; additional requirements. Credit not granted for both Math 434 and 534.</td>
</tr>
<tr>
<td>Math 538</td>
<td>Topics in Modern Astrophysics</td>
<td>3 May be repeated for credit; cumulative maximum 9 hours. Same as Astr 538.</td>
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</tr>
<tr>
<td>Astr 538</td>
<td>Applications of School Mathematics</td>
<td>3 Prereq graduate standing</td>
<td>3</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 439; additional requirements. Credit not granted for both Math 439 and 539.</td>
</tr>
<tr>
<td>Math 540</td>
<td>Applied Mathematics I</td>
<td>3 Prereq graduate standing</td>
<td>3</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 440; additional requirements. Credit not granted for both Math 440 and 540.</td>
</tr>
<tr>
<td>Math 541</td>
<td>Applied Mathematics II</td>
<td>3 Prereq graduate standing</td>
<td>3</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 441; additional requirements. Credit not granted for both Math 441 and 541.</td>
</tr>
<tr>
<td>Math 543</td>
<td>Approximation Theory</td>
<td>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).</td>
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</tr>
<tr>
<td>Math 544</td>
<td>Advanced Matrix Computations</td>
<td>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).</td>
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</tr>
<tr>
<td>Math 545</td>
<td>Numerical Analysis of Evolution Equations</td>
<td>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).</td>
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</tr>
<tr>
<td>Math 546</td>
<td>Numerical Analysis of Elliptic PDEs</td>
<td>3 Prereq Math 448. Methods of discretizing elliptic partial differential equations and solving the resulting systems of equations; error analysis. Cooperative course taught by WSU, open to UI students (Math 547).</td>
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</tr>
<tr>
<td>Math 547</td>
<td>Numerical Analysis</td>
<td>3 Prereq graduate standing</td>
<td>3</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 448; additional requirements. Credit not granted for both Math 448 and 548.</td>
</tr>
<tr>
<td>Math 550</td>
<td>Advanced Topics in Geometry</td>
<td>3 Projective, affine, and non-Euclidean geometries and their relation to abstract algebra and differential geometry. Cooperative course taught by WSU, open to UI students (Math 554).</td>
<td></td>
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</tr>
<tr>
<td>Math 551</td>
<td>Galois Theory</td>
<td>3 Field extensions, automorphisms, normality, splitting fields, radical extension, finite fields, separability. Cooperative course taught by UI (Math 551), open to WSU students.</td>
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</tr>
<tr>
<td>Math 552</td>
<td>Ring Theory</td>
<td>3 Ideals, quotient rings, modules, radicals, semi-simple Artinian rings, Noetherian rings. Cooperative course taught by UI (Math 551), open to WSU students.</td>
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</tr>
<tr>
<td>Math 553</td>
<td>Mathematical Foundations of Continuum Mechanics I</td>
<td>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).</td>
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</tr>
<tr>
<td>Math 555</td>
<td>Graph Theory</td>
<td>3 Prereq graduate standing</td>
<td>3</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 453; additional requirements. Credit not granted for both Math 453 and 553.</td>
</tr>
<tr>
<td>Math 556</td>
<td>Introduction to Statistical Theory</td>
<td>3 Prereq graduate standing</td>
<td>3</td>
<td>Prereq graduate standing. Graduate-level counterpart of Math 456; additional requirements. Credit not granted for both Math 456 and 556.</td>
</tr>
<tr>
<td>Math 559</td>
<td>Partial Differential Equations</td>
<td>3 Prereq Math 560. Continuation of Math 560. Cooperative course taught by WSU, open to UI students (Math 542).</td>
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<tr>
<td>Math 560</td>
<td>Secondary School Mathematics</td>
<td>3 Same as T &amp; L 562. Cooperative course taught jointly by WSU and UI (Math 504).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 561</td>
<td>Mathematical Genetics</td>
<td>3 Prereq GenCB 301; Stat 412, 430, or 443. Statistical approaches to Mendelian and population genetics; theories and estimation of genetic parameters; testing genetic hypotheses.</td>
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</tr>
<tr>
<td>Math 562</td>
<td>Optimization in Networks</td>
<td>3 Prereq graduate standing</td>
<td>3</td>
<td>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 547).</td>
</tr>
<tr>
<td>Math 564</td>
<td>Statistical Theory I</td>
<td>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).</td>
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</tr>
<tr>
<td>Math 565</td>
<td>Statistical Theory II</td>
<td>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).</td>
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</tr>
<tr>
<td>Math 568</td>
<td>Reliability Theory</td>
<td>3 Prereq Math 430, 443. Statistical concepts; stochastic material strengths and lifetimes; strength vs safety analysis; reliability of coherent systems; maintenance models; complex systems. Cooperative course taught jointly by WSU and UI (Stat 571).</td>
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</tr>
<tr>
<td>Math 569</td>
<td>Seminar in Analysis V</td>
<td>1-3 May be repeated for credit. Cooperative course taught jointly by WSU and UI (Math 541).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 570</td>
<td>Seminar in Algebra V</td>
<td>1-3 May be repeated for credit. Cooperative course taught jointly by WSU and UI (Math 561).</td>
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<tr>
<td>Math 571</td>
<td>Seminar in Applied Mathematics V</td>
<td>1-3 May be repeated for credit. Cooperative course taught jointly by WSU and UI (Math 584).</td>
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</tbody>
</table>
The curriculum emphasizes foundation courses at the third year which are fundamental to all aspects of mechanical engineering. These courses emphasize both analysis and design while accompanying laboratory courses provide opportunities for hands-on experiences. Computer applications are interwoven throughout the program. In the fourth year each student selects an emphasis area with two design-focused electives to build upon material from the foundation courses and to integrate across the emphasis area. The undergraduate program is completed with both a capstone project design course and 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. An integrated BS/MS program facilitates the completion of a master’s degree in one additional year beyond the bachelor’s degree.

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 Engineering, and Doctor of Philosophy (Mechanical Engineering) and participates in the interdepartmental program leading to the degree of Doctor of Philosophy (Engineering Science).

MATERIALS SCIENCE AND ENGINEERING
Materials science and engineering is the application of methods and principles of the pure sciences to the study and utilization of engineering materials. The undergraduate program focuses on (a) the relationship of the microscopic structure, e.g. crystal structure and defects to the macroscopic properties of materials, e.g. strength, (b) the relationship of materials, (c) experimental techniques for characterizing physical, chemical and structural properties of materials and, (d) the design and selection of appropriate materials for given engineering applications.

The specific fields of application covered by research and instruction programs can be expressed by the nominal designations of metals (metallurgy), polymers, ceramics, electronic materials and composites. Due to the diversity of useful properties encountered in materials engineering, attention must be given to application and peculiarities of these specific types of materials. Where possible, however, a generalized approach toward the study of materials, their properties, their selection, and their utilization is fostered. The broad-based instructional approach prepares graduates for careers in a wide range of industrial settings, from aerospace companies to corporations specializing in the production of solid state electronics. In addition, the undergraduate curriculum prepares students for continued education at the graduate level. Because of the diversity of useful properties encountered in materials engineering, attention must also be given to the application and peculiarities of specific materials types.

The school offers courses of study leading to the degrees of Bachelor of Science in Materials Science and Engineering (accredited by the Accrediting Board for Engineering and Technology) and the Master of Science in Materials Science and Engineering. The school participates in the interdepartmental program leading to the degree of Doctor of Philosophy in Materials Science.

MANUFACTURING ENGINEERING
(VANCOUVER CAMPUS)
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 416). Engineering tools specific to manufacturing engineering design are learned in Manufacturing Processes (ME 310) and Manufacturing Control Systems (ME 375). Supplemental tools are developed in elective classes, including Computer Aided Design (ME 473), Quality Control and Reliability Design (EM 480), Design for Manufacturability (EM 490), and Manufacturing and Operations Design and Strategy (EM 460). Additional elective courses will permit students to select a specialization area appropriate to their current employer, or to prepare for a particular manufacturing sector. Specialization areas include microelectronics, quality, forming and fabricating, or robotics and automation.

The Vancouver campus offers upper division (junior and senior) classes only. Acceptable transfer courses for the lower division requirements in mechanical engineering are prerequisites for admission to the program.

Degree Program Requirements
Honors students complete Honors Requirements in place of General Education Requirements.

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 DEGREE PROGRAM (132 HOURS) ✔ FYDA

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
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<tr>
<td>Chem 106 [P] (GER)</td>
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#### Junior Year

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\(^1\) Selected from: Chem 331, 333, 336; Chem 340, 341, 342; or Phys 303, 304.

\(^2\) One from: C E 212, Ch E 480, E E 214, 305, M E 303, 404.

\(^3\) Upper-division C E, Ch E, Chem, Cpt S, E E, Math, M E, Phys, or Stat course.

### MECHANICAL ENGINEERING DEGREE PROGRAM (131 HOURS) ✔ FYDA

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<td>Engl 402 [W] (GER)</td>
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<tr>
<td>Tier III Capstone [H,G,S,K] (GER)</td>
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\(^1\) Choose two from one emphasis: Design & Manufacturing: M E 415, 474; Applied Mechanics: M E 472, 481; Energy and Environmental Systems: M E 402, 405 or 435; Fluids & Aerospace: M E 402, 407 or 439.

\(^2\) Upper-division Math, Stat, or Computer Science (Cpt S 430 or 445).

#### Manufacturing Engineering Degree Program (128 HOURS)

#### Freshman Year

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<thead>
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<th>First Semester</th>
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<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
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<td>Mfg Engineering Elective</td>
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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 course work and who have completed C E 211, Chem 105, Engl 101, M E 103, Math 171, 172, and Phys 201 or their equivalents are eligible to apply for certification into the Mechanical Engineering Program. Applications for certification will be reviewed by a departmental committee. When it becomes necessary to limit enrollment, the overall g.p.a. as well as the g.p.a. for the prerequisite courses listed above, will be important factors. Application deadline dates are March 1 for the fall semester and October 1 for the spring semester. Students who have not completed all of the prerequisite courses will be placed in a pre-engineering major and assigned to a mechanical engineering 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. To be eligible for certification, a student must have completed at least the following:

a. 30 semester hours of graded course work at WSU or the equivalent of 30 semester hours of acceptable transfer credit with an overall g.p.a. of 2.0 or above.

b. Chem 105 or equivalent.

c. Chem 106, Phys 201, or equivalent.

d. Math 171, 172, or equivalent.

Other criteria considered for certification are overall g.p.a. and performance in other mathematics, science and engineering courses. For additional details, contact the school’s office of student services.

Transfer Students
The School of Mechanical and Materials Engineering cooperates with the community colleges in Washington to minimize problems associated with transfer. Inquiries are welcome. A strong preparation in mathematics, physics, and chemistry is necessary 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 above 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 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; graphical analysis and solution of spatial problems, computer-aided drafting. Cooperative course taught by WSU, open to UI students (ME 101).

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 team work and creativity in engineering design, conducted in an enriched learning environment.

212 (C E 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).

214 (C E 214) Introductory Dynamics 2 Prereq C E 211 or 213. Kinematics and kinetics of particles and rigid bodies.

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 (Chem 321).

303 Fluid Dynamics 3 Prereq Phys 202; major in engr; Rec M E 301 or c//. Laminar and turbulent flow of ideal and viscous fluids, pipe flow, boundary layers, wing theory, supersonic flow, nozzles, shock waves. Cooperative course taught jointly by WSU and UI (CE 320).

305 Thermal and Fluids Laboratory 2 (1-3) Prereq M E 303, major in engr; Rec EE 305. Instrumentation, data acquisition and control, and theory verification in the thermal and fluid sciences.

310 Manufacturing Processes 3 Prereq M SE 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 C E 212; major in engr. Motion transfer; velocity, acceleration, and inertial forces in machines; static and dynamic force systems; cam profiles; gears and gearing systems. Cooperative course taught by UI (ME 324), open to WSU students.

313 Engineering Analysis 3 Prereq Math 315, major in engr.; Rec FORTRAN or C program. Analysis and modeling of engineering problems utilizing numerical and mathematical techniques and computers.

316 [M] Systems Design 3 Prereq MSE 301 or c//; Rec C E 211. Engineering design process for systems and components: design criteria, creativity, engineering economics, engineering statistics, standards, product safety; design projects.

320 Materials Laboratory 1 (0-3) Prereq C E 215 or c//, major in engr. Mechanical behavior of materials and application to engineering structures.

325 Manufacturing Planning and Estimating 3 Prereq M E 310, 311, Math 360. Quantitative techniques of production and planning and control, material requirements, operations scheduling, production economics.

348 Dynamics Systems 3 Prereq M E 313, major in engr. Fundamentals of vibration analysis, control systems, system modeling and dynamics analysis.

349 Dynamic Systems Laboratory 1 (0-3) Prereq M E 348 or c//. Laboratory investigations of dynamic systems.

375 Manufacturing Control Systems 3 (2-3) Prereq C E 212, E E 304, Math 315. Feedback control; hardware components, software algorithms, and system integration for process control.

400 Seminar in Manufacturing 2 Prereq senior standing. Current industry practice; non-technical skills (communication, product realization, human factors, ethics, corporate culture, market focus, career development).

402 Thermodynamic Systems 3 Prereq M E 301, major in engr. Power and refrigeration cycles, thermodynamic relations, mixtures, reacting systems and combustion, phase and chemical equilibrium, compressible flow.

404 Heat Transfer 3 Prereq M E 303 or c//, major in engr. Conduction, radiation, and convection heat transfer; analytical, numerical, experimental results for solids, liquids, and gases; heat exchanger design. Cooperative course taught jointly by WSU and UI (ME 345).

405 Thermal Engineering 3 Prereq M E 404 or c//. Heat, mass, and momentum transfer in thermal systems and system components; computer-aided analysis; optimization and design of thermal systems.

406 [M] Experimental Design 3 (1-6) Prereq M E 305; 404; major in M E; Rec M E 348. Designing, conducting, and reporting of experimental investigations involving mechanical equipment.

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//, major in engr. Methodologies to optimize product design incorporating functionality, reliability, manufacturability and maintainability.
416 Design Project 3 (1-6) Prereq M E 348; 404, 414; Rec M E 316. Integrative design in mechanical engineering; multidisciplinary design project considering both technical and nontechnical contexts; organizational dynamics and communications.

419 Air Conditioning 3 Prereq M E 404. Principles of heat and moisture transfer; air motion and purity in buildings; design of systems. Cooperative course taught jointly by WSU and UI (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; organizational dynamics and communications.


435 Thermal Energy Systems 3 Prereq M E 404 or c/. Thermal energy systems of current interest including combustion, nuclear, and direct conversion based systems.

436 Combustion Engines 3 Prereq M E 303. Internal combustion engines; spark ignition engine, diesel, and gas turbines.

439 Applied Aerodynamics 3 Prereq M E 303. Aerodynamic lift and drag; circulation; boundary layers, application to vehicle and structural design and pollution control.

442 Robotics 3 Same as E E 442.

449 Vibrations and Noise Control 3 Prereq M E 348. Vibrating systems and noise producing mechanisms; design for noise and vibration control. Cooperative course taught jointly by WSU and UI (ME 472).

450 Stress Design Codes 3 Prereq C E 215. Theoretical bases and application of the principal regulatory stress analysis design codes.


460 Nuclear Reactor Engineering 3 Prereq M E 461. Nuclear reactor design problems in thermodynamics, fluid flow, heat transfer, fuel preparation, waste disposal, materials selection; discussion of reactor types. Cooperative course taught by UI (ME 463) 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).

463 Probabilistic Risk Assessment and Applications 3 Prereq senior in engr or physical science. Basics of reliability and probabilistic risk assessment (PRA); applications in operations and maintenance, as practiced in nuclear industry.

467 Nuclear Fuel Cycle Economics 3 Same as Ch E 467.

470 Dynamics of Machinery 3 Prereq M E 348. Kinematics and kinetics of mechanisms and machines; static and dynamic force analyses of planar and spatial systems; synthesis for mechanisms.


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 materials processing by deformation; manufacturing systems concepts in production.

475 Manufacturing Automation 3 (2-3) Prereq M E 310, 348 or c/. Computer control of manufacturing processes; numerically controlled machine tools, robotics, control algorithms, component and system design.

476 Industrial Ecology and Sustainability in Manufacturing 3 Prereq senior in engr; or by permission only. Open and closed manufacturing systems; sources and sinks; pollution prevention, zero discharge; materials productivity and dematerialization; green design and manufacture.

481 Control Systems 3 Prereq M E 348. Analysis and design of feedback control systems. Cooperative course taught jointly by WSU and UI (ME 481).

495 Internship in Mechanical Industry 3 or 6 May be repeated for credit; cumulative maximum 12 hours. Prereq major in M E or MSE By interview only. Students work full time on engineering assignment in approved industries with industrial and faculty supervision. S, F grading.

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

501 Continuum Mechanics 3 Prereq graduate standing. Unified presentation of principles common to all branches of solid and fluid mechanics; viscous fluids, elasticity, viscoelasticity, and plasticity.

513 Conduction Heat Transfer 3 Rec M E 404. Analytical 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 absorbing/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 convection heat transfer with internal and external flow; free convection. Cooperative course taught jointly by WSU and UI (ME 546).


522 Viscous Fluid Mechanics 3 Rec M E 521. Deterministic fluid phenomena, exact solutions of Navier-Stokes equations, boundary layer analysis, vorticity generation and development, stability, and transition.

526 Microscopic Thermodynamics 3 Microscopic development of equilibrium; classical and quantum particle statistics; statistical description of real and ideal gases, solids, and liquids. Cooperative course taught jointly by WSU and UI (ME 526).

527 Macroscopic Thermodynamics 3 Advanced thermodynamics from macroscopic viewpoint; basic postulates, equilibrium, stability, property relations; application to thermal-fluid and solid mechanics; irreversible thermodynamics. Cooperative course taught jointly by WSU and UI (ME 527).


531 Theory of Plasticity 3 Rec M E 501. The fundamentals of the theory of plasticity; the classical theory of plasticity; the classical theory and modern continuum theories of large elasto-plastic deformations.

532 Finite Elements 3 Same as C E 532.

533 Experimental Methods in Materials and Manufacturing Process 3 Rec M E 530. Theoretical and experimental techniques in engineering material behavior and manufacturing processes. Cooperative course taught by WSU, open to UI students (ME 533).

534 Mechanics of Composite Materials 3 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 properties; 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 (M E 505).

541 Advanced Mechanical Vibrations 2 or 3 Rec M E 449. Response of single and multi degree of freedom systems; finite element formulation; matrix methods, random vibrations. Cooperative course taught jointly by WSU and UI (ME 572).

542 Optimal Control of Dynamic Systems 3 Introduction to optimal control theory, differential games, and multiple criteria systems; applications in engineering, biology, economics, agriculture, and medicine. Cooperative course taught by WSU, open to UI students (ME 542).

544 Optimal Systems Design 3 Parameter design optimization techniques for nonlinear systems; theory, numerical methods, and applications; multiple criteria optimal trade-off analysis and game theory.

545 Nonlinear Dynamics 3 Rec M E 540 or 541. Fundamentals of nonlinear oscillations, stability theory, perturbation methods, and chaotic behavior in nonlinear dynamical systems.

548 Acoustics 3 Fundamental principles of linear and nonlinear acoustics and its applications.

551 Turbulent Flow 3 Rec C E 530 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, combustion 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; neutronic/thermal hydraulic relationships; transient/accident analysis.

569 Advanced Topics in Thermal and Fluid Sciences V 1-3 May be repeated for credit. Advanced topics in thermodynamics, heat transfer or fluid mechanics; analytical and experimental methods.

574 Advances in Manufacturing Science 3 Rec M E 474. Advances in machinability, formability and precision engineering; new manufacturing processes of precise and electronic components. Cooperative course taught by WSU, open to UI students (ME 574).

575 Computer Integrated Manufacturing 3 Rec M E 475. Hierarchical control of manufacturing systems; interface and network considerations; process planning; optimization strategies.

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.

Materials Science and Engineering

MSE

110 Introduction to Materials Science 2 Introduction to the science and technology of metals, polymers, ceramics and composites.

120 Innovation in Design 2 Same as M E 120.

301 Materials Science 3 Prereq Chem 106, Phys 202 or c/. Structure of materials, phase equilibria, 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 materials transport phenomena including heat, mass, and momentum transfer. Cooperative course taught by UI (Met 309), open to WSU students.

312 Thermodynamics and Phase Equilibrium 3 Prereq MSE 301. Concepts of activity, equilibrium, solution properties; relationship between free energy, composition, and temperature; heterogeneous equilibria.

316 Kinetics of Chemical and Physical Reactions 3 Kinetics of heterogeneous chemical reactions; mechanisms and kinetics of diffusion; oxidation and other gas-metal reactions; polarized electrodes; corrosion; boundary migration; nucleation and growth; eutectoid and martensitic transformations.

320 Materials Structure - Properties Lab 2 (0-6) Prereq MSE 301 or c/; major in MSE. Principles and techniques of optical metallography and other laboratory methods used in modern materials science and engineering.

321 Materials Characterization 3 Prereq MSE 301. Properties of x-rays, scattering and diffraction; crystal structures; x-ray diffraction methods, transmission electron microscopy and scanning electron microscopy.

323 Materials Characterization Lab 1 (0-3) Prereq c/ in MSE 321. Laboratory exercises on materials characterization: x-ray, TEM, SEM.

341 Particular Materials Processing 4 (3-3) Prereq M E 310. Engineering science of particular; 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; creep, fracture, fatigue.

415 Materials Selection and Design 3 Prereq Chem 331. Selection of materials for use in structural applications; consideration of environment, stress conditions, cost and performance as guide to properties. Cooperative course taught by UI (Met 415), open to WSU students.

420 Capstone Engineering Design 3 (1-6) Same as M E 420.

421 Light Metals 3 Fundamental design of the light metals aluminum, magnesium, and titanium alloys; applications of these materials. Cooperative course taught by UI, 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 press-and-sinter powder metallurgy (PM) and more advanced techniques; commercial applications of PM parts. Cooperative course taught by UI (MET 429), open to WSU students.


450 Seminar 1 May be repeated for credit. For seniors only.

461 Metallurgical Control and Optimization 3 Basics of process control and optimization applied to metallurgical engineering. Cooperative course taught by UI (Met 461), open to WSU students.

471 Materials Characterization Techniques 1 (0-3) Prereq instructor approval, Chem 105, Phys 201 or equivalent. Introduction to advanced materials characterization methods including electron microscopy, scanning probe microscopy, nanomechanical testing, and spectroscopy techniques. S, F grading.

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

501 Advanced Topics in Materials Science 2 or 3 May be repeated for credit; cumulative maximum 6 hours. Chemical crystallography, microstructure, ultra-structure, theories of crystalline and non-crystalline solids, rheology and fracture mechanism of materials. Cooperative course taught by WSU, open to UI students (Met 544).

503 Advanced Topics in Materials Engineering V 1-3 May be repeated for credit; cumulative maximum 6 hours.

511 Deformation 3 Rec MSE 413. Elementary dislocation theory and its application to some important deformation processes.

513 Crystal Plasticity 3 Rec Math 440. Dislocation theory; slip; climb; mechanical properties of crystals, compounds and alloys.

514 Thermodynamics of Solids 3 Rec MSE 312. Thermodynamic properties of solid solutions; models for substitutional and interstitial solutions; configurational and non-configurational contributions; calculation of phase diagrams.

515 Electronic Properties of Materials 3 Electron energy bands in solids, electrical conduction in metals and semiconductors, applications to semi-conduction devices based on silicon and III-V compounds.

516 Phase Transformations 3 Rec MSE 314, 316. Thermodynamics, nucleation, interface motion, mechanisms and kinetics of chemical reactions between solid metals and their environment.

519 Corrosion and Oxidation of Metals 3 Prereq MSE 316. Basic corrosion and oxidation mechanisms for various metals with emphasis on those pertaining to stainless steels.

520 Seminar 1 May be repeated for credit; cumulative maximum 3 hours. Reporting problems, research and research methods in materials science and engineering. S, F grading.

537 Fracture Mechanics and Mechanisms 4 Fracture mechanics and mechanisms and the microstructural origins of toughness in metals, polymers and composites.
543 Natural and Synthetic Polymeric Materials
3 Rec MSE 402. Glassy, crystalline, and rubbery states of synthetic and natural polymers.

546 (550) Parameters for Synthesis of Wood Composition Materials
3 Theory and practice of wood composite materials, manufacture and development. Cooperative course taught by WSU, open to UI students (ForPr 537).

547 Basic Principles of Adhesion
3 Rec MSE 402. Principles of interfacial bonding applied in the engineering of polymers, wood and heterophase systems.

548 Reinforced Polymer and Wood-based Composites
3 Fundamentals of composite materials having polymers and wood as major components.

549 Nondestructive Testing of Wood-based Materials
3 Same as C E 536.

592 Transmission Electron Microscopy
3 Development of the principles and applications of electron optics in microscopy.

593 Practical Electron Microscopy
1 (0-3) Prereq MSE 592 or c//. Experimental methods in electron microscopy and microanalytical techniques, for materials science. S, F grading.

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

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

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

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

Program in Basic Medical Sciences

Professor and Program Chair, M. B. Laskowski; Professors, R. W. Brosemeter, R. B. Creteau, D. W. King, M. L. Pull, S. R. White, R. B. Wilson; Associate Professors, J. M. Mallatt; Assistant Professor, P. F. Mixter; 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 having polymers and wood as major components. Nondestructive Testing of Wood-based Materials 3 Same as C E 536.

Transmission Electron Microscopy 3 Development of the principles and applications of electron optics in microscopy.

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.

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.

Description of Courses

Medical Sciences

Med S

501P Medical Preceptorship
2 May be repeated for credit; cumulative maximum 4 hours. For WAMI students only. Practicum, observations of medical practice with individual physician volunteers.

502P Problem-based Learning
1 For WAMI students only. Studies of cases integrating content from basic science courses.

509P The Human Face of Medicine
2 For WAMI students only. Foundation of human values underlying medical practice.

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 WAMI students only. Extensive regional study of human thorax, abdomen, pelvis, and perineum; embryology and living anatomy; correlation of structures with function. S, F grading.

512P Basic Mechanisms in Cellular Physiology
4 Basic physiological mechanisms, primarily at the cellular level.

513P Introduction to Clinical Medicine
1 For WAMI students only. Instruction in communications skills and interview techniques to form the basis for the eventual doctor-patient relationship.

516P Systems of Human Behavior
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
5 (4-3) Pathogenesis and immunity of infectious diseases, clinical manifestations and control of representative bacterial, viral, parasitic, and fungal diseases.

522P Introduction to Clinical Medicine II
2 For WAMI students only. Communication skills as related to patients and dealing with problem identification and patient history.

523P Medical Immunology
2 For WAMI students only. Principles of immunology and their relationship to human medicine.

524P Molecular and Cellular Biology II
2 Continuation of Med S 514.

526P Systems of Human Behavior II
2 Continuation of Med S 516 with an emphasis on models of behavior, normality and abnormality related to medicine.

530P Epidemiology
2 Basic principles of epidemiological processes; statistical inference from clinical data.

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 WAMI students only. The screening physical examination.

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

Department of Microbiology

Professor and Department Chair, M. L. Kahn; Professors, K. Postle, N. S. Magnuson, K. D. Spence; Associate Professors, K. P. Bertrand, R. E. Hurlbert, L. Xun; Assistant Professors, M. Konkel, P. Minter; Professor Emeriti, K. L. McVor, H. M. Nakata; Adjunct Associate Professors, F. Brockman, L. Thomashow; Instructor, M. Sanchez-Lanier.

Microbiology is both a basic and an applied science. At the undergraduate level, the Department of Microbiology offers options in microbiology and medical technology, leading to a Bachelor of Science degree in Microbiology. The department also participates in the interdisciplinary molecular biology minor, listed separately in this catalog. Majors are required to develop a strong background in the basic sciences before taking courses in microbiology and those required by the various options. Employment opportunities in industrial, government, hospital and private laboratories and agencies are excellent for qualified graduates. A one-year hospital internship in an accredited school of medical technology is required after graduation for those interested in becoming certified medical technologists. Career opportunities in this area are also excellent. 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 department offers programs leading to the degrees of Master of Science in Microbiology and Doctor of Philosophy. Areas in which the department 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.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

At least 40 of the total hours required for the bachelor’s degree in this department must be in 300-400-level courses. For majors, a total of 28 credit hours must be in the departmental 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.

Microbiology Option

GenCB 301; Micro 301, 310, 311, 412, 413, 414, 415, 9 additional hours Micro; and one advanced lecture-lab course outside the department are required as a minimum. Those contemplating graduate study are urged to take Chem 340-343 series (in lieu of Chem 240).

Medical Technology

Same as microbiology option except that Micro 350 and Zool 417 are required. Micro 350 partially fulfills requirement for 9 credits of Micro electives and Zool 417 fulfills the requirement for one ad-
vanced lecture-lab course outside the department. Zool 251 is strongly recommended. To become a certified medical technologist, a one-year internship at an accredited school of medical technology is required after graduation.

**MICROBIOLOGY AND MEDICAL TECHNOLOGY DEGREE PROGRAMS (120 HOURS)**

### FYDA

#### Freshman Year

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<td>Bio S 103 [B] (GER)</td>
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<td>Chem 105 [P] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Micro 301</td>
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#### Senior Year

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<tr>
<td>Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

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

²Chem 220 and 222, Quantitative Chemistry, 4 credits, should be taken after BC/BP 364, 366.
³Micro electives may include Micro 331, 350, 416, 417, 420, 428, 431, 462, 464. A total of three courses (9 credits) is required.
⁴For Microbiology Degree Program, Entom 343, 448, Zool 315, 353, 417, or 428 may satisfy this requirement.
²For Medical Technology Degree Program, take Zool 417.

### Minor in Microbiology

A minimum of 16 semester hours including Micro 301 and the remaining at the 300-400 level selected from: Micro 310, 311, 331, 350, 406, 412, 413, 414, 415, 416, 417, 420, 428, 431, 462, 464, 499.

### Transfer Students

Students transferring from other institutions as juniors should have taken the equivalent of Bio S 103, 104; Chem 105, 106, 220, 222 or 240 (preferably both); Engl 101: Micro 301; one year of one modern foreign language in college or two years in high school; and part of the required hours in social sciences and arts and humanities. The other required courses normally taken in the first two years may be taken in the 300-400-level program.

### Preparation for Graduate Study

For admission to graduate study in microbiology a student should have a bachelor’s or master’s degree and should present evidence of proficiency in academic work. Normally the applicant should have an undergraduate major in microbiology, biological science, molecular biology, or chemistry; however, candidates with a good record in related fields may be well prepared for certain areas of advanced study in microbiology.

### Description of Courses

#### Microbiology

**Micro**

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 Bio S 103 and 104. Credit not granted for both Micro 101 and Micro 102/105.

102 *Introductory Microbiology* 3 Description of microorganisms and the role they play in disease production, public health, the environment and in commercial processes. Not for students who have taken Bio S 103 and 104. Credit not granted for both Micro 101 and Micro 102/105.

105 [B] *Introductory Microbiology Laboratory* 1 (0-3) Prereq Micro 102 or equivalent or c//. Introductory microbiology laboratory; lab portion of Micro 101. Credit not granted for both Micro 101 and Micro 102/105.

301 *General Microbiology* 4 (3-3) Prereq Bio S 104; Chem 240 or c//. Structure, function, nutrition, physiology and genetics of microbes and their application to immunology, pathology, microbial diversity and environmental microbiology.

310 *Medical Microbiology* 3 Prereq BC/BP 364 or c//; Micro 301. Microbial pathogens and their relationship to disease.

311 *Diagnostic Medical Bacteriology* 2 (0-6) Prereq Micro 310 or c//. Techniques and tests for the identification of bacteria pathogenic for humans.

312 *Microbial Ecology* 3 Prereq Bio S 104; Chem 240 or c//. Discussion of microorganisms behavior in nature and microbial activities influence on ecological balance.

350 *Clinical Diagnosis* 4 (2-6) Prereq Bio S 104; organic chemistry. Theory, techniques, and interpretation of urinalysis, clinical chemistry, and hematology.

406 *Introduction to Immunology* 2 Prereq Bio S 104, Chem 240. Immunology for science majors and students in professional programs. Credit not granted for both Micro 406 and 412.

412 *Immunology* 3 Prereq Micro 301; org chem. Principles of basic immunology. Credit not granted for both Micro 412 and 406. Credit not granted for both Micro 412 and 414.

413 [M] *Immunology Laboratory* 2 (0-6) Prereq Micro 412 or c//. Fundamental principles and techniques used in immunology.

414 *General Virology* 3 Prereq BC/BP 364; GenCB 301; organic chemistry. The biology of bacterial, animal, and plant viruses. Credit not granted for both Micro 414 and 414. Cooperative course taught by WSU, open to UI students (MMBB 441).

415 [M] *General Virology Laboratory* 2 (0-6) Prereq Micro 414 or c//. Laboratory techniques concerning cultivation and characterization of viruses. Cooperative course taught by WSU, open to UI students (MMBB 415).

416 *Food and Applied Microbiology* 2 Same as FSHN 416.

417 *Food Microbiology Laboratory* 2 (0-6) Same as FSHN 417.

420 *Epidemiology* 3 Prereq junior standing. Study of diseases in human populations; concepts of etiology, disease rates, susceptibility and risk factors, screening for disease, and prevention. Cooperative course taught by WSU, open to UI students (MMBB 420).

428 *Basic and Applied Microbial Physiology* 3 Prereq BC/BP 364, Micro 301. Basic microbial physiology and its relevance to the processes of applied microbiology. Credit not granted for both Micro 428 and 528.

431 *Soil Microbial Ecology* 3 Same as Soils 431.

452 *Environmental Microbiology* 3 Prereq college-level biology, microbiology, organic chemistry. Microbial contamination and interactions between microbialorganisms and the environment, methods and mechanisms of bioremediation. Credit not granted for both Micro 452 and 552.

462 *Microbial Genetics* 3 Prereq BC/BP 364 or GenCB 301; Micro 301. Genetics of bacteria, bacteriophages and plasmids; regulation of gene expression; genetic manipulation of microorganisms.

464 *Techniques in Molecular Biology* 3 (1-6) Prereq BC/BP 482, GenCB 402, or Micro 301. Basic principles and techniques of gene manipulation.

489 *Biotechnology for High School Teachers* 3 (1-6) Prereq high school science teaching experience. Methodologies illustrating the use of microbes to implement laboratory exercises in biotechnology.

495 *Internship in Microbiology* V 2-4 May be repeated for credit; cumulative maximum 8 hours. Prereq Micro 301. Experience in work related to specific career interests. S, F grading.
Molecular Biology Minor

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.

205 Basic Summer Camp 6 Prereq junior standing. By interview only. Intensive orientation and internships in military training and skills held at an active Army post. Successful completion qualifies for Advanced ROTC. S, F grading.

206 Military Science Overview 5 Preparation for advanced military science program; map reading, tactics, leadership, U. S. military history, fundamentals of arm unit duty.

Advanced Course

Mil S

301 Advanced Leadership and Management 3 Troop leadership procedures emphasizing instruction in military professionalism and ethics; practical aspects of tactics and leadership practicum.

302 Small Unit Tactics and Military Leadership 3 Preparation, delivery, and critique of practical oral presentations; leadership of small units; offensive and defensive operations.

320 Advanced Summer Camp 6 Prereq Mil S 301, 302. By interview only. Intensive study and internship in military tactics, command and leadership; held at Fort Lewis, WA, S, F grading.

401 Advanced Military Leadership 3 Historical and legal basis of military justice; small unit management; military professionalism and ethics.

402 Advanced Military Management and Practicum 3 Theory and practice of Army administration/management; staff planning and correspondence; pre-commission orientation; unit management/resources application.

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

Molecular Biology Minor

Graduate training in molecular biology is performed under numerous life science graduate programs on campus. An undergraduate minor in molecular biology is available, jointly administered by the faculties of biochemistry/biophysics, genetics and cell biology, and microbiology. Students majoring in these three areas and possibly in other areas may satisfy the requirements for this minor. Requirements of 18-21 credit hours are as follows:

BC/BP 364

BC/BP 366, GenCB 402, or Micro 464
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 Music, Bachelor of Arts in Theatre Arts and Drama, Master of Arts in Music, Master of Arts in Theatre Arts and Drama, and Master of Arts in the Teaching of Theatre Arts and Drama.

Endorsement curricula offered in cooperation with College of Education provide certification for teachers of music or drama. Minors in music and drama are available as are many courses, performance opportunities, and other activities for students interested in music and theatre.

Music


The Music Program is committed to a tradition of excellence in performance, teaching, and the study of theoretical, historical, and philosophical aspects of the musical arts. Its chief objectives are:
— to provide students with a foundation in the analysis and criticism of music and guide them toward acquiring discriminating judgment in a progressive musical environment;
— to train teachers and practitioners of music who can be effective in contemporary society;
— to assist aspiring performers and composers to reach the highest potential of artistic capacity;
— 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.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

Normal progress in all music degree curricula requires enrollment during the freshman year in 300-level performance studies. Such enrollment requires an audition which is best completed during the semester (usually spring) prior to the student’s matriculating in the university. Students who do not audition early must do so during the first week of classes in the term. Normal progress also assumes placement in 200-level music theory. Theory placement tests will be administered as part of the performance audition. Students who do not qualify for 300-level performance studies and 200-level theory studies as freshmen will usually require more semesters and credit hours of performance studies to complete a degree than listed in this schedule of studies. To certify as a major pursuing any degree in music, students must meet the following criteria:

Completion of 30 semester hours; cumulative g.p.a. of 2.0; completion of 10 hours with a cumulative g.p.a. of 2.0 and a grade of C or better in any of the following courses: Mus 151, 152, 161, 181, 182, 251, 252, 253, 254, 281; approval of the appropriate applied study area coordinator; [approval requires two semesters’ study as specified by each area: Keyboard at 300 level with grade of C or better, Brass and Percussion at 300 level with grade of B- or better, Woodwinds at 300 level with grade of B- or better, and Voice at 200 level with grade of B- or better]; completion of application available from department. Students not passing the upper-division exam after the second attempt will be decertified as music majors.

In addition the College of Education requires 2.5 g.p.a. and C or better in each course 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. 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 and teachers of music:

Students following option I, II, III, or V are required to present an acceptable junior and senior recital in the major performance medium.

Students following any of the option IV endorsements are required to present an acceptable senior half recital in the major performance medium.

Students following any of the option IV endorsements 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.

MAJOR IN PERFORMANCE

FIRST AND SECOND YEAR REQUIREMENTS

The first and second year requirements are common to the Brass, Percussion, Strings, Winds, Keyboard; Keyboard, with elective studies in Pedagogy, and Voice degree programs.

Freshman Year

<table>
<thead>
<tr>
<th>Hours</th>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Degree Program Course, if necessary&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Mus 251&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>Mus 252&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble&lt;sup&gt;3&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Science Elective&lt;sup&gt;4&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)&lt;sup&gt;4&lt;/sup&gt;</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

| Hours | Biological Sciences [B] (GER) | 4 |
| Degree Program Course, if necessary<sup>5</sup> | 1 |
| GenEd 110 [A] (GER) | 3 |
| Mus 351<sup>5</sup> | 3 |
| Mus 352<sup>5</sup> | 1 |
| Mus Ensemble<sup>3</sup> | 1 |
| Mus Private Lessons | 4 |

Sophomore Year

<table>
<thead>
<tr>
<th>Hours</th>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Degree Program Course, if necessary&lt;sup&gt;6&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 353&lt;sup&gt;6&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>Mus 354&lt;sup&gt;6&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble&lt;sup&gt;3&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hours</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree Program Course, if necessary&lt;sup&gt;7&lt;/sup&gt;</td>
<td>2 or 3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 182 (Class piano credits not required for degree)</td>
<td>1</td>
</tr>
</tbody>
</table>

<sup>1</sup> For Brass, Percussion, Strings, Winds, and Voice degree programs, take Mus 181/182/286. (Class piano credits not required for degree.)

<sup>2</sup> Fall only.

<sup>3</sup> Chosen from Mus 428-444.

<sup>4</sup> One four-credit Tier I Science may be substituted for both the three credit Tier I Science and the one credit Science Elective.

<sup>5</sup> For Brass, Percussion, Strings, Winds, and Voice degree programs, take Mus 182 (Class piano credits not required for degree).

<sup>6</sup> Spring only.

<sup>7</sup> For Brass, Percussion, Strings, and Winds take a Social Science [S,K] (GER); for Keyboard Pedagogy, take Psych 105 [S] (GER); for Voice, take Mus 364.

<sup>8</sup> For Brass, Percussion, Strings, and Winds, or Keyboard, take Mus 281 (Class piano credits not required for degree) and secondary instrument or Mus 487; for Keyboard, take an Arts & Humanities [H,G] or Social Science [S,K] (GER); for Keyboard Pedagogy, take Mus 486; for Voice, take Mus 281 (Class piano credits not required for degree) and Mus 371 or 372.

BRASS, PERCUSSION, STRINGS, WINDS PERFORMANCE DEGREE PROGRAM (OPTION III - 138 HOURS) ✩FYDA

Requirements include: Upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; junior and senior recitals.
### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 360 [M]¹</td>
<td>3</td>
</tr>
<tr>
<td>Mus 435</td>
<td>1</td>
</tr>
<tr>
<td>Mus 455</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Music Electives</td>
<td>2</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus 361 [M]²</td>
<td>3</td>
</tr>
<tr>
<td>Mus 435</td>
<td>1</td>
</tr>
<tr>
<td>Mus 453³</td>
<td>2</td>
</tr>
<tr>
<td>Mus 465</td>
<td>2</td>
</tr>
<tr>
<td>Mus 481¹</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>9</td>
</tr>
<tr>
<td>Mus Ensemble¹</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Music Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus 482²</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble¹</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Music Electives</td>
<td>4</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Fall only. ² Spring only. ³ Chosen from Mus 428-444.

### KEYBOARD PERFORMANCE DEGREE PROGRAM (OPTION 1b - 138 HOURS) ✓FYDA

Requirements include: Accompany a junior, senior, or graduate recital; piano proficiency exam; upper-division exam; junior recital; senior recital; 2.5 average in all music courses; C or better in all music courses.

### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 360 [M]²</td>
<td>3</td>
</tr>
<tr>
<td>Mus 435</td>
<td>1</td>
</tr>
<tr>
<td>Mus 451¹</td>
<td>2</td>
</tr>
<tr>
<td>Mus 465</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus 482²</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble¹</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Music Electives</td>
<td>4</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Fall only. ² Spring only. ³ Chosen from Mus 428-444.

### VOICE PERFORMANCE DEGREE PROGRAM (OPTION II - 139 HOURS) ✓FYDA

Requirements include: Upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; junior and senior recitals.

### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 360 [M]²</td>
<td>3</td>
</tr>
<tr>
<td>Mus 435</td>
<td>1</td>
</tr>
<tr>
<td>Mus 453³</td>
<td>2</td>
</tr>
<tr>
<td>Mus 465</td>
<td>2</td>
</tr>
<tr>
<td>Mus 481¹</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus 361 [M]²</td>
<td>3</td>
</tr>
<tr>
<td>Mus 441</td>
<td>1</td>
</tr>
<tr>
<td>Mus 453³</td>
<td>2</td>
</tr>
<tr>
<td>Mus 481¹</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
</tbody>
</table>

### Major in Music

**BACHELOR OF MUSIC, WITH ELECTIVE STUDIES IN BUSINESS (128 HOURS) ✓FYDA**

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. Certification of the minor requires prior certification in music. Other requirements include: C or better in all music courses; 2.5 music average; upper-division exam; piano proficiency exam.
### Freshman Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>12</td>
<td>Arts &amp; Humanities [H,G] (GER) 3&lt;br&gt;Engl 101 [W] (GER) 3&lt;br&gt;GenEd 110 [A] (GER) 3&lt;br&gt;Mus 181 0 or 1&lt;br&gt;Mus 251 1&lt;br&gt;Mus 252 1&lt;br&gt;Mus Ensemble 428-444 1&lt;br&gt;Mus Private Lessons 2</td>
</tr>
<tr>
<td>Second Semester</td>
<td>13</td>
<td>ComSt 102 [C] (GER) 3&lt;br&gt;GenEd 111 [A] (GER) 3&lt;br&gt;Mus 161 3&lt;br&gt;Mus 182 0 or 1&lt;br&gt;Mus 253 3&lt;br&gt;Mus 254 1&lt;br&gt;Mus Ensemble 428-444 1&lt;br&gt;Mus Private Lessons 2</td>
</tr>
</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>13</td>
<td>Econ 101 [S] (GER) 3&lt;br&gt;Mus 281 1&lt;br&gt;Mus 351 3&lt;br&gt;Mus 352 1&lt;br&gt;Mus Ensemble 428-444 1&lt;br&gt;Mus Private Lessons 2&lt;br&gt;Tier I Science [Q] (GER)^3 4</td>
</tr>
<tr>
<td>Second Semester</td>
<td>14</td>
<td>Econ 102 [S] (GER) 3&lt;br&gt;Intercultural [I,G,K] (GER) 3&lt;br&gt;Math Proficiency [N] (GER) 3 or 4&lt;br&gt;Mus 353 3&lt;br&gt;Mus 354 1&lt;br&gt;Mus Ensemble 428-444 1&lt;br&gt;Mus Private Lessons 2&lt;br&gt;Social Sciences [S,K] (GER) 3</td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>14</td>
<td>Mus 163 [G] (GER) 3&lt;br&gt;Mus 360 [M]^1 3&lt;br&gt;Mus 361 [M]^1 3&lt;br&gt;Mus 435 or 435 1&lt;br&gt;Mus 481 1&lt;br&gt;Mus Private Lessons 2</td>
</tr>
<tr>
<td>Second Semester</td>
<td>14</td>
<td>Business Minor Course 3&lt;br&gt;Mus 257 2&lt;br&gt;Mus 351 1&lt;br&gt;Mus 481 1&lt;br&gt;Mus Private Lessons 2</td>
</tr>
<tr>
<td>First Year</td>
<td>Hours</td>
<td>Courses</td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>Second Semester</td>
<td>14</td>
<td>Arts &amp; Humanities [H,G] (GER) or&lt;br&gt;Social Sciences [S,K] (GER) or&lt;br&gt;Biological Sciences [B] (GER) 3&lt;br&gt;Physical Science [P] (GER) 4&lt;br&gt;Theat 160 [H] (GER) 3</td>
</tr>
<tr>
<td>Second Year</td>
<td>Hours</td>
<td>Courses</td>
</tr>
<tr>
<td>----------</td>
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<tr>
<td>First Year</td>
<td>Hours</td>
<td>Courses</td>
</tr>
<tr>
<td>Second Semester</td>
<td>14</td>
<td>Arts &amp; Humanities [H,G] (GER) 3&lt;br&gt;Mus Private Lessons 2&lt;br&gt;Theat 160 [H] (GER) 3</td>
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### Senior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>Hours</td>
<td>Courses</td>
</tr>
<tr>
<td>Second Semester</td>
<td>14</td>
<td>Arts &amp; Humanities [H,G] (GER) or&lt;br&gt;Social Sciences [S,K] (GER) or&lt;br&gt;Theat 366 3&lt;br&gt;Mus 257 2&lt;br&gt;Mus 360 [M]^1 3&lt;br&gt;Mus 435 or 428 1&lt;br&gt;Mus 452 2&lt;br&gt;Mus Private Lessons 2&lt;br&gt;Theat 163 3&lt;br&gt;Theat 367 [H] (GER) 3</td>
</tr>
</tbody>
</table>

### BACHELOR OF MUSIC, WITH ELECTIVE STUDIES IN THEATRE (128 HOURS) FYDA

- This program offers specialization in music in combination with a minor in Theatre.
- Students following this option are required to present an acceptable senior half recital in the major performance medium.
- Students must pass the piano proficiency exam, pass the upper-division exam, achieve a 2.5 g.p.a. and a grade of C or better in all Music classes.
- Students may substitute one 3-credit Tier I Science and one 1-credit Science Elective.

### Major in Composition

**COMPOSITION DEGREE PROGRAM (OPTION V - 141 HOURS) FYDA**

Requirements include: Upper division exam; piano proficiency exam; 2.5 average in all music courses; C or better in all music courses; junior and senior recitals.
**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3</td>
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<tr>
<td>Mus 481</td>
<td>2</td>
</tr>
<tr>
<td>Mus 456</td>
<td>2</td>
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<tr>
<td>Music Electives</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>Mus 181</td>
<td>1</td>
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<tr>
<td>Mus 251</td>
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</tr>
<tr>
<td>Mus 252</td>
<td>2</td>
</tr>
<tr>
<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<table>
<thead>
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<th>Second Semester</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<td>Mus 252</td>
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<tr>
<td>Mus 456</td>
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<tr>
<td>Music Electives</td>
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</tr>
<tr>
<td>Tier III Capstone (GER)</td>
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<td>Electives</td>
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**Sophomore Year**

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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<tr>
<td>Mus 256</td>
<td>3</td>
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<tr>
<td>Mus 353</td>
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<tr>
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<td>Mus Ensemble</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Science Elective</td>
<td>3</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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<table>
<thead>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>Mus Private Lessons</td>
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<tr>
<td>Science Elective</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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**Junior Year**

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<tr>
<td>Biographical Information [H,G] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Mus 256</td>
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<td>Mus 351</td>
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<td>Mus Private Lessons</td>
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<tr>
<td>Music Electives</td>
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<table>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Music Electives</td>
<td>4</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Degree Program Course, if necessary</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Mus 182</td>
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<td>Mus 351</td>
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<td>Mus 352</td>
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</tr>
<tr>
<td>Mus 491</td>
<td>2</td>
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<tr>
<td>Mus Ensemble</td>
<td>1</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
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<tr>
<td>T &amp; L 300</td>
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<table>
<thead>
<tr>
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<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Mus 281</td>
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</table>

**BROAD ENDORSEMENT DEGREE PROGRAM (OPTION IVa - 156 HOURS)**

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 performance; piano proficiency; solo half-recital.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Mus 360 [M] (GER)</td>
<td>3</td>
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<tr>
<td>Mus 480</td>
<td>3</td>
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<tr>
<td>Mus 483</td>
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<td>Mus 488</td>
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<td>Mus 493</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 303</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 317/18</td>
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</tr>
<tr>
<td>T &amp; L 328 or Mus 455/453</td>
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**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>EdPsy 402</td>
<td>2</td>
</tr>
<tr>
<td>Mus 361 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Mus 487</td>
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<td>Mus 490</td>
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</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 404</td>
<td>3</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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**Sophomore Year**

<table>
<thead>
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<th>Hours</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Mus 182</td>
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<tr>
<td>Mus 351</td>
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</tr>
<tr>
<td>Mus 352</td>
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</tr>
<tr>
<td>Mus 491</td>
<td>2</td>
</tr>
<tr>
<td>Mus Ensemble</td>
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</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
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<tr>
<td>T &amp; L 300</td>
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<table>
<thead>
<tr>
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<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 281</td>
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</table>

1. Fall, alternate year only.
2. Fall only.
### CHORAL/GENERAL ENDORSEMENT

**DEGREE PROGRAM (OPTION IVb - 152 HOURS)**

Requirements include: C or better in all music and education courses; 2.5 music average; 2.5 education average; 2.5 overall average; 7 credits (minimum 4 vocal) ensemble; upper-division exam, piano proficiency; solo half recital.

#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus 360 [M]</td>
<td>3</td>
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<tr>
<td>Mus 480</td>
<td>3</td>
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<tr>
<td>Mus 483</td>
<td>1</td>
</tr>
<tr>
<td>Mus 488</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 303</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 317/18</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 328 or Mus 455/453</td>
<td>2</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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</table>

<table>
<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>
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<td>Ed Psych 402</td>
<td>2</td>
</tr>
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<td>Math [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 361 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Mus 489</td>
<td>2</td>
</tr>
<tr>
<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
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<tr>
<td>T &amp; L 328 or Mus 455/453</td>
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<tr>
<td>Complete Writing Portfolio</td>
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#### Senior Year

<table>
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<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>400-level Mus Private Lessons</td>
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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Mus 435</td>
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<td>T &amp; L 404</td>
<td>3</td>
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<td>Tier III Capstone (GER)</td>
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<td>T &amp; L 415</td>
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<td>Chosen from Mus 428-444.</td>
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<tr>
<td>Spring only.</td>
<td></td>
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<tr>
<td>Fall, alternate years only.</td>
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<tr>
<td>Spring, alternate years only.</td>
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#### MUSIC EDUCATION, WITHOUT TEACHING CERTIFICATE (OPTION IVA-132 HOURS)

This program offers specialization in music education. At least 42 of the hours required for this degree must be 300-400-level courses.

The following curricula are designed to prepare students as professional teachers of music.

- Students following any teacher preparation option are required to present an acceptable senior half recital in the major performance medium.
- Students following any teacher preparation option must have a minimum g.p.a. of 2.5 in all of the following areas: cumulative g.p.a., Professional Education Core with a C or better in each course, and academic major (and minor if any) with a C or better in each course. Students certifying as majors in any of the option IV endorsements must also certify as majors in the College of Education. Since this option is likely to lead to enrollment in the MA in Music, students are advised that admission to graduate study requires a 3.0 cumulative g.p.a.
- Students must pass the Piano Proficiency Exam, pass the upper-division exam, achieve a cumulative 2.5 g.p.a. and a grade of C or better in all Music classes, and a 2.5 g.p.a. and a grade of C or better in all College of Education Professional Core courses. Class piano credits are not required for the degree. Instrumentalists must complete 4 credits in instrumental performance studies (private lessons and/or ensemble) and vocalists must complete 4 credits of instrumental performance studies. Pass half senior recital.

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engr 101 [W] (GER)</td>
<td>3</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Mus 181</td>
<td>0 or 1</td>
</tr>
<tr>
<td>Mus 252</td>
<td>1</td>
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<tr>
<td>Mus 361 [M]</td>
<td>3</td>
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<tr>
<td>Mus 482</td>
<td>1</td>
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<td>Mus 487</td>
<td>2</td>
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<tr>
<td>Mus 494</td>
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<tr>
<td>Mus Ensemble</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<table>
<thead>
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<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Mus 161</td>
<td>3</td>
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<td>Mus 253</td>
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<td>Mus 254</td>
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<td>Mus 489</td>
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<tr>
<td>Mus Ensemble</td>
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<td>Complete Writing Portfolio</td>
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#### Sophomore Year

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<tbody>
<tr>
<td>Biology [B] (GER)</td>
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<td>History [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 435</td>
<td>1</td>
</tr>
<tr>
<td>T &amp; L 404</td>
<td>3</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Ed Psych 402</td>
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<td>Math [N] (GER)</td>
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<td>Mus 361 [M]</td>
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<td>Mus 489</td>
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<td>Mus 494</td>
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<td>Mus Ensemble</td>
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<td>Complete Writing Portfolio</td>
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#### Junior 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>
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<td>Mus 485</td>
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<td>Mus 487</td>
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<td>Mus 490</td>
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</tr>
<tr>
<td>Mus 491</td>
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<tr>
<td>Mus 492</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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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Biology [B] (GER)</td>
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<tr>
<td>History [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Mus 435</td>
<td>1</td>
</tr>
<tr>
<td>T &amp; L 404</td>
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</tbody>
</table>

### INSTRUMENTAL/GENERAL ENDORSEMENT DEGREE PROGRAM (OPTION IVc - 151 HOURS)

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.

#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Mus 360 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Mus 480</td>
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<tr>
<td>Mus 493</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>T &amp; L 303</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 317/18</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 328 or Mus 455/453</td>
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<tr>
<td>Complete Writing Portfolio</td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 435</td>
<td>1</td>
</tr>
<tr>
<td>T &amp; L 404</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Mus 497</td>
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</tr>
<tr>
<td>T &amp; L 415</td>
<td>12</td>
</tr>
<tr>
<td>Fall only.</td>
<td></td>
</tr>
<tr>
<td>Chosen from Mus 428-444.</td>
<td></td>
</tr>
<tr>
<td>Spring only.</td>
<td></td>
</tr>
<tr>
<td>Fall, alternate years only.</td>
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</tr>
<tr>
<td>Spring, alternate years only.</td>
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</tr>
</tbody>
</table>

#### INSTRUMENTAL/GENERAL ENDORSEMENT DEGREE PROGRAM (OPTION IVc - 151 HOURS)

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.

#### Junior Year

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<th>First Semester</th>
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</tr>
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<tbody>
<tr>
<td>Mus 360 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Mus 480</td>
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</tr>
<tr>
<td>Mus 493</td>
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<table>
<thead>
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<th>Hours</th>
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<tr>
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<td>Complete Writing Portfolio</td>
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<table>
<thead>
<tr>
<th>Third 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>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 435</td>
<td>1</td>
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<tr>
<td>T &amp; L 404</td>
<td>3</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Hours</th>
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<tbody>
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<tr>
<td>T &amp; L 415</td>
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</tr>
<tr>
<td>Fall only.</td>
<td></td>
</tr>
<tr>
<td>Chosen from Mus 428-444.</td>
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<tr>
<td>Spring only.</td>
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<tr>
<td>Spring, alternate years only.</td>
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</table>

#### INSTRUMENTAL/GENERAL ENDORSEMENT DEGREE PROGRAM (OPTION IVc - 151 HOURS)

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.
### School of Music and Theatre Arts

#### Bachelor of Arts in Music (123 Hours) ✔FYDA

This four-year program is designed to meet the needs of students wishing to pursue 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 degree. Other requirements include: C or better in all music courses; 2.5 music average; upper-division exam; piano proficiency exam or grade of C or better in Mus 182.

<table>
<thead>
<tr>
<th><strong>Freshman Year</strong></th>
<th><strong>Sophomore Year</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td><strong>First Semester</strong></td>
</tr>
<tr>
<td>Mus 487 (in MA degree, String Techniques)</td>
<td>GenEd 110 [A] (GER)</td>
</tr>
<tr>
<td>Mus 487 (in MA degree, Wind/Br/Perc Techniques)</td>
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<tr>
<td>Mus 550 or 500-level theory elective (in MA degree)</td>
<td>Mus 351</td>
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<tr>
<td>Mus 575 (as Mus 483; in MA degree)</td>
<td>Mus 352</td>
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<tr>
<td>Mus 487 (in MA degree)</td>
<td>Mus Ensemble</td>
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<tr>
<td>T &amp; L 404</td>
<td>Mus Private Lessons</td>
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<tbody>
<tr>
<td>EdPsy 402</td>
<td>GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Mus 181</td>
<td>Mus 281</td>
</tr>
<tr>
<td>Mus 353</td>
<td>Mus 354</td>
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<tr>
<td>Mus 360 [M]</td>
<td>Mus Ensemble</td>
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<tr>
<td>Complete Writing Portfolio</td>
<td>Social Sciences [S,K] (GER)</td>
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#### MA Degree—first semester

<table>
<thead>
<tr>
<th><strong>Second Semester</strong></th>
<th><strong>Second Semester</strong></th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>200-400-level Non-Music Electives</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>200-400-level Non-Music Elective</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>300-400-level Music Elective</td>
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<tr>
<td>Mus 361 [M]</td>
<td>Tier III Capstone (GER)</td>
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<table>
<thead>
<tr>
<th><strong>Junior Year</strong></th>
<th><strong>Senior Year</strong></th>
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<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td><strong>First Semester</strong></td>
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<tr>
<td>200-400-level Non-Music Electives</td>
<td>200-400-level Non-Music Electives</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G]</td>
<td>Social Sciences [S,K] (GER)</td>
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<td>Tier III Capstone (GER)</td>
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<table>
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<tr>
<th><strong>Second Semester</strong></th>
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<tbody>
<tr>
<td>300-400-level Music Elective</td>
<td>300-400-level Music Elective</td>
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<tr>
<td>Tier III Capstone (GER)</td>
<td>Tier III Capstone (GER)</td>
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</table>

#### Degree Program Requirements

**Honors students complete Honors Requirements in place of General Education Requirements.** Students seeking the Bachelor of Arts in Theatre Arts and Drama must complete the General Education Requirements plus those for the College of Liberal Arts. Students pursuing a teaching endorsement option must have a minimum g.p.a. of 2.5 in all of the following areas: cumulative g.p.a., Professional Education Core with a C or better in each course, and academic major with a C or better in each course (and minor if any). Students certifying as majors in teacher endorsement curricula must also certify as majors in the College of Education.

#### THEATRE ARTS AND DRAMA DEGREE PROGRAM (120 Hours) ✔FYDA

<table>
<thead>
<tr>
<th><strong>Freshman Year</strong></th>
<th><strong>Second Semester</strong></th>
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<td>Freshman Year</td>
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<td>3**</td>
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<table>
<thead>
<tr>
<th><strong>Sophomore Year</strong></th>
<th><strong>MA Year</strong></th>
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<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td><strong>First Semester</strong></td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>Math Proficiency [N] (GER)</td>
</tr>
<tr>
<td>Music Private Lessons</td>
<td>Physical [P] Sciences (GER)</td>
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<tr>
<td>Mus Ensemble</td>
<td>Physical [P] Sciences (GER)</td>
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<th><strong>Second Semester</strong></th>
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<tbody>
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<td>Social Sciences [S,K] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
<td>Theat 261</td>
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<td>Theat 261</td>
<td>Theat 496</td>
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<th><strong>Junior Year</strong></th>
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<th><strong>Senior Year</strong></th>
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<td>3**</td>
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<td>4**</td>
<td>4**</td>
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</tbody>
</table>

**Music Minor and Supporting Teaching Endorsements**

A 22-24-hour music minor course of study is available. For details contact the Music Program. Also available are supporting teaching endorsements in music for students whose primary teaching endorsement is in other majors.

#### Theatre Arts and Drama

**Associate Professor and Theatre Arts and Drama Coordinator, G. R. Caldwell; Professor, L. H. Harris; Associate Professors, T. Converse, L. Farman, W. H. Sheppard.**

The Theatre Arts and Drama Program provides 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.

---

1. Class piano credits not required for degree.
2. Fall only.
3. Spring only.
4. One 4-credit Tier I Science may be substituted for both the 3-credit Tier I Science and the 1-credit Science Elective.
5. T & L 328 required for degree; Mus 455 or 453 required.
6. Fall only, alternate year.
7. Spring only, alternate year.

---

### Bachelor of Arts in Music (123 Hours) ✔FYDA

This four-year program is designed to meet the needs of students wishing to pursue 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 degree. Other requirements include: C or better in all music courses; 2.5 music average; upper-division exam; piano proficiency exam or grade of C or better in Mus 182.

- **First Semester**
  - Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 6
  - Mus 480 3
  - Mus 4882 or 588 2
  - Mus 4893 2
  - Mus Ensemble (Choral) 1
  - Mus Private Lessons (400-level, Sr. Recital) 2
  - Tier III Capstone (GER) 3

- **Second Semester**
  - GenEd 110 [A] (GER) 3
  - Mus 351 3
  - Mus 352 1
  - Mus Ensemble 1
  - Mus Private Lessons 2

#### MA Degree—first semester

- **Second Semester**
  - GenEd 111 [A] (GER) 3
  - Mus 281 1
  - Mus 353 3
  - Mus 354 1
  - Mus Ensemble 1
  - Physical [P] Sciences (GER) 4

- **Junior Year**
  - First Semester
    - 200-400-level Non-Music Electives 6
    - Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
    - Intercultural [L,G,K] (GER) 3
    - Mus 360 [M] 3
    - Mus Ensemble 1
  - Second Semester
    - Arts & Humanities Elective 1
    - Social Sciences [S,K] (GER) 3
    - Mus 361 [M] 3
    - Mus Ensemble 1

- **Senior Year**
  - First Semester
    - 200-400-level Non-Music Electives 8
    - Social Sciences [S,K] (GER) 3
  - Second Semester
    - 200-400-level Non-Music Electives 8
    - 300-400-level Music Elective 4
    - Tier III Capstone (GER) 3

#### Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements. 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.

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---

1. Class piano credits not required for degree.
2. Fall only.
3. Spring only.
4. One 4-credit Tier I Science may be substituted for both the 3-credit Tier I Science and the 1-credit Science Elective.
5. T & L 328 required for degree; Mus 455 or 453 required.
6. Fall only, alternate year.
7. Spring only, alternate year.
Performance Studies in Music

Performance studies are offered on several levels to meet the needs of music majors as well as those of students from the general university community. There are no additional fees beyond tuition for either performance studies or the use of practice facilities. 100-level performance studies in selected instruments are open to any student without audition through class instruction. The 200-level denotes group or private instruction for advanced non-music majors by special permission of the Director (audition required) or study in a secondary performance medium by music majors.

Individual instruction in performance studies is offered at the 300- and 400-level for music majors and, by special permission of the Director, to advanced non-music majors who meet all requirements for music majors as listed below. All students enrolled in 200- through 400-level performance instruction are required to attend weekly convocation (student recital), attend recitals as required, participate in at least one approved music department ensemble, and take jury examinations at the end of each term. For enrollees in Mus 203, 303, or 403, the required ensemble is Mus 431 or Mus 432. Students enrolled in 300- and 400-level performance study must enroll in a music theory or music history course each semester until music core requirements have been completed. No student will be permitted to enroll in 300-400-level performance studies unless all of these criteria are met. In addition, each music major must pass the piano proficiency exam, as a precondition to 400-level standing.

Performance studies may not be taken on a pass, fail basis or audited. Enrollment in performance studies 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

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus 102 Piano</td>
<td>3</td>
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</tr>
<tr>
<td>Mus 103 Voice</td>
<td>3</td>
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<tr>
<td>Mus 120 Guitar</td>
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<tr>
<td>Studio Instruction</td>
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<tr>
<td>Mus 201 Organ</td>
<td>3</td>
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<tr>
<td>Mus 202 Piano</td>
<td>3</td>
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</tr>
<tr>
<td>Mus 203 Voice</td>
<td>3</td>
<td>Prereq c/l in Mus 431, 432, or by interview only.</td>
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<tr>
<td>204 Horn</td>
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<td>205 Trumpet</td>
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<td>206 Trombone</td>
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<td>207 Baritone</td>
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<td>208 Tuba</td>
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<tr>
<td>209 Percussion</td>
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<td>210 Violin</td>
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<td>211 Viola</td>
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<td>212 Violoncello</td>
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<td>213 Contrabass</td>
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<td>214 Flute</td>
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<td>215 Oboe</td>
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<td>216 Clarinet</td>
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<td>217 Bassoon</td>
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<td>218 Saxophone</td>
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<tr>
<td>220 Guitar</td>
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</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Hours</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Mus 102 Piano</td>
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<tr>
<td>Mus 103 Voice</td>
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</tr>
<tr>
<td>Mus 120 Guitar</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Studio Instruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mus 201 Organ</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mus 202 Piano</td>
<td>3</td>
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<td>Mus 203 Voice</td>
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<td>Prereq c/l in Mus 431, 432, or by interview only.</td>
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<td>204 Horn</td>
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<td>205 Trumpet</td>
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<td>206 Trombone</td>
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<td>207 Baritone</td>
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<td>208 Tuba</td>
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<td>209 Percussion</td>
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<td>210 Violin</td>
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<td>211 Viola</td>
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<td>212 Violoncello</td>
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<td>215 Oboe</td>
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<td>220 Guitar</td>
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</table>

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.
152 Music Fundamentals II 3 Prereq Mus 151. Notation and performance of music fundamentals: melody, rhythm, scales, key signatures, and intervals.

153 [H] Musical Style in Composition 3 Introductions to musical style in composition, history, and analysis including theory fundamentals, history survey, and beginning composition.

154 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.

155 Class Piano II 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. By audition only. Continuation of Mus 151. Scales, arpeggios, blocked and broken chords; repertoire to complement individual skills and theoretical knowledge.

251 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// in Mus 251. Ear training, sight singing, keyboard.

256 Seminar in Composition 1 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 254. By interview only. Original writings in small forms.

257 Jazz Theory 2 Introduction to jazz theory; chord symbols, extended harmony, scales and modes, voicings, bass lines and substitutions.

258 [G] Introduction to Jazz Improvisation 2 Prereq Mus 257. 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. Counterpoint techniques of the 16th and 17th centuries; original stylistic writing.

452 Electronic Music 2 (1-3) Prereq Mus 353. Introduction to computer-controlled digital, analog, and sampling synthesis; topics include sequencing, waveform editing, and creative projects.

453 Form and Analysis 2 Prereq Mus 353. Organization of musical works according to the relationships in sectional divisions, thematic divisions, and tonal bases.

455 Seminar in Instrumentation 2 May be repeated for credit. Prereq Mus 352. Scoring for various instrumental combinations.

456 Seminar in Advanced Composition V 1-3 May be repeated for credit. Prereq upper-level composition review. Original writing in small and large forms (traditional and experimental).

475 (355) Seminar in Jazz Arranging/Composition 2 Prereq Mus 257. Arranging and composing for instrumental jazz ensembles.

482 Advanced Jazz Improvisation 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 258. Advanced concepts in jazz improvisation.

491 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.

554 Seminar in Music Theory 2 May be repeated for credit; cumulative maximum 4 hours.

555 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.

556 History and Literature

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.


168 [H] History of Jazz 3 History of jazz in chronological sequence; social and political contexts of the African-American origins of jazz; stylistic developments.

169 [G] Women and Music 3 Survey of the world’s history of women in music in their respective social and political contexts.

170 Topics Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

171 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.

School of Music and Theatre Arts
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 Education 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 I 2 Italian and English; International Phonetic Alphabet; fundamental diction principles; applied to each language and oriented to needs of the singer.

372 Diction for Singers II 2 French and German; International Phonetic Alphabet; fundamental diction principles, applied to each language and oriented to needs of the singer.

388 Music for the Classroom Teacher 2 For elementary education majors. Prereq Mus 153 or satisfactory score on music fundamentals test administered by music faculty; admission to Teacher Certification Program. Singing, movement, listening and instrumental methods/resources for K-8 grades.


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合唱音乐 at college level.


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 490. Diverse methods and materials 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 4 Prereq maintain 2.5 g.p.a. in primary, supporting, and professional education core courses; completion of all required courses. By interview only. Supervised teaching in public schools (full day, full semester), including a two-hour weekly seminar reflecting on effective teaching. S, F grading.

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

370 Topics - Study Abroad 3 Special topics in music taught in NCSA study abroad programs.

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.

597 Topics for Music V 1-4 Varying subjects offered at graduate level.

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

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

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

Description of Courses

Theatre Arts and Drama

120 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.

311 Modern Dance II 1 (0-3) Prereq two years prior dance experience. Advanced modern dance techniques, stage choreography, and performance.

145 [G] Contemporary World Theatre 3 Examination of contemporary theatrical works illustrating the clash which occurs when people of one culture live in another. EMAIL 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 I: Directing 3 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.
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.

[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.

[Mus 364] [H] Musical Theatre 3 Survey of musical theatre from Vienna to Broadway, lyric drama from Mozart to the present.

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.

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.

Topics—Study Abroad 3

Topics—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

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.

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.

Performance III: Directing 3 (0-6) May be repeated for credit; cumulative maximum 6 hours. Prereq Theat 360 or by interview only. Ad-hoc work in stage direction; weekly exercises focusing on modern, non-realistic theatrical forms and culminating in directing a one-act play. Credit not granted for both Theat 461 and 561.

[368] Visual Communication in Theatre, Film and Television 3 Analysis of the visual aspects of theatre, film and television applying research in perceptual psychology.

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.

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 461 and 564.

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.

Topics in Drama 3 May be repeated for credit; maximum 6 hours. Individuated study and discussion of drama and performance theory from different historical eras and social contexts.

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.

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.

Applied Puppetry Arts 2 (1-3) Prereq c/o 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.

Drama Therapy 3 Prereq current knowledge in psychology/counseling theory. Balanced theoretical and experiential approach toward understanding therapeutic applications of drama and theatre. Credit not granted for both Theat 472 and 572.

Playwriting 3 Prereq Engl 351. Practical experience in the creative process of playwriting.

Internship in Professional Theatre V 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.

Rehearsal and Performance V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. By interview only. Practical application of acting techniques during the production of plays.

Applied Theatre Studies V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 12 hours. Practical application of acting, scenery construction and painting, costumes, properties, box office and other projects connected with University Theatre productions.

Repertory Theatre 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Rehearsal, performance and related technical and management work in Summer Palace Theatre.

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

Research Methods and Dramaturgy 3 Prereq graduate standing. Theory, methods, and practice of graduate-level research as applied to both scholarship and theatre productions.

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.

Instructional Practicum 1 May be repeated for credit; cumulative maximum 4 hours. Instructing and guidance in teaching theatre arts and drama. S, F grading.

History of the Theatre I 3 Major developments of all aspects of theatre arts from preliterate times to 1650.

History of the Theatre II 3 Major developments of all aspects of theatre arts from 1650 to 1800.

Performance III: Directing 3 (0-6) Graduate-level counterpart of Theat 461; additional requirements. Credit not granted for both Theat 461 and 561.

Creative Drama 3 Prereq graduate standing. Graduate-level counterpart of Theat 464; additional requirements. Credit not granted for both Theat 464 and 564.

Seminar in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Seminar in various periods, movements, and phases of drama.

Theatre for Children and Youth 3 Prereq graduate standing. Graduate-level counterpart of Theat 468; additional requirements. Credit not granted for both Theat 468 and 568.

Scene Design: Art and Practice 3 (0-6) Prereq graduate standing. The art of scene design, conceptualization and actualization; design analysis, research, and technical skills needed to execute renderings and models.

Theory and Practice of Puppetry Arts 3 Prereq Theat 163. Graduate-level counterpart of Theat 470; additional requirements. Credit not granted for both Theat 470 and 570.

Applied Puppetry Arts 2 (1-3) Graduate-level counterpart of Theat 471; additional requirements. Credit not granted for both Theat 471 and 571.

Drama Therapy 3 Graduate-level counterpart of Theat 472; additional requirements. Credit not granted for both Theat 472 and 572.

Graduate Internship in Professional Theatre V 2-15 Prereq Theat 501; completion of one academic year of master’s level course work in Theatre Arts and Drama at WSU. Internship position at upper levels of administration or production that requires expertise in specific area; theories/practical application. 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.

Department of Natural Resource Sciences

Department of Natural Resource Sciences


Natural resources are the basis for much of the economic activity in the state of Washington and in the world. Highly trained and motivated resource managers and natural resource scientists are needed to meet today’s and tomorrow’s demands for the multiple products and services supplied by the world’s natural resources. The objectives of the Department of Natural Resource Sciences are to prepare students in professional areas such as forestry, range, wildlife, and wildland recreation, provide students interested in natural resource policy or environmental law with a curriculum which integrates the natural resource and social sciences, and provide specialized curricula for students interested in natural resource manage-
ment/science with an emphasis in wetland/aquatic resources or landscape ecology. For students interested in Veterinary Medicine, the Wildlife Science program provides a pre-vet option that allows students to prepare for Vet school while pursuing their interest in wildlife science. In each of the curricula, the objective is not only to provide a solid scientific background for natural resource use, but also to kindle a holistic perspective on resource management and an ability to conduct research in natural resource sciences that will increase the basic knowledge and productivity of the resources while maintaining or improving aesthetic qualities. It is recommended that students interested in one the curricula contact the department to obtain the most current information.

Within the undergraduate program, students can choose to concentrate on either natural resource management or natural resource sciences. Graduates of the department are employed by all the major public and private land management and wildlife organizations in the United States. They 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 the graduate level, MS and PhD 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. Graduate-level students work with their academic committees in the development of academic programs and selection of research topics. Student chapters of professional societies (Society of American Foresters, Society for Range Management, and The Wildlife Society) provide additional opportunities for students 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 internships and cooperative education opportunities in their chosen field.

Facilities such as the department’s undergraduate project laboratory, graduate student and faculty computer laboratory, the ecophysiology laboratory, bear research laboratory, large animal holding complex, and the greenhouses at the Steffen Center complex, the Hudson Biological Reserve at Smoot Hill, the Ownbey Herbarium, and the 12,000-acre Colockum multiple-use research area provide students with access to the facilities and technologies needed to develop competence in their chosen professions.

**Degree Program Requirements**

**Honors students complete Honors Requirements in place of General Education Requirements.**

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 Management**

Students pursuing the BS in Natural Resource Management must major in one (or more) of four areas: forestry, range, wildlife, and wildland recreation. All majors share a set of basic science requirements 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. In addition, each major has a specialized curriculum designed to meet the requirements of the appropriate professional society or a specific objective set by the department’s faculty. Forestry, range and wildland recreation also include options 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, natural resource core and the forestry core classes, selects a professional option. The choice of the option is usually made at the end of the sophomore or beginning of the junior year. The forestry options include business management, directed studies, forestry management, and wildlife habitat. The management option provides a student with an understanding of the underlying principles and techniques used in forest management. The forest business option (with business minor) provides a student with a basic understanding of business and forestry needed in the business aspects of forestry in the public and private sectors. The wildlife habitat option provides organizations with forestry professionals sensitive to the needs of wildlife and able to bridge the gap between the traditional forester and the wildlife biologist. The directed studies option provides a student with the opportunity to develop a professional program that will meet individual career goals. Students completing the forest management option meet the qualifications of the U.S. Office of Personnel Management for forester. With careful selection of courses students in the wildlife habitat option will meet the federal qualifications for wildlife biologist.

**FIRST AND SECOND YEAR REQUIREMENTS**

The first two years are common to all forestry degree programs:

**Freshman Year**

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<td>Chem 101 [P] or 105 [P] (GER)</td>
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**Second Semester**

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<td>NATRS 302 [M]</td>
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<td>NATRS 313</td>
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<td>NATRS 374</td>
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¹ For the Business Management and Wildlife Habitat, take H D 205 as well during this semester.
² For the Business Management, Directed Studies, and Wildlife Habitat, take NATRS 312 as well during this semester.
³ For the Business Management, take Econ 101.
⁴ For the Business Management, choose from Acctg 230, B Law 210, Dec S 215, Dec S 340. For Directed Studies and Forestry Management, take H D 205. For Wildlife Habitat, take NATRS 280.

**BUSINESS MANAGEMENT DEGREE PROGRAM (141 HOURS)**

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¹ For the Business Management and Wildlife Habitat, take H D 205 as well during this semester.
² For the Business Management, Directed Studies, and Wildlife Habitat, take NATRS 312 as well during this semester.
³ For the Business Management, take Econ 101.
⁴ For the Business Management, choose from Acctg 230, B Law 210, Dec S 215, Dec S 340. For Directed Studies and Forestry Management, take H D 205. For Wildlife Habitat, take NATRS 280.

**FIRST SEMESTER**

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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Engl 402 [W]</td>
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<tr>
<td>NATRS 280 or 480¹</td>
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<td>NATRS 311</td>
</tr>
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<td>NATRS 351</td>
</tr>
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<td>Complete Writing Portfolio</td>
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**SECOND SEMESTER**

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<td>NATRS 410 or 420¹</td>
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<td>NATRS 440</td>
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<td>Restricted Math Elective¹</td>
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**Year 3, Summer Session:**

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**SENIOR YEAR**

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<td>NATRS 418</td>
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<td>NATRS 430</td>
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**SECOND SEMESTER**

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<td>NATRS 420 or 410¹</td>
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<td>NATRS 438 [M]</td>
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<tr>
<td>NATRS 460</td>
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<tr>
<td>Required Business²</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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</table>

¹ NATRS 480 offered spring semester only.
³ Both required, alternating years.
⁴ One from: Math 140, 201, 202; Stat 401, 412, 422.

**DIRECTED STUDIES DEGREE PROGRAM (140 HOURS)**

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<td>Engl 402 [W] (GER)</td>
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<td>Required Business Elective¹</td>
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**Junior Year**

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<tr>
<td>NATRS 280 or 480¹</td>
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</table>
### FORESTRY MANAGEMENT DEGREE PROGRAM (138 HOURS)  
**FYDA**

#### Junior Year

**First Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Engl 402 [W] 3
- NATRS 311 3
- NATRS 351 or 348 2 or 3
- NATRS 410 or 420 2 or 3
- NATRS 403 3
- NATRS 410 or 420 3
- Tier III Capstone (GER) 3

**Second Semester**
- Arts & Humanities [H,G] 3
- Social Sciences [S,K] (GER) 3
- Natrs 430 or Forestry Elective 3
- Tier III Capstone (GER) 3

#### Senior Year

**First Semester**
- Arts & Humanities or Social Sciences [S,K] (GER) 3
- Natrs 430 or Forestry Elective 3
- Tier III Capstone (GER) 3

**Second Semester**
- Arts & Humanities or Social Sciences [S,K] (GER) 3
- Natrs 430 or Forestry Elective 3
- Tier III Capstone (GER) 3

### WILDLIFE HABITAT DEGREE PROGRAM (133 HOURS)  
**FYDA**

#### Junior Year

**First Semester**
- Engl 402 [W] 3
- NATRS 311 3
- NATRS 351 3
- NATRS 403 3
- Tier III Capstone (GER) 3
- Complete Writing Portfolio

**Second Semester**
- Tier III Capstone (GER) 3

#### Senior Year

**First Semester**
- Arts & Humanities [H,G] (GER) 3
- Tier III Capstone (GER) 3

**Second Semester**
- Arts & Humanities [H,G] (GER) 3
- Tier III Capstone (GER) 3

### RANGE MANAGEMENT MAJOR

The range management major contains an array of courses designed to prepare students for professional careers in one or several of the many facets of range management. This major is fully accredited by the Society for Range Management. Students who complete the wildlife habitat degree program may qualify to apply for wildlife biologist on the federal civil service register as well as range conservationist. The directed studies option is designed to give students an opportunity to minor in a subject area that will complement the range major.

### DIRECTED STUDIES AND WILDLIFE HABITAT DEGREE PROGRAMS (136 HOURS)  
**FYDA**

#### Freshman Year

**First Semester**
- As 101 3
- Bio S 103 [B] (GER) 4
WILDLAND MANAGEMENT MAJOR (125 HOURS)  

The wildlife management major provides students with a basic background in the sciences plus additional interdisciplinary courses emphasizing the management aspects of wildlife science. Students completing the management major in wildlife are employed by federal and state organizations such as US Fish and Wildlife Service, US Forest Service, National Park Service, and Washington Department of Wildlife, as well as non-profit and private organizations. The core requirements plus the electives in wildlife management allow majors to meet the U.S. Office for 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, range conservationist, and soil scientist. Wildlife students can individualize and often enhance their professional development by minorin in other subjects such as communications, computer science, and other natural resource fields (forestry, range or wildland recreation).

Freshman Year
First Semester  
Bio S 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  
Bio S 104 [B] (GER) 4
Chem 102 [P] or 106 [P] (GER) 4
GenEd 110 [A] Ger 3
H D 205 [C] (GER) 3
NATRS 101 1
Sophomore Year
First Semester  
GenEd 111 [A] (GER) 3
NATRS 204 4
NATRS 280 3
NATRS 301 3
Stat 212 [N] (GER) 4
Second Semester  
Ag Ec 201 [S] or Econ 101 [S] (GER) 3
Bio S 372 or NATRS 300 4
Intercultural [L,G,K] (GER) 3
NATRS 302 [M] 3
NATRS 312 3
NATRS 374 3
Junior Year
First Semester  
A S 101 or NATRS 351 3
Math Elective 3 or 4
NATRS 311 3
NATRS 450 [M] 3
SoilS 204 3
Complete Writing Portfolio
Second Semester  
Engl 402 [W] (GER) 3
ES/RP 444 3
NATRS 460 3
Zool 423 or 428 4
Physical Science Elective 3 or 4
Year 3, Summer Session: NATRS 491 2
Senior Year
First Semester  
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
NATRS 403 3
NATRS 435 4
Entom 343, Zool 412, or 430 3 or 4
Second Semester  
Arts & Humanities [H,G] (GER) 3
NATRS 436 4
NATRS 438 [M] 3
NATRS 480 3
Tier III Capstone (GER) 3

1 One from: Math 140, 171, 201, 202; Stat 401, 412, 422.
2 One from: C E 174, Chem 240, Geol 102, Phys 101.

WILDLAND RECREATION MANAGEMENT MAJOR

The wildland recreation major is designed to train wildland recreation managers who recognize, provide and perpetuate the recreational opportunities associated with natural environments. In addition to the required courses in the curriculum, students are expected to select or develop an option (16-18 hours) in the recreation field. This could be wilderness or dispersed area management, interpretation, state parks management, cultural resources management or it could be a minor in another discipline area such as business, environmental science, regional planning, forestry, wildlife or anthropology.

FIRST, SECOND, AND THIRD YEAR REQUIREMENTS

Freshman Year
First Semester  
Bio S 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  
Bio S 104 [B] (GER) 4
Chem 102 [P] or 106 [P] (GER) 4
GenEd 110 [A] Ger 3
H D 205 [C] (GER) 3
NATRS 101 1
Sophomore Year
First Semester  
GenEd 111 [A] (GER) 3
NATRS 204 4
NATRS 280 3
NATRS 301 3
Stat 212 [N] (GER) 4
Second Semester  
Ag Ec 201 [S] or Econ 101 [S] (GER) 3
Bio S 372 or NATRS 300 4
Intercultural [L,G,K] (GER) 3
NATRS 302 [M] 3
NATRS 312 3
NATRS 374 3
Junior Year
First Semester  
A S 101 or NATRS 351 3
Math Elective 3 or 4
NATRS 311 3
NATRS 450 [M] 3
SoilS 204 3
Complete Writing Portfolio
Second Semester  
Engl 402 [W] (GER) 3
ES/RP 444 3
NATRS 460 3
Zool 423 or 428 4
Physical Science Elective 3 or 4
Year 3, Summer Session: NATRS 491 2
Senior Year
First Semester  
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
NATRS 403 3
NATRS 435 4
Entom 343, Zool 412, or 430 3 or 4
Second Semester  
Arts & Humanities [H,G] (GER) 3
NATRS 436 4
NATRS 438 [M] 3
NATRS 480 3
Tier III Capstone (GER) 3

1 One from: Math 140, 171, 201, 202; Stat 401, 412, 422.
2 One from: C E 174, Chem 240, Geol 102, Phys 101.

WILDLAND RECREATION, DIRECTED STUDIES DEGREE PROGRAM (129 HOURS)

FIRST, SECOND, AND THIRD YEAR REQUIREMENTS

Freshman Year
First Semester  
Bio S 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  
Bio S 104 [B] or Bot 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  
Intercultural [L,G,K] (GER) 3
GenEd 111 [A] (GER) 3
H D 205 [C] (GER) 3
NATRS 204 2
NATRS 301 3
SoilS 201 3
Second Semester  
Ag Ec 201 [S] or Econ 101 [S] (GER) 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Bio S 372 or NATRS 300 4
NATRS 302 [M] 3

1 Both courses required.
2 16 credit hours required.

WILDLAND RECREATION, INTERPRETATIVE DEGREE PROGRAM (128 HOURS)

SECOND SEMESTER HOURS

Junior Year
First Semester  
Arts & Humanities [H,G] (GER) 3
NATRS 372 or 373 1 or 3
NATRS 403 3
Recreation Option Electives 6
SoilS 474 3
Year 3, Summer Session: NATRS 491 2

SECOND SEMESTER HOURS

Senior Year
First Semester  
Arts & Humanities [H,G] (GER) 3
NATRS 372 or 373 1 or 3
NATRS 403 3
Recreation Option Electives 6
SoilS 474 3
### Natural Resource Science Degree Program (120 Hours)

**Freshman Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 372 or 373</td>
<td>1 or 3</td>
</tr>
<tr>
<td>NATRS 403</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Both courses required.

2 Alternate year course—offered odd years only.

3 Both courses required.

### Bachelor of Science in Natural Resource Science

The BS in Natural Resource Science is offered for students most interested in the biological or the social basis of natural resource management and includes three majors: plant sciences, wildlife resource science, and a broad diverse natural resource science major which includes such options as Natural Resource Policy, Natural Resource Social Science, Landscape Ecology, Wetland/Aquatic Resources, and Directed studies. Each major is composed of a core of basic science and GER courses, a common core of basic natural resource courses and a core of more advanced science courses in the area of the major. Students selecting these curricula frequently intend to pursue graduate study or enter professional schools such as veterinary medicine. Students in the natural resource science and plant resource science major in consultation with their advisor develop an individualized curriculum consisting of an additional 16-20 hours of approved course work in a defined option.

### Natural Resource Science Degree Program (120 Hours)

**Freshman Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio S 103 [B] (GER)</td>
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<td>Chem 101 or 105 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 100 or approved alternative</td>
<td>1</td>
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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Bio S 104 [B] or Bot 120 [B] (GER)</td>
<td>4</td>
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<td>GenEd 110 [A] (GER)</td>
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### Sophomore Year

**First Semester**

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<td>Chem 105 [P] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>Math 107</td>
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**Second Semester**

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<td>Chem 106 [P] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>H D 205 [C] or ComSt 102 [C] (GER)</td>
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### Junior Year

**First Semester**

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<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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<td>NATRS 204</td>
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<td>NATRS 311</td>
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<tr>
<td>Physical Science Elective²</td>
<td>3 or 4</td>
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<td>Complete Writing Portfolio</td>
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**Second Semester**

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<td>3</td>
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<td>Engl 402 [W] (GER)</td>
<td>3</td>
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<tr>
<td>NATRS Option Electives²</td>
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### Senior Year

**First Semester**

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<td>NATRS 450 [M]</td>
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<td>SoilS 201</td>
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**Second Semester**

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¹ Must be approved by department.

² Must be approved by department, to total 16-20 credits in a required option in one of the following areas: General Studies, Directed Studies, Natural Resource Policy, Natural Resource Sociology, Wetland/Aquatic Resources, or Landscape Ecology.

³ One of: BC/BP 364, C E 174, Geol 102, or Phys 101

⁴ One of: Math 140, 171, 202; or Stat 401, 412, 422.

### Plant Resource Science Major

**Freshman Year**

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<td>Chem 105 [P] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<tr>
<td>Math 107</td>
<td>3</td>
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**Second Semester**

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<th>Credits</th>
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<tr>
<td>Bio S 104 [B] or Bot 120 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Chem 106 [P] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<td>H D 205 [C] or ComSt 102 [C] (GER)</td>
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### Wildlife Resource Science Major

**Freshman Year**

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<td>Chem 105 [P] (GER)</td>
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**Second Semester**

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<th>Credits</th>
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<tr>
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<tr>
<td>Chem 106 [P] (GER)</td>
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</table>
Department of Natural Resource Sciences

GenEd 110 [A] (GER) 3
H D 205 [C] or ComSt 102 [C] (GER) 3
NATRS 101 or approved alternative 1

**Sophomore Year**

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<td>GenEd 111 [A] (GER)</td>
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<td>NATRS 204</td>
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<td>NATRS 280</td>
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<th>Hours</th>
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<td>Ag Ec 201 [S] or Econ 101 [S] (GER)</td>
<td>3</td>
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<td>Bio S 372 or NATRS 300</td>
<td>4</td>
</tr>
<tr>
<td>GenCB 301</td>
<td>4</td>
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<tr>
<td>NATRS 302 [M]</td>
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<td>NATRS 312</td>
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**Junior Year**

<table>
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<th>Hours</th>
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<tbody>
<tr>
<td>NATRS 450 [M]</td>
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<td>NATRS 311</td>
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<td>Physical Science Elective$^1$</td>
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<tr>
<td>SoilS 201</td>
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<td>Stat 212 [N] (GER) or approved alternative</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 402 [W] (GER)</td>
<td>3</td>
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<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>NATRS 431</td>
<td>3 or 4</td>
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<tr>
<td>A S 440 or Zool 353</td>
<td>3 or 4</td>
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<tr>
<td>Restricted Math Elective$^2$</td>
<td>3 or 4</td>
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<table>
<thead>
<tr>
<th>Senior Year</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>NATRS 435</td>
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<tr>
<td>Wildlife Electives$^1$</td>
<td>3 or 4</td>
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<tr>
<td>Open Electives</td>
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<th>Second Semester</th>
<th>Hours</th>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>NATRS 436</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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<tr>
<td>Wildlife Electives$^1$</td>
<td>3 or 4</td>
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<tr>
<td>Open Elective</td>
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</tr>
</tbody>
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1 One of: BC/JP 364, C E 174, Geol 102, or Phys 101.
2 One of: Math 140, 171, 202, Stat 401, 412, or 422.
3 Two of: Entom 343, Zool 412, 423, 428, or 430 required.

**Transfer Students**

Transfer students should plan to complete the basic required courses in English composition, chemistry, speech, biological sciences, mathematics, microeconomics, social sciences, and arts and humanities by the end of their sophomore year. Students may be granted credit for equivalent technical courses taken at other academic institutions. Refer to WSU Transfer Guides for Community Colleges, available through community college advisors and the Internet, for details.

**Graduate Programs**

Students who plan to work toward an advanced degree should seek advice from their advisor in the selection of their courses. This will ensure that the courses selected will strengthen their education in areas needed to successfully complete an advanced degree program. Students from related fields who wish to obtain a master’s degree in either natural resources or natural resource sciences or the PhD in Environmental and Natural Sciences are encouraged to apply. They may be required to complete selected undergraduate courses in addition to the courses needed for their graduate programs. To be admitted to the department’s graduate program a student must (1) meet the Graduate School’s minimum admission requirements, (2) complete the department’s supplemental application form, (3) have three letters of reference and GRE scores submitted to the department and, (4) have at least one member of the department’s faculty willing to be the student’s major advisor.

**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, 304, 305. Restricted electives: at least 5 credit hours selected from NATRS 331, 348, 406, 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, 403, 471, 472. Restricted electives: at least 3 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 12 credit hours from NATRS 340, 406, 429, 431, 436, 450, 460, 480; no more than one from Zool 423, 428, 430.

**Description of Courses**

**Natural Resource Sciences**

- **NATRS 100**: Introduction to Natural Resource Management I 3 Nature and significance of natural resources; types of renewable natural resource systems; goals and principles of natural resource management.
- **NATRS 101**: Introduction to Natural Resource Management II 1 Professional fields of natural resource management. Field trip required.
- **NATRS 280**: 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.
- **NATRS 301**: 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.
- **NATRS 302**: 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.
- **NATRS 312**: 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.
- **NATRS 313**: 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.
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 production 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 (Rnge 357).

371 Wildland Recreation 3 Prereq junior standing. Historic development; benefits; federal, state, and local involvement; current problems and trends in the field of wildland recreation.

372 Wildland Recreation Field Laboratory 1 (0-3) Prereq NATRS 371 or c/f. 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, principles, and 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.

403 Natural Resource Planning 2 (2-3) Prereq Bot 372, NATRS 204, 300, 301, or by interview only, junior standing. Rec NATRS 438. Natural resource management planning processes to include public and private lands; inventory, public involvement, implementation, monitoring, assessing resource values. Credit not granted for both NATRS 403 and 503. Field trip required.

407 Forest Pest Populations 1 Prereq enrollment in CEFES Program. Concepts of genetics, population dynamics and pest management applied to forest management.

410 Forest Finance and Valuation 3 Prereq Ag Ec 201 or Econ 101; Math 107; NATRS 204. Economic and finance principles applied to forest management and appraisals. Credit not granted for both NATRS 410 and 510.

413 Forest Nursery Management 2 Forest nursery design; seed processing and quality; nursery equipment and cultural practices; seedling quality. Field trips required. Credit not granted for both NATRS 413 and 513. Cooperative course taught by UI (For 413/513), open to WSU students.

414 [M] Ecosystem Surveys and Inventories 3 (2-3) Prereq 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 9 hours. Graduate seminar topics in fisheries management.

420 Wood, Wood Products and Marketing 2 Prereq Bio S 104 or Bot 120; Rec NATRS 204 or by interview only. Wood science and its role in the manufacture and marketing of forest products. Field trip required. Credit not granted for both NATRS 420 and 520.

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.

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.

445 Nongame Management 3 (3-3) Prereq NATRS 455. Management criteria for wild vertebrate populations. Field trips required. Credit not granted for both NATRS 445 and 545.

447 Production and Cost Control in Forest Industry 3 Prereq NATRS 440. 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 441), open to WSU students.

448 Integrated Forest Management Models 3 (3-3) 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 448 and 540. Cooperative course taught by UI (For 477), open to WSU students.


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).
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>452</td>
<td>Range Development and Improvements 3 (2-3) Prereq NATRS 351</td>
<td>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 553.</td>
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<tr>
<td>453</td>
<td>Range Livestock Management 3 Rec NATRS 351</td>
<td>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.</td>
</tr>
<tr>
<td>459</td>
<td>Rangeland Ecology 3 Prereq NATRS 302</td>
<td>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 (Rge 459), open to WSU students.</td>
</tr>
<tr>
<td>460</td>
<td>Watershed Management 3 Prereq NATRS 204</td>
<td>Completion of department requirement in Bio S, Chem, and Ph S, Math and Stat; or by interview only. Principles and practices of management of forest and rangelands for protection, maintenance, and improvement of water resource values. Field trip required. Credit not granted for both NATRS 460 and 560.</td>
</tr>
<tr>
<td>461</td>
<td>(M) Management of Aquatic Ecosystems 3 (2-3) Prereq Bio S 102 or Bot 120, Chem 101</td>
<td>Introduction to the science and management of aquatic ecosystems, emphasizing lakes.</td>
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<tr>
<td>471</td>
<td>Wildland Recreation Management 3 (2-3) Prereq NATRS 371</td>
<td>Planning and management techniques applied to wildland recreation problems and situations. Field trips required. Credit not granted for both NATRS 471 and 571.</td>
</tr>
<tr>
<td>472</td>
<td>(M) Dispersed Recreation Management 3 (2-3) Prereq NATRS 371</td>
<td>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.</td>
</tr>
<tr>
<td>474</td>
<td>(M) Managing Public Use of Wildland Recreation Settings 3 Prereq NATRS 371</td>
<td>Techniques for managing public use in dispersed recreation settings. Field trips required. Credit not granted for both NATRS 474 and 574.</td>
</tr>
<tr>
<td>475</td>
<td>Management of Recreation Sites and Leisure Settings 2 Introduction to theory, processes, and techniques for managing natural resource-based recreation and tourism sites; emphasis on site impacts and their management, visitor/customer management, liability and risk management, and the proper care of landscape trees and other amenity resources. Field trips required. Cooperative course taught by UI (RRT 488), open to WSU students.</td>
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<tr>
<td>476</td>
<td>Field Environmental Education 3 Concept and techniques of environmental education with emphasis on application at camps, parks, and similar tourism inform settings. Field trips required. Cooperative course taught by UI (RRT 487), open to WSU students.</td>
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<tr>
<td>477</td>
<td>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.</td>
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<tr>
<td>479</td>
<td>Natural Resource Management Internship V 2-12 An elective opportunity for select students to supplement their academic training with practical field experience.</td>
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<tr>
<td>480</td>
<td>Big Game Range Management 3 Prereq NATRS 301</td>
<td>Big game habitat management on rangelands and forested ranges; big game habitat rehabilitation. Field trip required. Credit not granted for both NATRS 480 and 580.</td>
</tr>
<tr>
<td>485</td>
<td>Aquatic Ecosystem Assessment Methods for Environmental and Natural Resource Sciences 3 (1-6) Prereq NATRS 460, Zool 310, 411. Integrating structural and geographic analyses, biologic indicators, water quality, and community-level indices into assessments of ecosystem health and biotic integrity.</td>
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<tr>
<td>487</td>
<td>(M) Senior Thesis in Wildland Recreation Management V 1-4 Prereq senior in wildland recreation.</td>
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<tr>
<td>488</td>
<td>(M) Senior Thesis in Natural Resources V 3-6 May be repeated for credit; cumulative maximum 6 hours. Prereq senior in NATRS.</td>
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<tr>
<td>490</td>
<td>Wildlife Science Internship V 2-6 May be repeated for credit; cumulative maximum 12 hours. A cooperative internship with wildlife agencies.</td>
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<tr>
<td>491</td>
<td>Integrated Field Studies 2 (1-3) Prereq NATRS 204, 302, 374, junior standing. Two-week field course at the end of spring semester to emphasize interdisciplinary studies of natural resource management.</td>
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<tr>
<td>499</td>
<td>Special Problems V 1-4 May be repeated for credit. S, F grading.</td>
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<tr>
<td>503</td>
<td>Natural Resource Planning 3 (2-3) Graduate-level counterpart of NATRS 403; additional requirements. Credit not granted for both NATRS 403 and 503.</td>
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<tr>
<td>504</td>
<td>Agroforestry Systems 2 Prereq NATRS 304. Agroforestry systems used in the world including their current use in developing countries. Cooperative course taught by UI (Rge 558), open to WSU students.</td>
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<tr>
<td>510</td>
<td>Forest Finance and Valuation 3 Graduate-level counterpart of NATRS 410; additional requirements. Credit not granted for both NATRS 410 and 510.</td>
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<tr>
<td>511</td>
<td>Integrated Forest Resource Economics 2 Microeconomic theory of forest resource production and supply; valuing non-commodity and intangible forest resources; optimizing jointly produced resources; hierarchical decision analysis, case studies and policy evaluation. Cooperative course taught by UI (For 581), open to WSU students.</td>
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<tr>
<td>513</td>
<td>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.</td>
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<tr>
<td>517</td>
<td>Advanced Forest Mensuration 1 Prereq enrollment in CEFES program. Evaluation of forest growth and yield in forest ecosystem management.</td>
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<tr>
<td>518</td>
<td>Forest Growth and Yield 2 Graduate-level counterpart of NATRS 418; additional requirements. Credit not granted for both NATRS 418 and 518.</td>
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<tr>
<td>519</td>
<td>Advanced Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.</td>
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<tr>
<td>520</td>
<td>Wood, Wood Products and Marketing 2 Graduate-level counterpart of NATRS 420; additional requirements. Credit not granted for both NATRS 420 and 520.</td>
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<tr>
<td>521</td>
<td>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.</td>
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<tr>
<td>522</td>
<td>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 520), open to WSU students.</td>
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<tr>
<td>524</td>
<td>Plant Autecology 3 Prereq course in ecology, or plant physiology. Adaptations of individual species in rangeland and forest communities; emphasizing morphological and physiological mechanisms that influence plant establishment, below- and above-ground productivity, plant competition, and grazing selectivity. Field trips required. Cooperative course taught by UI (Rge 560), open to WSU students.</td>
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<tr>
<td>525</td>
<td>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 (Rge 525).</td>
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<tr>
<td>527</td>
<td>Forest Gene Resource Management 3 Graduate-level counterpart of NATRS 427; additional requirements. Credit not granted for both NATRS 427 and 527. Cooperative course taught by UI (For 528), open to WSU students.</td>
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<tr>
<td>529</td>
<td>Principles of Population Dynamics 1 Prereq general ecology. Development of the theory of population dynamics from Mathus to the present.</td>
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<tr>
<td>531</td>
<td>Using Nutrient 3 (2-3) Graduate-level counterpart of NATRS 431; additional requirements. Credit not granted for both NATRS 431 and 531. Cooperative course taught by UI, open to UI students (WLF 531).</td>
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<tr>
<td>535</td>
<td>Wildlife Ecology 4 (3-3) Graduate-level counterpart of NATRS 435; additional requirements. Credit not granted for both NATRS 435 and 535.</td>
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<tr>
<td>536</td>
<td>Advanced Wildlife Management 4 (3-3) Graduate-level counterpart of NATRS 436; additional requirements. Credit not granted for both NATRS 436 and 536.</td>
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<tr>
<td>537</td>
<td>Wildland Fire Management Laboratory 1 (0-3) Graduate-level counterpart of NATRS 437; additional requirements. Credit not granted for both NATRS 437 and 537.</td>
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<tr>
<td>538</td>
<td>Natural Resource Policy and Administration 3 (2-2) Graduate-level counterpart of NATRS 438; additional requirements. Credit not granted for both NATRS 438 and 538.</td>
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<tr>
<td>540</td>
<td>Integrated Forest Management Models 3 (2-3) Graduate-level counterpart of NATRS 440; additional requirements. Credit not granted for both NATRS 440 and 540.</td>
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541 Population Ecology and Conservation 4 (3-3) Prereq. graduate standing. Graduate-level counterpart of NATRS 441; additional requirements. Credit not granted for both NATRS 441 and 541.

545 Advanced Ecosystem and Landscape Management 2 Prereq. enrollment in NRI or by interview only. Ecosystems and landscape management principles, assessments, monitoring, design, and practice, incorporating biological and socioeconomic perspectives.

546 Upland Game Ecology 2 Prereq. NATRS 435. Ecology and management of wildlife species using forest and rangeland habitats; current management problems and procedures. Cooperative course taught by UI (WLF 546), open to WSU students.

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 547), open to WSU students.

550 Conservation Biology 3 Graduate-level counterpart of NATRS 450; additional requirements. Credit not granted for both NATRS 450 and 550.


552 Range Development and Improvements 3 (2-3) Graduate-level counterpart of NATRS 452; additional requirements. Credit not granted for both NATRS 452 and 552.

553 Range Livestock Management 3 Graduate-level counterpart of NATRS 453; additional requirements. Credit not granted for both NATRS 453 and 553.

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 554), 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 555).

559 Advanced Topics in Range Management V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq. NATRS 452. Review of current literature and its application in range management.

560 Watershed Management 3 Graduate-level counterpart of NATRS 460; additional requirements. Credit not granted for both NATRS 460 and 560.

571 Wildland Recreation Management 3 (2-3) Graduate-level counterpart of NATRS 471; additional requirements. Credit not granted for both NATRS 471 and 571.

572 Dispersed Recreation Management 3 (2-3) Graduate-level counterpart of NATRS 472; additional requirements. Credit not granted for both NATRS 472 and 572.

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 574.

575 Advanced Remote Sensing 3 (1-4) Same as SoilS 574.

580 Big Game Range Management 3 Graduate-level counterpart of NATRS 480; additional requirements. Credit not granted for both NATRS 480 and 580.

588 Advanced Topics in Wildlife V 1-3 May be repeated for credit; cumulative maximum 10 hours. Biology and management of wildlife species. Cooperative course taught jointly by WSU and UI (WLF, For, FWR, Rnge, and RRTT 503).

593 Special Topics Seminar 1 May be repeated for credit. Prereq. 20 hours NATRS. Literature and problems.

594 Environmental and Natural Resources Issues and Ethics 3 Prereq. senior standing. May be repeated for credit; cumulative maximum 7 hours. Ethical systems applied to natural resources; issues of professionalism and ethics in natural resource management. Cooperative course taught by WSU, open to UI students (RRTT 594).

595 Seminar in Natural Resource Sciences 1 May be repeated for credit. Literature review; preparation and presentation of reports in natural resource sciences.

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

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

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

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

Naval Science Program

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.

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 $150 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-year seniors, if their grades and military aptitude marks are sufficient to warrant such nomination. The program requires one training cruise during the summer following the junior year. It is an afloat cruise of the same type and with the same pay as described for the Scholarship Program. Graduates of this program are commissioned as reserve officers and are ordered to active duty upon graduation.

Scholarship Program

The scholarship benefits include tuition, fees, books, and a $1,500 per month stipend.

Application for this program is normally made during the early fall of the student’s senior year of high school. Initial selections are based on college entrance examination scores (SAT or ACT) and high school academic performance.

A student on scholarship participates in three summer training cruises of four to six weeks duration. During the first cruise, students are introduced to the submarine, amphibious warfare (Marine Week), surface warfare, and aviation communities. The second and third cruises are aboard ships of the Pacific or Atlantic fleets and often include travel to Europe or the Far East.

During summer cruises, the students receive one-half the pay of an ensign, in addition to room and board.

Graduates of this program are commissioned as reserve officers in the Navy or Marine Corps.

Marine Corps Option

Both male and female Scholarship and College Program students who desire a Marine Corps commission may apply for the Marine Corps Option during their first two years in college. Students taking this option enroll in specialized classes on Marine Corps subjects during their junior year and participate in summer training at the Marine Corps Development and Education Center, Quantico, Virginia during the summer following their junior year.

Naval Science Institute

Navy-Marine Corps Scholarship and College Program applicants entering the program after completion of their sophomore year will be required to attend the Naval Science Institute (NSI) during the summer between their sophomore and junior years. At the NSI they will study the material taken by the four-year candidates during their freshman and sophomore years. On completion of the NSI, candidates return to the university and complete their junior and senior years of the naval science curriculum with their peers. Candidates in the two-year program will participate in one afloat cruise between their junior and senior years. Applications must be submitted early in the second semester of the sophomore year. The top NSI graduates are awarded scholarships for their last two years of college. The remaining graduates enter the College Program and receive those benefits.

Nursing Program

The NROTC program also offers scholarships leading to commissioning in the Navy Nurse Corps. Selected students attend one year of classes at WSU and then transfer to Intercollegiate Center for Nursing Education (ICNE) in Spokane, Washington.
Naval Science Program

completion of the BS in Nursing. Application for this program can be made during the freshman year. For more information concerning this program, please see the Intercollegiate Program in Nursing.

Field Trips

Field trips to Navy and Marine Corps facilities are arranged periodically in order to allow the Navy-Marine Corps Officer Education Program members the opportunity to learn more about the naval service.

Description of Courses

Naval Science

N S

100 Drill Lab No credit. Required of all Navy-Marine Corps Officer Education Program students. One hour lab per week. S, F grading. Cooperative course taught by UI (NS 100), open to WSU students.

101 Introduction to Naval Science 2 Roles of major elements of naval service; design and structure of ships. Cooperative course taught by UI (NS 101), open to WSU students.

102 Ships Systems I 3 Introduction to control and propulsion systems of naval ships; nuclear and conventional power. Cooperative course taught by UI (NS 102), open to WSU students.

201 Ships Systems II 3 Naval weapons; ballistics, control, propulsion, components, systems analysis. Cooperative course taught by UI (NS 201), open to WSU students.

202 Seapower and Maritime Affairs 2 U.S. Navy and merchant marine seapower, development, and policy. Cooperative course taught by UI (NS 202), open to WSU students.

299 Directed Study 1 or 2 May be repeated for credit; cumulative maximum 12 hours. By interview only. Cooperative course taught by UI (NS 299), open to WSU students.

301 Navigation 3 Theory, principles, and procedures of terrestrial and celestial navigation. Cooperative course taught by UI (NS 301), open to WSU students.

302 Naval Operations 3 Prereq N S 301. Naval operations and tactics, relative motion, rules of the nautical road. Cooperative course taught by UI (NS 302), open to WSU students.

311 Evolution of Warfare 3 Rec N S 101, 202. Evolution of war through tactics; strategy from Sun Tzu to J.F.C. Fuller. Cooperative course taught by UI (NS 311), open to WSU students.

401 Naval Organization and Management 2 Theories of management and management resources, motivational theories and leadership. Cooperative course taught by UI (NS 401), open to WSU students.

402 Naval Leadership 2 Rec N S 401. Principles and styles of leadership, personal attributes, and UCMJ. Cooperative course taught by UI (NS 402), open to WSU students.

412 Amphibious Operations 3 Rec N S 311. Amphibious doctrine from Gallipoli to Mayquez. Cooperative course taught by UI (NS 412), open to WSU students.

419 Team Building 2 By interview only. Practical application of leadership and management techniques through athletics. Cooperative course taught by UI (NS 499), open to WSU students.

420 Basic Leadership 1 By interview only. Practical application of leadership and management techniques through the branch and division officer level. Cooperative course taught by UI (NS 499), open to WSU students.

421 Intermediate Leadership 2 By interview only. Practical application of leadership and management techniques through the department head level. Cooperative course taught by UI (NS 499), open to WSU students.

422 Advanced Leadership 3 By interview only. Practical application of leadership and management techniques through the executive and commanding officer level. Cooperative course taught by UI (NS 499), open to WSU students.

499 Directed Study V 1-4 May be repeated for credit. By interview only, S, F grading. Cooperative course taught by UI (NS 499), open to WSU students.

Minor in Naval Science

N S 101, 102, 201, 202; four to six courses from the following: N S 301, 302, 311, 401, 402, 412.

Program in Neurosciences


Neuroscience, the study of the nervous system, is an interdisciplinary field that plays an important role in both human and animal medical science. The Program in Neuroscience offers courses of study that lead to the degree of Bachelor of Science in Neuroscience or a minor in neuroscience at the undergraduate level. At the graduate level, programs leading to the Master of Science in Neuroscience and the Doctor of Philosophy degrees are offered. The undergraduate program for majors is designed for students who wish to study neuroscience as part of a science education, for those who wish to use their training in laboratory settings in universities, government organizations or industry, and for those who are preparing for graduate work in neuroscience or professional studies in human or veterinary medicine.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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.

Neuroscience (122 Hours)

Freshman Year

First Semester Hours
Bio S 103 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3

Second Semester Hours
Bio S 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 Hours
Chem 240 4
ComSt 102 [C] (GER) 3
Neuro 301 3
Phys 101 [P] (GER) 4
Psych 105 [S] (GER) 3

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
BC/BP 364 4
GenCB 301 4
Phys 102 [P] (GER) 4

Junior Year

First Semester Hours
Intercultural [I,G,K] (GER) 3
Psych 311 4
Zool 352 3
Electives 6
Complete Writing Portfolio

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Neuro 303 3
Neuro 405 [M] 4
Psych 312 4
Zool 353 4

Senior Year

First Semester Hours
Neuro 404 3
Neuro 430 [M] 4
Neuro Electives 3-6
Other Electives 3-6

Second Semester Hours
Neuro Electives 3-6
Tier III Capstone (GER) 3
Other Electives 6

1 Organic 340, 341, 342 (year-long sequence) can replace this course.

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 may include up to 3 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 member(s) teaching the course, prior to registration. Required courses include: Neuro 301, 404; 303 or 430; and additional Neuro courses to a total of at least 16 credit hours from 201, 405, 406, 436, 464, 495, 499, 513, 526, 528, 529, 530, 534, 537, 538, 540, 543, 579.
TRANSFER STUDENTS
Transfer students must satisfy the program requirements for graduation. Science courses taken at other institutions will be evaluated and credits accepted where possible. Inquiries should be directed to the program coordinator.

PREPARATION FOR GRADUATE STUDY IN NEUROSCIENCE
To be eligible for admission, candidates must meet general Washington State University requirements outlined in the Graduate Study Bulletin in effect at the time of their admission, as well as the current Graduate Neuroscience Program requirements. Applicants for admission to the Graduate Program in Neuroscience must have a minimum grade point average of 3.0 (A=4.0) either on the basis of the last 60 graded semester or 90 graded quarter hours of undergraduate study or on the basic science portion (first 60 credit hours) of a professional curriculum. Applicants generally will be expected to have completed courses in analytical chemistry, organic chemistry, calculus, physics and a minimum of three courses in different areas of the biological sciences. It is advisable that applicants have a basic statistics course prior to entering the Neuroscience Program. Deficiencies in these areas must be cleared during the period of graduate study before the preliminary exam.

Applications for admission to the program must include GRE scores, transcripts for all college-level work, three letters of recommendation, and a description of career objectives. For students whose native language is not English, TOEFL scores are also required. Applications and inquiries should be directed to the Program in Neuroscience, Department of VCAPP, Washington State University, Pullman, WA 99164-6520 or email grad_neuro@vetmed.wsu.edu.

Description of Courses

Neuroscience

Neuro

138 Freshman Special Topics 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.

201 The Brain and Society 3 Introductory neuroscience for non-majors; exploration of neuroscience-related topics of societal importance from an integrated neuroanatomical, biochemical, and behavioral perspective.

301 Exploring the Brain 3 Prereq Bio S 103, Chem 105; or by interview only. Structure and function of the nervous system from single neurons to behavior.

403 (303) Cellular Neurobiology 3 Prereq BC/BP 364, Neuro 301; or by interview only. Cellular and molecular interactions occurring within the nervous system.

404 Neuroanatomy 3 (2-3) Prereq Neuro 301, or by interview only. Fundamental principles of the organization and plans of circuitry of the nervous system.

405 [M]Neuroscience of Behavior 3 Prereq Neuro 301, or by interview only. Neural control of feeding and drinking behavior, sociocognitive behavior, sleep behavior, and learning and memory.
pus. 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 Center for Nursing Education in Spokane, and in Yakima. They provide the professional preparation in nursing. To apply for admission to the center, 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 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 Center for Nursing Education (ICNE) was established in 1983 and has been accredited by the National League for Nursing (NLN) since 1986. 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. Acute Care Nurse Practitioner, Community Health 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 ICNE. Program information, determination of student interests and goals, and assignment of a faculty advisor are provided by the Graduate Program Office at the ICNE.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

BACHELOR OF SCIENCE (126 HOURS)

The Bachelor of Science in Nursing degree requires a total of 120 semester hours. All students must meet the General Education Requirements for graduation as described elsewhere in the catalog. The prenursing course requirements are indicated by an asterisk (*) in the schedule of studies listed below.

Fifty-nine semester hours are required in 300-400-level nursing major courses. Additional 300-400-level nursing or non-nursing electives may be required.

A grade of C or better is required in all prerequisite courses and 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.

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>Chem 101 [F]</td>
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<td>(GER)</td>
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<tr>
<td>Engl 101 [W]</td>
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<td>(GER)</td>
</tr>
<tr>
<td>GenEd 110 [A]</td>
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<td>(GER)</td>
</tr>
<tr>
<td>Psych 105 [S]</td>
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<td>(GER)</td>
</tr>
<tr>
<td>Soc 101 or 102 [S]</td>
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<td>(GER)</td>
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Second Semester

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<tr>
<td>Bio S 102 or 103 [B]</td>
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<td>(GER)</td>
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<tr>
<td>Chem 102 [P]</td>
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<td>(GER)</td>
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<tr>
<td>Communication Proficiency [C,W]</td>
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<td>GenEd 111 [A]</td>
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Sophomore Year

First Semester

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<tr>
<td>Arts &amp; Humanities [H,G]</td>
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<td>(GER)</td>
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<tr>
<td>Intercultural [I,G,K]</td>
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<td>(GER)</td>
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<td>Stat 212</td>
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<td>Zool 315</td>
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Second Semester

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<tr>
<td>Micro 101 [B]</td>
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<td>Nurs 200</td>
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<td>Zool 251</td>
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Junior Year

First Semester

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<tr>
<td>Nurs 312</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Nurs 320</td>
<td>3</td>
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<tr>
<td>Nurs 321</td>
<td>4</td>
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<tr>
<td>Nurs 330</td>
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<td>Complete Writing Portfolio</td>
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Second Semester

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<td>Nurs 342</td>
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<td>Nurs 345</td>
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<td>Nurs 346</td>
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<td>Elective</td>
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Senior Year

First Semester

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<td>Nurs 402</td>
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<td>Nurs 420</td>
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<td>Nurs 421</td>
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<td>Tier III Capstone (GER)</td>
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Second Semester

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<th>Course</th>
<th>Hours</th>
<th>Description</th>
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<tbody>
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<td>Nurs 403</td>
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<td></td>
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<tr>
<td>Nurs 440</td>
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<td></td>
</tr>
<tr>
<td>Nurs 441</td>
<td>4</td>
<td></td>
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<tr>
<td>Nurs 450</td>
<td>3</td>
<td></td>
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<tr>
<td>Nurs 451</td>
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BACHELOR OF SCIENCE

Option for Registered Nurses: Required courses:


MASTER OF NURSING

The program may be completed in two academic years. Provision is made for part-time matriculation over a longer period of time, subject to policies and requirements of Washington State University and the ICNE. Candidates for the MN degree are required to demonstrate competency in relevant computer applications. A thesis or specified non-thesis option is required.

Core Courses in the Areas of Concentration

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>Nurs 504</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Nurs 507</td>
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<tr>
<td>Nurs 700</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Nurs 702</td>
<td>3</td>
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</tbody>
</table>

Courses Required, Psychiatric/Mental Health Nurse Practitioner

Nurs 541    | 4     |             |
Nurs 542    | 2     |             |
Nurs 543    | 4     |             |
Nurs 544    | 2     |             |
Nurs 546    | 4 or 5 |             |
Nurs 547    | 2     |             |
Nurs 548    | 4     |             |
Nurs 562    | 4     |             |
Nurs 581    | 4     |             |
Nurs 582    | 3     |             |
PharP 525*  | 3     | Electives |

Courses Required, Acute Care Nurse Practitioner

Nurs 537    | 2     |             |
Nurs 539    | 4     |             |
Nurs 562    | 4     |             |
Nurs 563    | 3     |             |
Nurs 576    | 3     |             |
Nurs 581    | 4     |             |
Nurs 582    | 3     |             |
Nurs 595    | 5     |             |

Courses Required, Community Health Nursing

Nurs 551    | 3     |             |
Nurs 552    | 2-4   |             |
Nurs 554    | 3     |             |
Nurs 556    | 3 or 4 |             |
Nurs 564    | 2 or 3 |             |
Nurs 566    | 3 or 4 |             |
Electives   | Variable |

Courses Required, Family Nurse Practitioner

Nurs 537    | 2     |             |
Nurs 562    | 4     |             |
Nurs 563    | 3     |             |
Nurs 564    | 3     |             |
Nurs 565    | 3     |             |
Nurs 567    | 4     |             |
Nurs 568    | 4     |             |
Nurs 569    | 4     |             |
Nurs 581    | 4     |             |
Nurs 582    | 3     |             |
Nurs 595    | 5     |             |
Nurs 702    | 3     |             |

*Recommended elective.
Description of Courses

The following courses are offered at the Intercollegiate Center for Nursing Education Spokane and Yakima. Courses in the bachelor of science program for registered nurses are also offered at WSU Tri-Cities, WSU Vancouver, and Wenatchee.

Nursing

200 Profession of Nursing 2 Theoretical/historical aspects of professional nursing; development of nursing roles, scopes of practice, problem solving, and ethical decision making.

307 Assertiveness Training for Nurses 2 Prereq junior in Nurs. Assertion techniques and conflict management skills in personal and nursing situations; integrating theoretical concepts into practical situations. S, F grading.

310 Pharmacological Basis of Nursing Practice 2 Prereq major in Nurs or written permission of instructor. Utilization of pharmacological concepts as a basis for critical thinking and decision making in nursing.

312 Pathophysiological Basis of Nursing Practice 3 Prereq major in Nurs or written permission of instructor. Pathophysiology processes, interrelatedness with physiological defense mechanisms, theories of stress adaptation, age and psychological/behavioral responses.


320 Nursing Concepts: Foundations 3 Prereq Nurs 310, 312, 330, or c//. Nursing concepts foundational to care of well/ill clients; nursing process, nurse/client roles, communication, relationship, basic needs and teaching-learning theories.

321 Nursing Practice: Foundations 4 (0-12) Prereq Nurs 310, 312, 320, 330, or c//. Clinical application of the nursing process; psychomotor skills and interpersonal relationships in the care of adult clients.

330 Nursing Concepts and Practice: Health Assessment 3 (2-3) Prereq major in Nurs or written permission of instructor. Holistic multi-dimensional assessment of the well client throughout the adult years; comparison of findings with established norms.

342 Nursing Concepts: Maternity Nursing 2 Prereq Nurs 310, 312, 320, 321, 330; 313, 334, 346, or c//. Normal reproductive processes and common health problems associated with reproduction; assessment and nursing care during the antepartum, intrapartum, and postpartum cycles.

343 Nursing Practice: Maternity Nursing 3 (0-9) Prereq Nurs 310, 312, 320, 321, 330; 313, 342, 346, or c//. Experience in the care of mothers in the antepartum, intrapartum, and postpartum periods and newborns; family care and family planning. S, F grading.

344 Nursing Concepts: Nursing of Children 2 Prereq Nurs 310, 312, 320, 321, 330, 313, 346, or c//. Normal growth and development concepts applied to maintenance of child health, care of acutely ill hospitalized children, and needs of children requiring chronic care.

345 Nursing Practice: Nursing of Children 3 (0-9) Prereq Nurs 310, 312, 320, 321, 330; 313, 344, 346, or c//. Experience in health maintenance and nursing care of children with acute and/or chronic health problems; family is included in care planning. S, F grading.

346 Nursing Concepts: Family and Child Development 2 Prereq major in Nurs or written permission of instructor. Physical, cognitive, psychosocial, and moral development of children, infancy through adolescence; theoretical framework; family development and family theory.

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.

364 Nursing Concepts and Practice: Health Assessment for RNs 3 (2-3) Prereq major in Nurs. RN or holistic assessment of clients throughout the age continuum. For RNs with a basic knowledge of assessment skills of adult clients.

365 Nursing Concepts: Assessment and Application of Physiological Concepts to Nursing Practice I 3 Prereq enrolled in WSU College of Nursing; registered nurse. Integration of pathophysiological assessment, pharmacological and physiological 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 and physiological concepts with diverse client populations; emphasizing fluid/electrolytes, oncology, GI/GU; cardiovascular; immune system, renal.

398 Special Topics V-1-3 May be repeated for credit; cumulative maximum 6 hours.

400 Nursing Research and Informatics 3 Prereq enrolled in WSU College of Nursing; registered nurse. Application of informatics skills and research processes to clinical practice; incorporates first level informatics concepts.

401 [M] Nursing Leadership: Research 2 Prereq major in Nurs or written permission of instructor. Focus on the process of scientific inquiry used in investigating nursing problems.

402 Nursing Leadership: Group Theory 2 Prereq major in Nurs or written permission of instructor. Group and leadership theories as they relate to the practice of professional nursing.

403 Nursing Leadership and Management 3 Prereq Nurs 420, 421; or written permission of instructor. Application of leadership/management theories to steps of the management process; analysis of selected issues critical to the professional nurse.

405 Nursing Leadership 2 Prereq enrolled in WSU College of Nursing; registered nurse. Application of group leadership and management theories to professional nursing practice.

406 Nursing Management 3 Prereq enrolled in WSU College of Nursing; registered nurse. Management, leadership, and group theories are utilized and applied to the management of nursing and health care.

420 Nursing Concepts: Adult 5 Prereq Nurs 342, 343, 344, 345, or c//. Medical-surgical concepts as a basis for critical thinking and decision making in nursing.

421 Nursing Practice: Adults 6 (0-18) Prereq Nurs 342, 343, 344, 345; 401, 402, 406; or c//. Holistic nursing management of adult health/illness problems; demonstration of critical thinking in development of clinical judgement and skill acquisition.

440 Nursing Concepts: Community Health 2 Prereq Nurs 420; 421; or c//. Synthesis of nursing and public health concepts with focus on community as partner, and population-based practice.

441 Nursing Practice: Community Health 4 (0-12) Prereq Nurs 421; 402, 403, 440, or c//. Clinical application of nursing, public health, and management concepts; emphasis on population-based collaborative practice. S, F grading.

450 Nursing Concepts: Psychiatric/Mental Health 3 Prereq Nurs 420, 421. Nursing process with clients experiencing psychiatric/mental health disruptions; history, theories, legal/ethical issues of psychiatric/mental health nursing.

451 Nursing Practice: Psychiatric/Mental Health 3 (0-9) Prereq Nurs 402, 420, 421; 450 or c//. Clinical application of nursing process with patients experiencing acute and chronic psychiatric/mental health disruptions. S, F grading.

460 [M] Nursing Concepts: Clinical Decision Making 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 402 or c//; or by interview. Nursing process with individuals and families experiencing psychiatric/mental health disruptions.

463 Selected Nursing Practice: Psychiatric/Mental Health 2 (0-6) Prereq Nurs 420 or c//; Nurs 402 or by interview. Clinical application of psychiatric/mental health nursing process with individuals and families experiencing acute chronic disruptions.

464 Nursing Practice: Community/Public Health Population - Focused Practice 4 (0-12) Prereq Nurs 440 or c//; NLN Mobility Exam (Adult), RN. Application of community/public health nursing and management concepts with emphasis on population-based collaborative practice.

465 [M] 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.

466 Nursing Leadership/Management: Concepts and Principles 2 Prereq Nurs 360, 420 or by interview. Leadership/management applied to nursing; theoretical basis for the baccalaureate nurse’s role in nursing management.

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.
542 Psychiatric/Mental Health Advanced Practice Role Development 2 Prereq BSN degree. Advanced practice psychiatric/mental health nursing role development emphasizing systems theory and definition of scope and standards of independent and collaborative roles.

543 Advanced Psychiatric Nursing Concepts: Group Psychotherapy 4 (3-3) Prereq Nurs 541, 542, or by interview only. Introduction to theory and practice of group psychotherapy; Milieu and other selected theories are studied and applied to nursing practice.

544 Differential Diagnosis of Medical and Psychiatric Mimics 2 Prereq Nurs 581, 582, or c//. Nursing theoretical differential assessment and management principles of physical/psychiatric symptomatology in determining diagnoses and implementing appropriate treatment.

545 Practicum in Psychiatric/Mental Health Nursing 4 (1-9) or 5 (1-12) Prereq Nurs 541, 543. Individualized clinical experience/semicolon designed to provide advanced competency, accountability, leadership in psychiatric/mental health nursing.

547 Practice Management in the Psychiatric Nurse Practitioner 2 Prereq last semester of NP program. Evaluation of the role of the psychiatric nurse practitioner across a variety of health care contexts, examining current practice issues.

548 Psychiatric Nurse Practitioner Internship V 1-9 Prereq Nurs 546, Phar5252, by interview only. Application and integration of theory, research findings, and interventions in the case of clients with psychiatric disorders.

549 Prepracticum in Substance Abuse 2 Prereq Nurs 504, 537, 541, 562, 581, 582. Introduction to assessment, evaluation, prevention, and treatment for substance abuse.

551 Advanced Community Health Nursing Concepts 3 Prereq graduate standing in Nurs. Evaluation of concepts inherent in advanced community health practice at the community/system level.

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.

556 Advanced Community Health Nursing Practice V 3 (2-3) or 4 (2-6) Prereq Nurs 551, 552, 554, 556; 565 or c//. Combination of group seminar, individualized field experience with focus on application, analysis of concepts and implementation of project.

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 counseling, 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 3 (2-3) or 4 (2-6) Prereq graduate standing in Nurs. Application of core public health functions in community analysis, program development and program evaluation.

571 Community Care: Infants, Children and Adolescents 4 (1-9) Prereq Nurs 562, 563, 581, 582. Assessment, differential diagnosis, therapeutic intervention with adults; developmental changes; opportunities to provide diagnostic, maintenance, and follow-up care.

572 Community Care: Adults and Elders 4 (2-9) Prereq Nurs 562, 563, 581, 582. Assessment, differential diagnosis, therapeutic intervention with individuals in childbearing, childrearing, and multigenerational families.

573 Community Care: 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.

574 Community Care: Inpatient Management of Acute/Critical Problems 6 (3-9) Prereq Nurs 562, 563, 581, c// in Nurs 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 graduate standing in Nurs. Exploration of link-age 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.

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 Advanced Gerontological Nursing 3 or 4 Prereq graduate standing in Nurs. Comprehensive analysis and synthesis of evidence regarding nursing care of elderly persons; nursing interventions and health of elderly persons.
592 School Nursing 15 (3-6) or 6 (4-6) Prereq graduate standing in Nurs. Use of nursing process to assess and evaluate total health-development status of students in school environment.

594 School Nursing 11 2 (3-2) or 4 (3-3) Prereq Nurs 504, 592. Knowledge and application: advanced health assessment, care of the school-aged child, consultation, school health program development and evaluation.

595 Internship V 1-5 May be repeated for credit; cumulative maximum 6 hours. Prereq Nurs 562, 563, 567. 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 1-3 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.

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 Nutrition


The interdepartmental graduate Program in Nutrition offers a program of study leading to a Doctor of Philosophy (Nutrition). Participating faculty are from the areas of food science and human nutrition, animal sciences, and human development.

The PhD program has two options: biological science and social science. In addition to taking advanced courses in nutrition, all students must select some supporting course work in physiology, biochemistry, and statistics. Students in the social science option select 12 credits of graduate social science, such as education, psychology, sociology, while biological science option students select additional course work in chemistry and biology. Programs of study and research are individually planned by the student with an appropriate graduate advisory committee. The emphasis is on scientific research in nutrition. Studies of the metabolism of nutrients, additives and various other biological chemicals are currently being explored in human beings and other animal systems. Behavioral nutrition research examines sociocultural, economic and political influences on food choice, dietary quality and nutritional status using social science research methods such as surveys, focus groups and in-depth interviews. The combined research facilities of participating departments are available. Students are generally located in the various cooperating departments where they conduct their research.

Expected preparation for doctoral study in nutrition are biochemistry, biological science, physiology, mathematics, and statistics. Applications must include complete transcripts, three letters of recommendation attesting to the applicant’s qualifications for graduate study, and a statement of area of interest and program option.

Description of Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 Doctoral Research, Dissertation and/or Examination</td>
<td>Variable credit. S, F grading.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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) and physiology. Deficiencies may be rectified during the first year of graduate study. Each student in the program is required to complete the core curriculum.

Hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>590 Advanced Topics in Nursing</td>
<td>V 1-3 May be repeated for credit; cumulative maximum 6 hours.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>591 Seminar in Nutrition</td>
<td>1 May be repeated for credit; cumulative maximum 5 hours. Seminar on current research issues in nutrition.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>505 Experimental Nutrition 3</td>
<td>(1-6) Same as A S 505.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>507 Advanced Nutrition Metabolism 2</td>
<td>Same as A S 507.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>513 Mineral and Vitamin Metabolism 4</td>
<td>Same as A S 513.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>520 Research Methods in Behavioral Nutrition 3</td>
<td>Same as FSHN 520.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>521 Research Techniques in Nutrition 3</td>
<td>(1-6) Same as FSHN 521.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>526 Advanced Community Nutrition 3</td>
<td>Same as FSHN 526.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>531 Nutrition and Aging 2</td>
<td>Same as FSHN 531.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>533 Pathophysiology of Human Nutrition 3</td>
<td>Same as FSHN 533.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>598 Advanced Topics in Nutrition 1</td>
<td>1 or 2 May be repeated for credit. Recent research in nutrition.</td>
<td>S, F grading.</td>
</tr>
<tr>
<td>600 Special Projects or Independent Study</td>
<td>Variable credit. S, F grading.</td>
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</tr>
<tr>
<td>800 Doctoral Research, Dissertation and/or Examination</td>
<td>Variable credit. S, F grading.</td>
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</tbody>
</table>
Description of Courses

Pharmacology and Toxicology

P/T

501 Perspectives in Pharmacology and Toxicology 1 Same as V Ph 501.

505 Principles and Methods of Toxicology 3 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 1 3 Prereq BP/BC 563 or c/l, college-level physiology course or c/l. Fundamental mechanisms of drug action and the factors that modify drug responses; overview of all areas of pharmacology. Cooperative course taught by WSU, open to UI students (FST 506).


511 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).

512 Topics in Pharmacology V 1-4 May be repeated for credit; cumulative maximum 12 hours. By interview only. Topics of current interest in pharmacology and closely related disciplines. Cooperative course taught by WSU, open to UI students (VS 512C).

525 Instrumental Methods in Pharmacology and Toxicology 3 (2-3) Prereq Chem 342. Procedures and instruments used in analytical and separation methods. Cooperative course taught by WSU, open to UI students (FST 525).

532 Metabolism of Drugs and Toxins 2 Prereq BC/BP 563/564; Rec P/T 506. Pathways, enzymology and mechanisms of metabolism of drugs, environmental contaminants and other xenobiotics; pharmacological and toxicological impact of metabolism. Cooperative course taught by WSU, open to UI students (FST 532).

535 Pathophysiolog of Blood 2 Same as V Ph 535.

551 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.

561 Receptorology 2 Prereq P/T 506. The role of ligand-receptor interactions in biological responses to drugs and poisons. Cooperative course taught by WSU, open to UI students (VS 561).

564 Brain-Endocrine Interaction 3 Same as V Ph 564.

566 Molecular Mechanisms of Target Organ Toxicity 2 Prereq P/T 505 Molecular and mechanistic aspects of chemical-induced toxicity in the liver, immune system, kidney, heart and central nervous system. Cooperative course taught by WSU, open to UI students (FST 566).

567 Risk Assessment Methodologies 2 Prereq P/T 506, by interview only. Principles of toxicity testing, decision theory, good laboratory practices, protocol development and risk assessment methods. Cooperative course taught by WSU, open to UI students (FST 567).

572 Fundamentals of Oncology 3 Prereq BC/BP 564. Thorough overview of cancer biology encompassing basic cellular and molecular mechanisms of carcinogenesis and tumor progression, treatment and prevention. Cooperative course taught by WSU, open to UI students (FST 572).

597 Pharmacology and Toxicology Seminar 1 May be repeated for credit; cumulative maximum 12 hours. S, F grading. Cooperative course taught by WSU, open to UI students (FST 597).

599 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.

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 Pharmacy

Interim-Dean and Professor: G. Dennis Clifton; Associate Dean and Professor: R. Keith Campbell; Assistant Dean and Associate Professor: Tracy L. Skar.

DEPARTMENT OF PHARMACEUTICAL SCIENCES

Professor and Chair, R. M. Quock; Professors, G. G. Meadows, R. T. Okita; Associate Professors, S. S. Daud, M. W. Fariss, M. Hu; Assistant Professors, M. E. Black, S. L. Chambers, C. A. Elstad, Y. Fu, P. Lawrence, J. R. Okita, T. D. Schmittgen, M. A. Tirmenstein; Instructor, H. Chinchinian.

DEPARTMENT OF PHARMACY PRACTICE


The College of Pharmacy offers a course of study leading to a Doctor of Pharmacy (Pharm.D.) degree. The Pharm.D. schedule of studies involves a six year commitment, consisting of two pre-pharmacy years, and four professional years. The fourth professional year of the Pharm.D. curriculum consists of experiential training, and is conducted away from the Pullman campus of Washington State University. The majority of students will complete their fourth professional year in either Spokane or Yakima. Students will gain experience in a variety of health care environments, including community, institutional, and long-term care settings. Seventy-two students are enrolled annually in the first professional year of the Pharm.D. program. For additional information regarding the Doctor of Pharmacy curriculum, please see the College of Pharmacy home page at www.phar.wsu.edu, or contact the College of Pharmacy Office of Student Affairs at (509) 335-1402.

Pre-Pharmacy Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>1. Arts and Humanities</td>
<td>3-6</td>
</tr>
<tr>
<td>2. Communication Proficiency (3 hours must be in written communications)</td>
<td>6</td>
</tr>
<tr>
<td>3. Intercultural Studies</td>
<td>3</td>
</tr>
<tr>
<td>4. Social Sciences</td>
<td>3-6</td>
</tr>
<tr>
<td>5. Tier III Capstone</td>
<td>3</td>
</tr>
<tr>
<td>6. World Civilizations</td>
<td>6</td>
</tr>
<tr>
<td>7. Writing Portfolio</td>
<td>8</td>
</tr>
<tr>
<td>8. Bio S 103, 104</td>
<td>8</td>
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<td>9. Chem 105, 106</td>
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<td>10. Chem 340, 341, 342</td>
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<td>11. Math 140</td>
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<td>12. Micro 301</td>
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<tr>
<td>13. Stat 412</td>
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<td>14. BC/BP 364</td>
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<td>Total Credit Hours</td>
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</table>

*Courses listed in numbers 1 through 6 above must be selected from the General Education Requirements for Graduation section of this catalog. 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.

Degree Program Requirements

PROFESSIONAL CURRICULUM

The four professional years of the Doctor of Pharmacy (Pharm.D.) program are outlined below. A total of 197 semester hours are required for graduation.

First Year

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>PharS 450</td>
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<tr>
<td>PharP 451</td>
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<td>PharS 332</td>
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<tr>
<td>PharP 437</td>
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<tr>
<td>PharP 531P</td>
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<tr>
<td>PharP 540P</td>
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<tr>
<td>Zool 315</td>
<td>4</td>
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<tr>
<td>Zool 352</td>
<td>3</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Second Semester

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
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<td></td>
</tr>
<tr>
<td>PharP 456</td>
<td>1</td>
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<tr>
<td>PharP 572P</td>
<td>1</td>
</tr>
<tr>
<td>PharS 532P</td>
<td>3</td>
</tr>
<tr>
<td>PharP 541P</td>
<td>3</td>
</tr>
<tr>
<td>PharP 556P</td>
<td>3</td>
</tr>
<tr>
<td>Zool 353</td>
<td>4</td>
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<tr>
<td>Electives (Non-Professional)</td>
<td></td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>PharP 457</td>
<td>1</td>
</tr>
<tr>
<td>PharP 551P</td>
<td>2</td>
</tr>
<tr>
<td>PharP 573P</td>
<td>1</td>
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<tr>
<td>PharP 581P</td>
<td>3</td>
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<tr>
<td>PharS 533P</td>
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<tr>
<td>PharS 542P</td>
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Second Semester  
<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PharP 538P</td>
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</tr>
<tr>
<td>PharP 552P</td>
<td>4</td>
</tr>
<tr>
<td>PharP 574P</td>
<td>2</td>
</tr>
<tr>
<td>PharS 543P</td>
<td>5</td>
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<tr>
<td>PharS 544P</td>
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Electives (Non-Professional) 3

Third Year  

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<table>
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<th>Course</th>
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<tbody>
<tr>
<td>PharP 531P</td>
<td>3</td>
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<tr>
<td>PharP 541P</td>
<td>2</td>
</tr>
<tr>
<td>PharP 553P</td>
<td>5</td>
</tr>
<tr>
<td>PharP 557P</td>
<td>2</td>
</tr>
<tr>
<td>PharP 558P</td>
<td>1</td>
</tr>
<tr>
<td>PharP 575P</td>
<td>2</td>
</tr>
<tr>
<td>PharS 534P</td>
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Second Semester  
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PharP 532P</td>
<td>3</td>
</tr>
<tr>
<td>PharP 542P</td>
<td>3</td>
</tr>
<tr>
<td>PharP 554P</td>
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</tr>
<tr>
<td>PharP 576P</td>
<td>2</td>
</tr>
<tr>
<td>PharP 582P</td>
<td>2</td>
</tr>
<tr>
<td>PharS 545P</td>
<td>1</td>
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</table>

Electives (Non-Professional) 3

Fourth Year  

The fourth professional year begins in May immediately following the end of the spring semester of the third professional year. Students must complete 5 credits of each advanced practice experience listed below for a total of 42 weeks during the fourth professional year of the program.

First Semester  
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PharP 561P</td>
<td>5</td>
</tr>
<tr>
<td>PharP 562P</td>
<td>5</td>
</tr>
<tr>
<td>PharP 563P</td>
<td>5</td>
</tr>
<tr>
<td>PharP 564P</td>
<td>5</td>
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<tr>
<td>PharP 565P</td>
<td>5</td>
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<tr>
<td>PharP 566P</td>
<td>5</td>
</tr>
<tr>
<td>PharP 567P</td>
<td>5</td>
</tr>
</tbody>
</table>

Description of Courses  

Pharmaceutical Science  
PharS  

437 Pharmaceuticals Laboratory 1 (0-3) Prereq PharS 531P or ccl/. Formulation and extemporaneous preparation of dosage forms.

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

531P [M] Pharmaceuticals I 3 Prereq PharS 332, 532P, 533P. Pharmaceutics of medication absorption, distribution, and elimination; medication regimen design.

532P Pharmaceuticals II 3 Prereq PharS 531P. The study of the interaction between dosage forms and various biological systems.

533P Pharmaceutical Biotechnology 2 Prereq PharS 543P. Pharmocological and pharmaceutical properties of medications derived from biotechnology.


541P Pharmacological Basis of Therapeutics II 3 Prereq PharS 540P. Molecular pharmacology and drug action; drug development; genetic factors and biochemical processes involved in drug disposition, drug interactions, and micronutrients.

542P Pharmacological Basis of Therapeutics III 6 Prereq PharS 541P. Structure activity relationship, mechanism of action, and pharmacodynamics of antimicrobial, chemotherapeutics, peripheral nervous system, and cardiovascular medications.

543P Pharmacological Basis of Therapeutics IV 5 Prereq PharS 542P. Structure activity relationship, mechanism of action, and pharmacodynamics of anti-inflammatory, antiasthmatic, gastrointestinal, central nervous system, bone mineralization, antidiabetic, and hormonal medications.

544P Toxicology 2 Prereq PharS 542P, 556P. Mammalian toxicology emphasizing basic concepts, target organ toxicity, carcinogenesis, clinical toxicology, and the toxicology of natural products and dietary supplements.

545P Quality Improvement I 1 Prereq PharP 531P. A survey of quality improvement programs in the pharmaceutical industry and pharmacy practice.


Pharmacy Practice  
PharP  
217 Drugs in Our Society 2 For nonmajors. The use and abuse of illicit substances.

250 [S] The American Health Care System 3 Development of the American health care delivery system; emergence of the health professions, insurance, hospitals, consumer advocacy, and formulation of health policy.

450 Peer Health Advocacy 3 By interview only. Principles and techniques of health education and advocacy.

451 Pharmacy Practice 1 Basic clinical skills, interpretation of patient data, problem-solving skills, professional communications, professionalism and pharmacy ethics.

456 Peer Health Lab I 1 (0-3) Prereq PharP 450. A series of modules that provide the foundation of pathophysiology and the pharmacology of various diseases.

457 Peer Health Lab II 1 (0-3) Prereq PharP 450. A series of modules that provide the foundation of pathophysiology and the pharmacology of various diseases.

483 [T] Human Body Systems 3 Prereq FSHN 130 or Micro 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.


516P Advanced Pharmacotheutics VI 1 Pharmacotherapy of hematology and oncology diseases. S, F grading.


519P Advanced Pharmacotheutics IX 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 3 Prereq PharS 533P, PharP 552P. Pharmacoeconomics and biostatistics.


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.


542P Wellness and Health Promotion 3 Prereq PharP 541P, 553P, 558P. Health needs and problems of distinct populations and prevention, early detection, and treatment of health problems.

551P Therapeutics I 2 Prereq Micro 301, PharS 542P or ccl/. Pharmacotherapy of antibacterial, antifungal, anticancer, oncology pain/nausea/vomiting management, and cardiovascular medications.

552P Therapeutics II 4 Prereq PharP 551P, PharS 533P, 543P or ccl/. Pharmacotherapy of antiasthmatic, diuretic, hormone replacement, contraception, Parkinson’s disease, Alzheimer’s disease, acute/chronic nonmalignant pain management, affective disorders, anxiolytic, and herbal medications; medication interactions and adverse reactions.

553P Advanced Therapeutics I 3 Prereq PharP 552P, PharS 543P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases.

554P Advanced Therapeutics II 4 Prereq PharP 552P, PharS 543P. Series of modules that provide the foundation of pathophysiology and treatment of various diseases.
Health Policy and Administration

Director and Professor, W. C. Schmidt; Professor, R. Rosenman; Associate Professors, M. M. Ahern, M. S. Hendryx, B. Hicks; Assistant Professor, C. A. Molinari.

The Department of Pharmacy Practice in the College of Pharmacy offers the Master of Health Policy and Administration degree at WSU Spokane. It is designed to prepare students for leadership positions in a rapidly changing health care system. The interdisciplinary curriculum is designed primarily for health professionals and others who want to increase their health policy and administrative competencies either for advancement in their present organization or in new roles. The program is supported by faculty from the Department of Pharmacy Practice, the Intercollegiate Center for Nursing Education, the Department of Food Science and Human Nutrition, the Department of Economics, the Health Research and Education Center, and the Area Health Education Center, as well as other departments from which supporting courses are drawn.

Graduates achieve basic knowledge skills and values in: health care management, health policy and politics, health economics and finance, health law and ethics, human resource management, strategic management and marketing, health care information systems, managed care, and research/evaluation methods. The 50 credit requirement allows students to specialize in selected areas such as nursing, pharmacy, nutrition, management, and other subjects, through supplementary courses in those fields. A three-credit scientific project and three-credit internship are required and will be focused on student professional interests.

Many of the courses will be available on the WSU Pullman, WSU Tri-Cities, WSU Vancouver, and the Colville Learning Center but the degree is not offered only by the WSU Spokane campus.

Graduates entering the program must meet Graduate School requirements, and must have prerequisites in statistics, financial accounting, economics, and computer applications such as word processing, and spreadsheet analysis.

Description of Courses

Health Policy and Administration

HPA

455 The Economics of Health Care 3 Same as Econ 455.
500 Introduction to the Health Care System 3 Orientation to history and organization of the health care system.
502 Health Care Ethics 3 Ethical issues affecting health care institutions, professionals, and consumers.
503 Research and Evaluation Methods 3 Prereq statistics. Basic research and evaluation methods for health care professionals.
505 Comparative International Health Care 3 Analysis of key attributes of health care in selected countries and comparisons with the US health care system.
506 Rural Health Care in America 3 The unique characteristics, professional opportunities, problems and reform alternatives in rural health care.
507 Health Care Finance 3 Prereq Acctg course. Aspects of health care financial management fundamentals and managerial accounting for strategic financial management.
508 Managed Care/Integrated Delivery Systems 3 Prereq HPA 500, 507. Business, regulatory and liability issues in field of managed care.
509 Health Care Information Systems 3 Prereq HPA 500. Key attributes of health care information systems and their evolution in health care environment.
510 Health Care Cost Accounting 3 Prereq basic financial accounting; graduate standing. Basic cost-accounting concepts, principles, and applications in the health care setting.
511 Law and Ethics of Health Management 3 Prereq HPA 500. Private health law and ethics, including professional liability, relationship of physician and patient, malpractice reform, health institutions, and health access.
512 Aging and Long-term Care Administration 3 Prereq HPA 500. Introduction to issues in population aging and requirements for administration of aging and long-term care programs.
513 Innovative Leadership and Management 3, 4 (3-3), or 5 (3-6). Same as Nurs 513.
514 Women's Health: Social, Psychological, and Physiological Issues 2 Contemporary issues in women's health focusing on physiological, social, and psychological aspects.
515 Health Care Management 3 Introduction to the knowledge, skills, and values associated with the practice of health management.
516 Government Regulation of Health Services 3 Prereq graduate standing. Public law regulation; health care quality, personhood and individual autonomy, life/death decisions, anti-trust, health care financing and cost control.
517 Marketing for Health Care Organizations 3 Prereq graduate standing. Basic marketing concepts, principles, and issues related to marketing public and private health care.
518 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.

570 Quality Management 3 Same as E M 570.

596 Seminar in Health Policy V 1-3 May be repeated for credit; cumulative maximum 9 hours. May major problems and research issues in health policy through dialogue among students and experts.

597 Internship V 1-5 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, D. H. Bishop (Emeritus), J. E. Broyles (Emeritus), H. S. Silverstein; Associate Professors, D. M. Holbrook, M. W. Myers; Assistant Professors, M. K. Bloodworth, J. K. Campbell, D. L. Shier.

The Department of Philosophy offers courses which provide the student with an introduction to fundamental intellectual problems and both classical and contemporary attempts at their solutions. Students are encouraged to develop their own critical faculties.

The department offers a course of study leading to the degree of Bachelor of Arts in Philosophy and to a supporting endorsement in education.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements. At least 40 of the total hours required for the bachelor’s degree in this program must be in 300-400-level courses.

The first two years requirements are common to both philosophy degree programs:

FIRST AND SECOND YEAR REQUIREMENTS

Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Degree Program Course⁷</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Degree Program Course¹</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
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<table>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Degree Program Course¹</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>4</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>Science Elective</td>
<td>1</td>
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</table>

¹For Philosophy/Pre-Law, take Phil 260, and two Phil Electives; for Traditional Philosophy, take Phil 101, 290, and 305.

PHILOSOPHY/PRE-LAW DEGREE PROGRAM (120 HOURS) ⬤FYDA

Junior 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 Science [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Phil 360, 365, or 370</td>
<td>3</td>
</tr>
<tr>
<td>Pol S 300</td>
<td>3</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>Engl 301 [W] (GER)</td>
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</tr>
<tr>
<td>Phil 445, 460, or 470</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
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<tr>
<td>Elective</td>
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Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Phil Electives</td>
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<tr>
<td>Electives</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phil Electives</td>
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</tr>
<tr>
<td>Electives</td>
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</tbody>
</table>

TRADITIONAL PHILOSOPHY DEGREE PROGRAM (120 HOURS) ⬤FYDA

Junior 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>Intercultural [I,G,K] (GER)</td>
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</tr>
<tr>
<td>Phil 310 or 420</td>
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</tr>
<tr>
<td>Phil 335 or 340</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phil 325</td>
<td>3</td>
</tr>
<tr>
<td>Phil 445 or 460</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>6</td>
</tr>
</tbody>
</table>

Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phil Electives</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

Description of Courses

Philosophy

Phil 101 [H] Introduction to Philosophy 3 Nature and place of philosophy in human thought; problems and achievements.

Phil 102 [W] Writing and Reasoning 3 Application of critical thinking skills to essay writing.

Phil 198 [H] Philosophy Honors 3 Open only to students in the Honors College.

Phil 201 [H] Elementary Logic 3 Analysis and evaluation of deductive and non-deductive arguments.

Phil 207 [H] Philosophy of Religion 3 Western religious thought, nature and knowledge of God, relations to science, morality, and society.

Phil 220 [H] Aesthetics 3 Analysis of aesthetic experience; applications to art and nature; criteria of art criticism.

Phil 260 [H] Introduction to Ethics 3 Ethics through analysis of contemporary moral and social issues.

Phil 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 300).

Phil 305 [H] History of Modern Philosophy 3 Renaissance, 17th and 18th century philosophers. Cooperative course taught jointly by WSU and UI (Phil 310).

Phil 310 [H] Nineteenth-century Philosophy 3 Focus on the Continental tradition in philosophy.

Phil 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.

Phil 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.

Phil 325 [M] 20th Century Philosophy 3 Prereq 3 hours Phil. Selected major philosophers and movements; pragmatism and analytic philosophy.

Phil 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 431).

Phil 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 311).
350 [H] Philosophy of Science 3 Purpose and logical structure of science; human implications. Cooperative course taught jointly by WSU and UI (Phil 412).
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 Seminar in Symbolic Logic 3 Prereq Phil 201. Cooperative course taught by WSU, open to UI students (Phil 402).
407 Seminar in Religious Studies 3 May be repeated for credit; cumulative maximum 6 hours. Senior seminar for majors in religious studies.
410 Philosophy of Language 3 Prereq completion of one Tier I and two Tier II courses. Theories of mind, self, mental acts, psychophysical states and artificial intelligence. Cooperative course taught by UI (Phil 443).
418 Philosophy of Biology 3 Prereq 3 hours Phil. 3 hours Bio S. 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 418), open to WSU students.
420 Contemporary Continental Philosophy 3 Prereq 3 hours Phil. Twentieth-century European movements in philosophy: phenomenology, existentialism, structuralism, deconstructionism, and others. Cooperative course taught by WSU, open to UI students (Phil 420).
430 [H] Philosophy of Art 3 Prereq completion of one Tier I and three Tier II courses. Philosophical exploration of any or all of the arts, emphasis on value considerations and comparisons of differing media.
435 [T] East/West Philosophy of Architecture 3 Prereq completion of 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 441).
450 [M] Philosophy of Mind 3 Prereq 3 hours Phil. Theories of mind, self, mental acts, psychophysical states and artificial intelligence. Cooperative course taught jointly by WSU and UI (Phil 442).
460 [M] Seminar in Ethical Theory 3 Prereq 3 hours in Phil. Problems of ethical theory as treated by historical and contemporary philosophers. Cooperative course taught jointly by WSU and UI (Phil 441).
465 Reversence For Life 1 or 2 Same as V Ph 465.

Physical Science Courses

Description of Courses

Physical Science

298 Physical Science Honors 4 (3-3) Concepts from cosmology, astronomy, physics, chemistry, and biochemistry; how matter evolved from the Big Bang to intelligent life forms.
430 Methods of Teaching Physical Science 3 (2-3) Prereq T & L 303; 12 hours science. Methods, philosophy, and structure of science; application in teaching middle/secondary school physical science courses.

Department of Physics


Physics is the study of nature at its most fundamental level. As such it is the science upon whose principles all other sciences and technologies are based. Because it is so basic, a major in physics is ideal preparation, not only for further study in physics, but also for advanced study in such diverse fields as 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 are designed to introduce the student to each of the major physical theories. Additional undergraduate courses use these theories to investigate such topics as optics, atomic physics, nuclear physics, solid state physics, astrophysics, and geophysics. The student tests the theories in laboratories and learns some of the standard 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 in part by federal grants and contracts, are being 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 (high-power femtosecond lasers, 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 correlations, positron annihilation studies); 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). These research groups offer graduate students the opportunity to pursue the 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 (Physics).

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.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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 expository calculus and physics in high school or equivalent before graduation. The minors are never automatic. Because it is so basic, a major in physics is ideal preparation, not only for further study in physics, but also for advanced study in such diverse fields as biophysics, medicine, astrophysics, geophysics, chemical physics, engineering, meteorology, and computer science. These same areas also offer careers for the physics major.

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The department offers courses of study leading to the degrees of Bachelor of Science in Physics, Master of Science in Physics, and Doctor of Philosophy (Physics).

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.
student are required to submit an undergraduate thesis to a committee of two physics faculty members in the senior year. Phys 490 will give credit for this effort. The student must earn a C (2.0) or better grade in each of the required physics courses.

FIRST AND SECOND YEAR REQUIREMENTS

The first year requirements are common to all physics degree programs:

Freshman Year

First Semester

Hours

Engl 101 [W] (GER) 3
Degree program course, if necessary 3 or 4
GenEd 110 [A] or 111 [A] (GER) 3
Math 171 [N] (GER) 4
Phys 201 or 205 4 or 5

Second Semester

Hours

Chem 105 [P] (GER) or 115 4
Degree program course, if necessary 3 or 4
GenEd 110 [A] or 111 [A] (GER) 3
Math 172 4
Phys 202 or 206 4 or 5

Sophomore Year

First Semester

Hours

Arts & Humanities [H,G] (GER) 3
Chem 106 [P] (GER) or 116 4
Degree program course, if necessary 3 or 4
Engl 402 [W] (GER) 3
Math 220 2
Math 273 2
Phys 303 3

Second Semester

Hours

Biological Sciences [B] (GER) 4
Cpt S 150 4
Degree program course, if necessary 3 or 4
Math 315 3
Phys 304 3
Phys 330 3

1 Environmental: ES/RP 101; Physics Education: Psych 105 [S] (GER); Computer Physics: Cpt S 150, 250.
2 Astrophysics: Phys 345; Biophysics, Environmental Option: Bio S 103, 104; Computer Physics, Optics and Electronics, Technical Option: E E 214; Physics Education: ComSt 102, T & L 300.

THIRD AND FOURTH YEAR REQUIREMENTS

Consult the Physics Department to determine when classes should be taken:

Standard Four-Year Degree Agreement Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Capstone [H,G,S,K] (GER); Math Electives (6 hours) 3; Phys 320, 341, 342, 410, 415 [M], 450, 463, 465, 490 [M], 499; any 400-level Math or Physics course.

Astrophysics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and Astronomy.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Capstone [H,G,S,K] (GER); Math Electives (6 hours); Phys 320, 341, 342, 410, 412, 415 [M], 435, 443, 450, 461, 465, 490 [M].

Biophysics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and possibly Biochemistry.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Capstone [H,G,S,K] (GER); BC/BP 364, 463, 472, 482, 499 (1 hour); Math Elective (3 hours); Organic Chemistry; Phys 320, 341, 410, 415 [M], 450, 461, 465, 490 [M].

Computer Physics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and possibly in Computer Science.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Capstone [H,G,S,K] (GER); Cpt S 330 (4 hours), 360, 400-level electives (6 hours), 499; E E 314; Math 216, Math Electives (6 hours); Phys 320, 341, 410, 415 [M], 450, 463, 490 [M].

Continuum Physics and Acoustics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Capstone [H,G,S,K] (GER); MSE 301, 312, 314, 321, 499; Phys 320, 341, 410, 415 [M], 450, 463, 465, 490 [M].

Environmental Physics Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and Environmental Science.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Capstone [H,G,S,K] (GER); Biol S 372; Chem 340, ES/RP 335, 404, 444, 445, 499; Math Electives (6 hours); Phys 320, 341, 410, 415 [M], 450, 463, 465, 490 [M].

Materials Science Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics and possibly in 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 Capstone [H,G,S,K] (GER); Bio S 372; Chem 340, ES/RP 335, 404, 444, 445, 499; Math Electives (6 hours); Phys 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 Capstone [H,G,S,K] (GER); Math 398, 401, 402, 420, 421, Math or Phys 499; Math Electives (12 hours); Phys 320, 341, 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 Capstone [H,G,S,K] (GER); E E 261, 262, 314, 431, 496, 499; 351; Math Electives (6 hours); Phys 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 support 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 Capstone [H,G,S,K] (GER); EdPsy 402; Math 303, 360; Phys 320, 341, 410, 415 [M], 450, 490 [M], 499; T & L 301, 303, 317/318, 328, 404, 415 (16 hours), 450/451, 499 (1 hour).

Technical Program

This program yields a Bachelor of Science in Physics Degree with a minor in Mathematics.

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) (6 hours); Intercultural [I,G,K] (GER); Social Sciences [S,K] (GER); Tier III Capstone [H,G,S,K] (GER); E E 261, 262, 311; Math Electives (6 hours); Phys 320, 341, 410, 415 [M], 450, 463, 465, 490 [M], 499 (3 hours).

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 inappropriate department or Physics required. Additional hours may be taken for credit.

Minor in Physics

A physics minor requires Phys 201, 202 and Phys 303, 304 plus any two courses (6 credits) from the following list: Phys 320, 330, 341, 342, 410, 412, 415, 443, 450, 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

101 [P] General Physics 4 (3-3) Algebra- and trigonometry-based physics; topics in mechanics, wave phenomena, temperature, and heat; oriented toward non-physical science majors.


103 Problem Solving for Physics 101 1 Prereq c// enrollment in Phys 101. Small class environment for students who desire focused attention on problem solving skills as applied to 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.

Modern Physics I 3 Prereq Math 220 or c//; Phys 202. Quantum and relativity theories with applications to atomic, solid state, and nuclear and elementary particle physics.


Mechanics 3 Prereq Math 315 or c//; Phys 102 or 202. Particle motion in one-, two-, and three-dimensions; motions of systems of particles; rigid body motion; Lagrange’s equations.

Thermal Physics 3 Prereq Math 273. Phys 202. Thermal behavior of systems; energy and entropy; equations of state; changes of phase; elements of continuum and statistical approaches.

Electricity and Magnetism I 3 Prereq Math 315 or c//; Phys 202. Electrostatic fields, magnetic fields, dielectric and magnetic media.

Electricity and Magnetism II 3 Continuation of Phys 341. Maxwell’s equations; electromagnetic waves, special relativity.

[45] Principles of Astronomy 3 Same as Astr 345.

Mathematical Physics 3 Prereq Math 304. Mathematical techniques needed in 300-400 level physics courses, including vector analysis, matrices, Sturm-Liouville problems, special functions, partial differential equations, complex variables. Cooperative course taught by UI (Phys 371), open to WSU students.

Physics and Society 3 Interactions of physics with society; energy; air and water pollution; recycling; communications and computers; physics and war; physics and art.

Environmental Physics 3 Prereq Math 301; 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.

Electronics 3 (1-6) Prereq Phys 102 or 202. Laboratory construction and investigation of electronic circuits employed in research instruments.

Modern Optics Laboratory 3 (2-3) Prereq Phys 443 or c//. Fundamentals of experimental modern optics and applications in science and engineering.


Astrophysics and Modern Physics 3 May be repeated for credit; cumulative maximum 6 hours. Same as Astr 435.

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.

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).

Introduction to Atomic and Molecular Physics 3 Prereq Phys 304. Introduction to atomic and molecular physics; spectroscopy.

Introduction to Solid State Physics 3 Prereq Phys 304. Introduction to physics of solids; crystal structures, lattice vibrations, and electron theory. Cooperative course taught jointly by WSU and UI (Phys 463).


Undergraduate Thesis I Preliminary thesis draft of a laboratory or library research experience, oral presentation, and final draft.

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

Optoelectronics Lab 1 V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 3 hours. Prereq graduate standing. Experiments with optical systems: Imaging, interference, coherence, information storage/processing, gas and solid state lasers, optical fibers, and communications systems.

Classical Mechanics I 3 Prereq Phys 320, 371 or c//. Laws of motion as developed by Newton, d’Alembert, Lagrange, and Hamilton; dynamics of particles and rigid bodies. Cooperative course taught jointly by WSU and UI (Phys 521).


Thermodynamics 3 (3-3) Prereq Math 330. Entropy, equilibrium, and stability; work, reversible processes, phase transitions and critical phenomena; irreversible processes and applications; introduction to statistical mechanics. Cooperative course taught jointly by WSU and UI (Phys 533).

Modern Astrophysics 3 May be repeated for credit; cumulative maximum 9 hours. Same as Astr 538.

Electromagnetic Theory 3 Prereq Phys 342, 371 or c//. Special relativity and the classical electromagnetic field; emission, propagation, and absorption of electromagnetic waves. Cooperative course taught jointly by WSU and UI (Phys 541).

Electrodynamics 3 Prereq Phys 541. Interaction of matter and electromagnetic radiation; classical and quantum electrodynamics. Cooperative course taught jointly by WSU and UI (Phys 542).

Nonlinear Optics 3 Prereq Phys 534, 542, 551. Nonlinear wave propagation theory applied to several nonlinear-optical phenomena; experimental techniques that probe a material’s nonlinearity.

Quantum Electronics 3 Prereq Phys 541, 551 or c//. The physics of lasers and of coherent optical radiation generation and propagation.

Quantum Theory I 3 Prereq Math 440, 441; Phys 450. Introduction to quantum theory; physical and mathematical foundations; application to atomic systems. Cooperative course taught jointly by WSU and UI (Phys 551).

Quantum Theory II 3 Prereq Phys 550, 571. Symmetry and invariance; angular momentum theory; approximation methods. Cooperative course taught jointly by WSU and UI (Phys 552).

Quantum Theory III 3 Prereq Phys 551. Scattering theory; relativistic wave mechanics; quantum field theory. Cooperative course taught jointly by WSU and UI (Phys 553).
561 Atomic and Molecular Physics 3

563 Physics of the Solid State 3
Prereq Phys 534, 551. Lattice vibrations and defects; ionic and electronic conductivities; band theory; magnetic properties; luminescence. Cooperative course taught jointly by WSU and UI (Phys 563).

565 Nuclear Physics 3
Prereq Phys 465, 551. Nuclei and nuclear interactions from theoretical and experimental viewpoint; properties of nuclei, two-body problems, complex nuclei, nuclear spectroscopy, reactions, models. Cooperative course taught jointly by WSU and UI (Phys 565).

571 Methods of Theoretical Physics 3

573 Physical Applications of Group Theory 3
Prereq Phys 551. Introduction to group theory with application to atoms, molecules, solids, and elementary particles; no previous knowledge of group theory assumed. Cooperative course taught by UI (Phys 573), open to WSU students.

575 Advanced Solid State Physics 3
Prereq Phys 534, 542, 552 or equal, 563, 571. Quantum theory of solids; Green's functions, correlation functions and other field-theoretic methods; magnetism, superconductivity and transport properties.

581 Advanced Topics 3
May be repeated for credit; cumulative maximum 12 hours. Topics of current interest in advanced physics. Cooperative course taught jointly by WSU and UI (Phys 581). 

590 Seminar 1
May be repeated for credit. S, F grading.

591 Seminar in Computational Physics 1
May be repeated for credit; cumulative maximum 4 hours. Computational physics; numerical methods and physical application to supercomputers, mainframes, minis- and microcomputers. S, F grading.

592 Wave Propagation Seminar 2
Prereq Math 440, 441. May be repeated for credit; cumulative maximum 4 hours. Waves in the continuum; elastic, plastic, and hydrodynamic shock waves. S, F grading.

593 Seminar in Physics of Condensed Matter 1
May be repeated for credit; cumulative maximum 2 hours. Experimental and theoretical methods of study of matter in the condensed state and at interfaces. S, F grading.

594 Seminar in Solid-State Physics 1
May be repeated for credit; cumulative maximum 4 hours. Topics in the physics of solids; the experimental and theoretical study of the electronic and atomic structure of materials. S, F grading.

596 Seminar in Optical Physics 1
May be repeated for credit; cumulative maximum 3 hours. Current topics in experimental and theoretical aspects of optical physics. S, F grading.

598 Teaching Undergraduate Physics Laboratories 1
May be repeated for credit; cumulative maximum 4 hours. Principles and practices of teaching, planning and management of undergraduate physics laboratories; choice and care of equipment. S, F grading.

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

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

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

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

Department of Plant Pathology


Plant pathology is the study of plant diseases, including causes, economic consequences, epidemiology, and control. Opportunities for graduates in plant pathology include positions in research and development, teaching, extension, and sales. Plant pathologists are employed throughout the world by industries, governments, educational institutions, and private foundations.

A limited undergraduate program is designed to provide a broad background in the biological, physical, and agricultural sciences. However, most opportunities in plant pathology require advanced degrees. Students who intend to terminate university training with a baccalaureate degree are encouraged to enroll in the Integrated Pest Management curriculum.

The courses offered in this department are designed both to train students expecting to make plant pathology or mycology their professional field of specialization and to provide supplementary training for students in other biological and agricultural fields, particularly botany, crop science, genetics, horticulture, forestry, and entomology. Students who expect to become professional plant pathologists are advised to include in their undergraduate studies fundamental courses in bacteriology, botany, chemistry, genetics, physics, and zoology.

A professional career in plant pathology requires graduate training, and the four-year course outlined under the schedule of studies is basic for such later specialization. Students often enter advanced study and research in collaboration with teachers and other professionals who hold advanced degrees in the fields of their interest. 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.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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 DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester
- Bio S 103 [B] (GER) 4
- Chem 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math 107 3

Second Semester
- Bio S 104 [B] (GER) 4
- Chem 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math Proficiency [N] (GER) 3
- Micro 101 [B] (GER) 4

Sophomore Year

First Semester
- Bot 120 [B] (GER) 4
- Chem 240 4
- Phys 101 [P] (GER) 4
- SoilS 201 3

Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Bio S 372 4
- Communication Proficiency [C,W] (GER) 3
- CropS 101 3
- Phys 102 [P] (GER) 4

Junior Year

First Semester
- Bot 320 4
- CropS 201 4
- Hort 201 4
- Social Sciences [S,K] (GER) 3
- Complete Writing Portfolio

Second Semester
- Ag Ec 201 3
- Arts & Humanities [H,G] (GER) 3
- Bot 332 4
- CropS 305 3
- Engl 351 3
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, and a foreign language; one semester each of systematic botany, plant physiology, 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

Pr P

309 Fundamentals of Plant Pathology 3 (2-3) Prereq Bio S 102 or Bot 120. Concepts and terminology associated with the classification, symptoms, causes, development, and control of plant diseases associated with irrigated crop production.

331 Forest Pathology 2 (0-6) Prereq Bio S 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, Pr P 309. Field assessment of crop plant problems; diagnosis of problems associated with crops growing in the Columbia Basin.

403 Advance Cropping Systems 3 Same as CropS 403. Credit not granted for both Pr P 403 and 503.

421 General Mycology 4 (2-6) Rec Bio S 103 or Bot 120. The structure, life histories, classification, and economic importance of the fungi. Credit not granted for both Pr P 421 and 521. Cooperative course taught by WSU, open to UI students (Pisic 421).

429 General Plant Pathology 3 (2-3) Rec Bio S 103 or Bot 120. Classification, symptoms, causes, epidemiology, and control of plant diseases. Credit not granted for both Pr P 429 and 529.

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

503 Advance Cropping Systems 3 Graduate-level counterpart of Pr P 403; additional requirements. Credit not granted for both Pr 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 (Pisic 511).

513 Nematodes and Nematode Diseases of Plants 2 (1-3) Prereq Pr P 429. Anatomy, iden- tity, and diseases caused by nematodes; techniques and control.

514 Phytopathology 4 (3-3) Prereq BC/BP 364; 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 (Pisic 514).

515 Seminar 1 May be repeated for credit.

521 General Mycology 4 (2-6) Graduate-level counterpart of Pr P 421; additional requirements. Credit not granted for both Pr P 421 and 521.

522 Basidiomycetes 3 (2-3) Prereq Pr P 421. Tax- onomy, physiology, and reproduction of rusts, jelly fungi, smuts, and higher basidiomycetes. Cooperative course taught by WSU, open to UI students (Bot 575).

523 Ascomycetes and Fungi Imperfecti 3 (2-3) Prereq Pr P 421. Anatomy, phylogeny, physi- ology, reproduction of ascomycetes, and fungi imperfecti. Cooperative course taught by WSU, open to UI students (Bot 576).

524 Lower Fungi 2 (1-3) Prereq Pr P 421. Taxon- omy, phylogeny, physiology, and reproduction of aquatic and terrestrial phymycetes and myxomycetes. Cooperative course taught by WSU, open to UI students (Bot 577).

525 Field Plant Pathology and Mycology 1 (0-3) or 2 (0-6) May be repeated for credit; cumulative maximum 4 hours. Rec plant pathology and/or mycology course; by interview only. Field trips, forays, and demonstrations dealing with various aspects of plant pathology and mycology.

529 General Plant Pathology 3 (2-3) Graduate- level counterpart of Pr P 429; additional require- ments. Credit not granted for both Pr P 429 and 529.

534 Fungal Genetics 4 (3-3) Prereq GenCB 301. Classical and molecular approaches to genetic analyses in fungi.

535 Molecular Genetics of Plant and Pathogen Interactions 2 Prereq BC/BP 364, GenCB 301. Genetic and molecular biological aspects of host-pathogen interactions. Cooperative course taught by WSU, open to UI students (Pisic 535).

541 Analytical Methods for Phytopathological Research 3 (2-3) Prereq Micro 201 or Pr P 429. Survey of research techniques in plant pathology, including history and principles. Cooperative course taught by UI (Pisic 541), open to WSU students.


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

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

800 Doctoral Research, Dissertation, and/or Examin- ation Variable credit. S, F grading.

Program in Plant Physiology


Graduate study leading to degrees of Master of Sci- ence in Plant Physiology and Doctor of Philosophy is offered as an interdepartmental curriculum by the graduate faculty from the Departments of Crop and Soil Science, Biochemistry and Biophysics, Botany, Genetics and Cell Biology, Horticulture and Land- scape Architecture, Plant Pathology, and the Insti- tute of Biological Chemistry. The objectives of the program are to provide the graduate student with a broad knowledge in plant physiology and with re- search experience in a chosen area within this dis- cipline. Specialization includes cellular and subcel- lular physiology, the molecular biology and biochemistry of plant-related processes, photosyn- thesis and photorespiration, nitrogen fixation, phy- tochemistry, the physiology of vascular plants, me- tabolism, plant-pathogen interactions, and hormonal interactions and regulation of growth, crop produc- tion physiology, and physiological ecology as well as related areas in agriculture and biology.

Students entering the program must have com- pleted their baccalaureate degree with training in one year each of elementary biology or botany, and phys- ic, chemistry through one semester of organic chemistry, one semester each of plant physiology and genetics, and mathematics (through calculus). Lim- ited undergraduate deficiencies may be remedied by taking the appropriate courses upon enrollment in the graduate program on a provisional basis. Degree re- quirements for both the MS and PhD degrees include courses in advanced plant physiology, plant morphol- ogy and anatomy, and biochemistry. To meet the minimum requirements of core course credit in the Graduate School, elective courses are chosen as ap- proved 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 pos- sible, the research area of interest identified.

The program offers flexibility for students with varied backgrounds in chemistry, biochemistry, plant physiology, molecular biology, botany, genet- ics, biochemistry, 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 interac- tion with plant physiologists and plant scientists representing a wide range of research interests and provides the student with a broad choice of special- ized 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 BC/BP 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 Targeting in Plant Cells 3 Prereq BC/BP 563; graduate standing. The biochemistry and cell biology involved in protein traffic among organelles in eukaryotic cells, with emphasis on plant cells. Cooperative course taught by WSU, open to UI students.

587 Advanced Topics in Plant Biochemistry 2 Same as BC/BP 587.

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, L. LeLoup; Professors, T. Cook, M. Cottam, N. Loevich, O. Marenin, D. Nice; Associate Professors, A. Appleton, C. Claxton, A. Mazur (Graduate Director), M. Newman, G. Russell (Criminal Justice Director), L. Simon; Assistant Professors, D. Brody, G. Capovich, R. Helms, R. Jackson, L. Langer, C. Long, F. Latze, T. Preston, S. Stehr, 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.

Teaching

Students may obtain the bachelor’s degree in political science while meeting the requirements for a Washington teaching certificate. Further details can be obtained from the department.

Minor and Second Major

A minimum of 18 semester hours of political science coursework, half of which must be in 300-400-level courses. The courses may not be taken pass, fail. Students must successfully complete Pol S 101, 102, and 103. At least 12 semester hours of political science must be earned at Washington State University. Three hours of Pol S 497 or 499 may be applied to the minor. A minimum g.p.a. of 2.0 in the political science courses is required.

Preparation for Graduate Study

Students with some undergraduate course work in political science while majoring in such subjects as economics, business administration, history, criminal justice or sociology may readily pursue graduate study in political science. Undergraduates at other institutions or in other departments at this institution who contemplate graduate work in this department should acquire some training in political science. For graduate study and its graduate degree programs, the department clusters its courses in three subfields: American institutions and processes; foreign systems and world politics; and administration, justice, and applied policy studies.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements. At least 40 of the total hours required for the bachelor’s degree in these programs must be in 300-400-level courses.

Students wishing to enroll in Pol S 499 must have at least junior standing and consent of the instructor; no more than 3 hours of 499 or 3 hours of 497 may be counted towards the departmental requirements.

GENERAL POLITICAL SCIENCE DEGREE PROGRAM (123 HOURS)

36 hours in Pol S, at least 15 of which must be earned at WSU required.

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Pol S 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
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Second Semester

<table>
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<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>
<tr>
<td>Communication [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Pol S 102 [S] (GER)</td>
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Sophomore Year

First Semester

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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3 or 4</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
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<tr>
<td>Pol S 103 [S] (GER)</td>
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<td>Science Elective</td>
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<td>Tier I Science [Q] (GER)</td>
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Second Semester

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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Biological [B] Sciences (GER)</td>
<td>4</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
<td>3 or 4</td>
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<tr>
<td>Pol S Elective¹</td>
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<tr>
<td>Pol S Elective²</td>
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Junior Year

First Semester

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<td>300-400-level Arts &amp; Humanities or Social Sciences Elective</td>
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<tr>
<td>300-400-level Pol S Elective [M]</td>
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<tr>
<td>Physical [P] Sciences (GER)</td>
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<td>Pol S Elective³</td>
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Complete Writing Portfolio
### Second Semester  
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<tbody>
<tr>
<td>Hours</td>
<td>300-400-level Pol S Elective [M]</td>
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<tr>
<td>Hours</td>
<td>Cpt S (GER) Stat Elective$^2$</td>
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</tr>
<tr>
<td>Hours</td>
<td>Engl 201 [W], 301 [W], or 402 [W] (GER)</td>
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</tr>
<tr>
<td>Hours</td>
<td>Pol S Elective$^1$</td>
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#### Senior Year

**First Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>300-400-level Arts &amp; Humanities or Social Sciences Elective</th>
<th>3</th>
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<tr>
<td>Hours</td>
<td>300-400-level Elective</td>
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<tr>
<td>Hours</td>
<td>300-400-level Pol S Elective</td>
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</tr>
<tr>
<td>Hours</td>
<td>Electives</td>
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**Second Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>300-400-level Arts &amp; Humanities or Social Sciences Elective</th>
<th>3</th>
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<td>Hours</td>
<td>300-400-level Elective</td>
<td>3</td>
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<tr>
<td>Hours</td>
<td>300-400-level Pol S Elective</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Tier III Capstone (GER)</td>
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</tr>
<tr>
<td>Hours</td>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

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$^1$American Politics, see department  
$^2$Comparative or International Relations, see department  
$^3$Policy and Public Administration, see department  
$^4$Recommended

### PRE-LAW DEGREE PROGRAM (120 HOURS)  
**FYDA**

24 hours in Pol S required. 21 of the 24 required hours of course work must be earned at WSU.

#### Freshman Year

**First Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Engl 101 [W] (GER)</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours</td>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Math Proficiency N</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Pol S 101</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Science Elective$^1$</td>
<td>1</td>
</tr>
<tr>
<td>Hours</td>
<td>Tier I Science [Q] (GER)$^3$</td>
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**Second Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Arts &amp; Humanities [H,G] (GER)</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>Hours</td>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Hours</td>
<td>Econ 101 [S] or 102 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Hours</td>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Pol S 102</td>
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</table>

#### Sophomore Year

**First Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Crm J 101</th>
<th>3</th>
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<tbody>
<tr>
<td>Hours</td>
<td>Phil 201</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Hours</td>
<td>Pol S 103</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Elective</td>
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**Second Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</th>
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<tbody>
<tr>
<td>Hours</td>
<td>Engl 201 or 301 [W] (GER)</td>
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<tr>
<td>Hours</td>
<td>Pol S 300</td>
<td>3</td>
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<tr>
<td>Hours</td>
<td>Pol S [M] Course Elective</td>
<td>3</td>
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<tr>
<td>Hours</td>
<td>Public Speaking or Argumentation Elective</td>
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#### Junior Year

**First Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</th>
<th>3</th>
</tr>
</thead>
</table>

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33 hours in Pol S required. Students in this option must also add education as a second major, preferably during their sophomore year, and must meet the specific requirements for that major as established by the College of Education.

#### Freshman Year

**First Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Engl 101 [W] (GER)</th>
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<tbody>
<tr>
<td>Hours</td>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Hours</td>
<td>Math Proficiency N</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Pol S 101</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Science Elective$^1$</td>
<td>1</td>
</tr>
<tr>
<td>Hours</td>
<td>Tier I Science [Q] (GER)$^3$</td>
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**Second Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Arts &amp; Humanities [H,G] (GER)</th>
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<tbody>
<tr>
<td>Hours</td>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Hours</td>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Hours</td>
<td>Pol S 102</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Pol S 206</td>
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#### Sophomore Year

**First Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Hist 101 [H] (GER)</th>
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<tbody>
<tr>
<td>Hours</td>
<td>Physical Sciences [P] (GER)</td>
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</tr>
<tr>
<td>Hours</td>
<td>Pol S 103</td>
<td>3</td>
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<tr>
<td>Hours</td>
<td>Pol S 300</td>
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<tr>
<td>Hours</td>
<td>Social Sciences [S,K] (GER)</td>
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**Second Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Engl 201, 301, 402 [W] (GER)</th>
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<tbody>
<tr>
<td>Hours</td>
<td>Hist 102 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Hist 110 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hours</td>
<td>Pol S 420</td>
<td>3</td>
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<tr>
<td>Hours</td>
<td>Elective</td>
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#### Junior Year

**First Semester**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Hist 111 [S] (GER)</th>
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</thead>
<tbody>
<tr>
<td>Hours</td>
<td>One from: Hist 230 [K], 231 [K], 270 [K], 272 [I], 273 [G], 275 [K]</td>
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<tr>
<td>Hours</td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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</tr>
<tr>
<td>Hours</td>
<td>Pol S [M] Course</td>
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</tbody>
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1 Students may substitute one 4-credit Tier I Science for both the 3-credit Tier I Science and the 1-credit Science Elective.

### Description of Courses

**Pol S**

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 supra-national communities; major world problems since 1945.  
198 [S] Political Science Honors 3 Open only to students in the Honors College.  
206 State and Local Government 3 Institutions, processes, and problems, with special reference to the state of Washington.  
300 The American Constitution 3 Prereq Pol S 101. Constitutional principles as established by the Supreme Court and related political developments.  
301 Political Simulations 3 Prereq Pol S 101. Preparation for and participation in political simulations.  
305 [S] Gender and Politics 3 Role of gender in political behavior; voting and political participation; women as subjects and objects of political systems.  
314 National States and Global Challenges 3 Comprehensive introduction to the processes of the economic and political integration of the European Union.  
316 American Public Policy 3 Institutions, processes, and substantive issues of American public policy and policy formation.  
317 Mass Media and the Political Process 3 Relationship between the media and American political institutions and the public.  
324 [I] Black Politics 3 Political culture, roles, and strategies of Black people in the United States; impact upon public policy.  
330 Women and the Law 3 Same as W St 330.
333 [S] Development of Marxist Thought 3 Marxist theory from the original writing of Marx and Engels to contemporary developments.

340 Introduction to Public Administration 3 Prereq Pol S 101. Basic theories of administrative organization, relationships, and behavior.

375 Chicano/Latino Politics 3 Same as CAC 359.

381 Crime and Justice in the Media 3 (2-2) Same as Crm J 381.

401 Topics—Study Abroad 3

402 Civil Liberties 3 Prereq Pol S 101. Origin and development of civil liberties; responsibility of the branches of government and the people for their maintenance.

403 Topics—Study Abroad 3


405 [M] Comparative Criminal Justice Systems 3 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 The Electorate 3 Measurement and interpretation of electoral behavior; factors influencing the electorate; voter competence; representation of the electorate.

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 Pressure Groups 3 Theories of parties; Characteristics of American parties; organization and behavior of pressure groups.


427 [M] United States Foreign Relations 3 Ends and means in foreign policy; Organization, management, control, and current policy issues.

428 [T] Issues in Political Psychology 3 Prereq Pol S 101 or Psych 105; completion of one Tier I and three Tier II courses. Introduction to the ways in which psychological factors influence political phenomena.

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 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.

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 Public Budgeting 3 The government budget as an instrument of politics, planning and control; organizing for democratic accountability.

447 [M] Comparative Public Administration 3 Cooperative course taught by WSU, open to UI students (PolSc 501).

450 The Legislative Process 3 Role of legislatures in a democratic system; problems of representation; election and tenure of lawmakers; legislative organization and procedures.

455 The Presidency 3 Organization and processes of executive institutions at the national level; uses and limits of executive power.

456 Political Leadership 3 An analysis of political leadership, including different conceptions of leadership, recruitment, leader-follower relations, tactics, and evaluation of leaders.

460 [M] Politics of the Third World 3 Issues and problems of political development and international relations common among developing nations.

472 [M] Politics of Postindustrialized Nations 3 Government and politics of postindustrial societies, including West Europe and Japan.


476 Revolutionary China: 1800 to Present 3 Same as Hist 476.

495 Topics in Political Science 3 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; development; 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 May be repeated for credit; cumulative maximum 6 hours. Origin, development, and contemporary issues in political organization and structure in the United States.

511 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 Seminar in Theoretical Approaches to International Relations 3 Group dynamics, systems analysis, decision making, communications models, game theory, simulations, and rationality models. Cooperative course taught by WSU; open to UI students (PolSc 501).

531 Seminar in International Security 3 International security and arms control policies, 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 Resource Management 3 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught jointly by WSU and UI (PolSc 592).

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 542.

542 Proseminar in Administration, Justice, and Applied Policy Studies 3 May be repeated for credit; cumulative maximum 6 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.

Department of Psychology

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 Resource Management 3 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught jointly by WSU and UI (PolSc 592).

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 542.

542 Proseminar in Administration, Justice, and Applied Policy Studies 3 May be repeated for credit; cumulative maximum 6 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.
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.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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, Math 140, 171, or 210 with a C or better, and a cumulative g.p.a. of 2.5 or better. Students who are considering a psychology degree should, as early as possible in their academic careers, seek consultation with a faculty 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 DEGREE PROGRAM (120 HOURS) ▶ FYDA

Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Bio S 102 [B] or 103 [B] (GER)</td>
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</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Psych 105 [S] (GER) or 198</td>
<td>3</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>Communication [C,W] (GER)</td>
<td>3</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 140 [N], 171 [N], or 210 [N] (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>
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<th>Hours</th>
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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<td>Psych 311</td>
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<table>
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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<td>Psych 312 [M]</td>
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Junior Year

First Semester

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<thead>
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<th>Hours</th>
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<tbody>
<tr>
<td>Group I Psych Elective</td>
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<tr>
<td>Group II Psych Elective</td>
</tr>
<tr>
<td>Electives</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Second Semester

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<tbody>
<tr>
<td>Group I Psych Elective</td>
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<tr>
<td>Group II Psych Elective</td>
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<tr>
<td>300-400-level Non-Psych Electives</td>
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Senior Year

First Semester

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<td>Group I Psych Elective</td>
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<tr>
<td>Psych Elective</td>
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<tr>
<td>Tier III Capstone [H,G,S,K] (GER)</td>
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<tr>
<td>300-400-level Non-Psych Electives</td>
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<tr>
<td>Non-Psych Electives</td>
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Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Psych Electives</td>
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</tbody>
</table>

1 Fullfills GER and department math requirement. Must be completed with C or better.

2 Please note that if you take only 3 credits of science elective, you will need to take another 1-credit science elective (i.e. Bio S 201).


4 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

Minors in Psychology. The minor in Psych may be certified after the completion of 90 semester hours, at the beginning of the senior year. It requires 18 credit hours in Psych; of which at least 9 must be in 300-400-level courses.

Psych 105 or 198 and Psych 312 are required; 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; ParhP 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 Contem- porary psychology; biological, social, and physical influences on normal and abnormal human behavior.

106 Psychology Applied to Daily Living: Dealing with Friends, Alcohol, and Sex 1 Prereq Psych 105 or c/l. Application of psychological procedures to the problems of group living, alcohol use, sexual decision making and related social issues.

198 [S] Psychology Honors 3 May substitute for Psych 105 as a preq to later courses. Open only to students in the Honors College.

Psychology and Everyday Questions 3 Prereq Psych 105. Scientific analysis of everyday questions; topics from Psych 105 will be re-examined for their implications for practical solutions.

220 Psychology of Stress 3 Prereq Psych 105. Causes and characteristics of stress; stress prevention and management; psychological aspects of health and illness.

230 Human Sexuality 3 Prereq Psych 105. Sexuality in personal development; personal, cultural, biological influences on sexual identification and behavior; fertility, reproduction, sexual functioning, sexuality and personality.

265 Biopsychological Effects of Alcohol and Other Drugs 3 Prereq Bio S 102 or 103; Psych 105. Biopsychological effects of the major classes of abused and psychotherapeutic drugs, including alcohol, stimulants, sedatives and hallucinogens.

301 Seminar in Psychology V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours Psych.
306 Industrial/Organizational Psychology 3
Prereq Psych 105. Individual and group goals; organizational structure and theory; leadership, design of jobs; personnel selection and training; engineering psychology.

307 Human Factors 3
Prereq Psych 105 or engr major. Human limitations and capabilities in architectural and engineering design; system analysis.

310 Pseudoscience and Human Behavior 3
Prereq Psych 105. Evaluation of scientific claims in the behavioral sciences and everyday life.

311 Elementary Statistics in Psychology 4
Prereq Math 101, 107, 140, 171, 201, 202, 210, or 222 with a C or better. Descriptive statistics, probability, and inference; design and interpretation of research.

312 [M] Experimental Methods in Psychology 4
(3-3) Prereq Psych 105; Psych 311 or Stat course. Designing, conducting, and reporting research in selected areas of experimental psychology.

321 Introduction to Personality 3
Prereq Psych 105. Theories, concepts, methods, discoveries in psychology of personality.

324 [S] Psychology of Women 3
Prereq Psych 105. Socialization and sex roles of women; a psychological perspective.

328 [M] Self Control 3
Prereq Psych 105. Analysis of self-control problems; application of behavioral principles to student-conducted projects.

333 Abnormal Psychology 3
Prereq Psych 321; 6 hours Psych. Problems of abnormality from traditional and evolving points of view; types, theories, outcomes, preventive techniques.

350 [S] Social Psychology 3
Prereq Psych 105 or Soc 101. Attitude changes, conformity, interpersonal relations, groups and social influences explored to give a coherent view of social psychology.

361 Principles of Development 3
Prereq Psych 105. Major theories of development; contribution of biological and environmental factors; relationship of these factors to child-rearing and social issues.

363 Psychology of Aging 3
Prereq Bio S course; Psych 105. Psychological processes of aging; changes in sensory motor, cognitive motivational and personality characteristics; research methodologies for the study of aging.

365 Problems of Alcohol Addiction and Abuse 3
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 Bio S 102 or 103; Psych 105. Functional relationship between nervous system and behavior; integrated organ systems, sensory processes, and investigative procedures. Occasional lab meetings required; see instructor for times.

384 Psychology of Perception 3
Prereq Psych 105. Perception of size, depth, form, shape; illusion of biologic, historical and modern theories and research; applications and demonstrations.

390 Operant Behavior 3
Prereq Psych 105. Principles of operant and classical conditioning.

401 [M] Historical Development of Psychology 3
Prereq Psych 312. Concepts, methods, theories, trends, and systems.

403 Cultural Issues in Psychology 3
Same as CAC 403.

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 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours Psych; sophomore standing. By interview only. Supervised experience in local and county agencies; application of psychological principles to paraprofessional counseling. S, F grading.

455 [S] Human Values 3
Same as Soc 455.


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.

473 [M] Advanced Physiological Psychology 3
Prereq Psych 372. Neurophysiological, hormonal, and biochemical bases of regulatory behaviors; theoretical and applied issues.

490 Cognition and Memory 3
Prereq 6 hours Psych. Human information processing, memory, and cognition.

492 [S] 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.

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.

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 variance analysis.

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
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, 559. 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 (549) Psychology Clinic Child Therapy Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Prereq 520, 530, 533, 535, 536, 539, 543, or by interview only. Supervised practice in the clinical application of psychology with children and families 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.

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/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 V 1-3 May be repeated for credit; cumulative maximum 12 hours. Prereq Psych 545 or c/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.


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.

559 Behavioral Neuroscience 3 Prereq Psych 574. Advanced topics in neurochemistry, neurophysiology, and neuroanatomy.

584 Sensory Bases of Behavior 3 Prereq Psych 384. Sensory and physiological aspects of vision, audition, and other senses.

586 Seminar in Physiological/Sensory Psychology 3 May be repeated for credit. Advanced current topics in physiological/sensory psychology.

591 Models of Learning 3 Historical and current theory and research in learning and cognition.

592 Cognition and Memory 3 Experimental approaches to human information processing, memory, and cognition.

593 Experimental Analysis of Behavior 3 Operational conditioning in relation to the experimental evidence currently available; examination of research strategies.

594 Seminar in Learning/Cognition 3 May be repeated for credit. Advanced current topics in learning/cognition.

595 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.

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.

Alcohol Studies

AlcSt 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 Special Topics in Alcoholism 3 May be repeated for credit; cumulative maximum 6 hours. Prereq AlcSt 365. By interview only. Selected current topics in alcoholism and alcohol-related problems.

444 Basic Helping Skills 2 (0-6) Same as Psych 444.

447 The Practice of Alcoholism Counseling 2 Prereq completion of AlcSt minor. By interview only. Assessment; therapeutic interventions; record keeping/report writing; regulations governing alcoholism facilities; professional, ethical, legal issues; professional, agency, and community relations.

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

Department of Rural Sociology


The Department of Rural Sociology offers courses and a minor in the area of community studies. These courses 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 world wide, 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 R S 334, 335, 336, or Soc 330; 3 hours from Anth 418, H D 410, or R S 423, 431, 435, 441. The remaining 12 hours may come from any of the above courses or from: Ag Ec 320; Arch 202; ES/RP 335, 486; H D 205; NATRS 312, 438; Pol S 316, 416; R S 391, 491; Soc 301, 331, 332, 424. Please contact the department at (509) 355-8623 or akcook@wsu.edu for more information.

Description of Courses

Rural Sociology

R S

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.

335 [S] Cross-National Perspectives on Community 3 Prereq introductory social sciences course. Comparative analysis of U.S. and non-U.S. communities, their sustainability, and their role in past and future human development.

336 Agriculture, Environment and Community 3 Prereq completion of one social science course. Interdependencies between farming/ranching, the natural environment and human communities including perspectives on sustainable agriculture.

392 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.
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 R S 423 and 523.

Understanding State and Local Population Trends 3
Prereq 6 credits in social science courses. Methods for understanding local population trends and composition and anticipating their influence on community size and change.

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 R S 435 and 535.

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 R S 441 and 541.

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. Credit not granted for both R S 423 and 535.

Fundamentals of Participatory Research 3
Prereq graduate standing. Graduate-level counterpart of R S 423; additional requirements. Credit not granted for both R S 423 and 523.

Resolving Environmental Conflicts 4 (3-3)
Prereq graduate standing. Graduate-level counterpart of R S 435; additional requirements. Credit not granted for both R S 435 and 535.

Local Impacts of Global Commodity Systems 3
Prereq graduate standing. Graduate-level counterpart of R S 441; additional requirements. Credit not granted for both R S 441 and 541.

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.

Department of Sociology


Courses in sociology are designed to provide the student with a better understanding of what makes people and groups of people behave the way they do. Sociology studies the groups people form, the behavior and interaction of these groups, traces their origin and growth, and analyzes the influence of group activities on individual members. Some knowledge of sociology is widely regarded as a useful supplement to the course work in most fields. The course of study for majors is flexible enough to incorporate a variety of individual interests, such as deviance and criminology, the family, social welfare and social policy, and environmental sociology.

Majors may select one of eight options for specialized study: I. General Sociology, II. Social Research and Data Analysis; III. Law and Social Control; IV. Society, Environment and Technology; V. Personnel and Human Relations; VI. Business and the Economy; VII. The Family as an Institution; VIII. Social Welfare: Social Casework or Community Organization. These options are described below. The undergraduate sociology major provides excellent preparation for careers in a variety of occupations, including public relations, teaching, positions in government, social agencies, and industry; or as a foundation for careers in professions such as architecture and community planning, counseling, law, medicine, the ministry, politics, or public administration.

The department offers courses of study leading to the degrees of Bachelor of Arts in Sociology, Master of Arts in Sociology, and Doctor of Philosophy.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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 30 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 five courses are required of all majors selecting Options I-VII.

Hours
Soc 101 Introduction to Sociology 3
Soc 320 Introduction to Social Research 3
Soc 321 Quantitative Techniques in Sociology 1 4
Soc 410 Development of Social Theory 3
Soc 490 Seminar 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. Five additional Soc courses.

Option II. Social Research and Data Analysis

The courses in this track prepare students who wish to take jobs in research and data analysis or who intend to continue their education in graduate school. The track places special emphasis upon the methods used in data collection as well as the foundations for sociological theory and analysis. Students who complete this track will be able to work as research assistants and technicians or pursue graduate work in sociology or any of the related social sciences.

Five recommended from the following, including Soc 420 (required): Soc 340, 343, 350, 360, 371, 420, 421, 433.

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 missions; for example, 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, violence, poverty, race and ethnic relations, and societal responses to these problems.

Five recommended from the following, including Soc 360 (required): Soc 340, 360, 361, 362, 364, 365, 424, 442, 480.

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 working in environmental science, as well as local and state departments of ecology, community recycling programs, environmental action groups, consulting firms, and lobbying organizations.

The courses in this option, while focused on the environment and technology, are aimed at a balance between sociological theory, empirical research methods and substantive investigations.

Five recommended from the following, including two from Soc 331, 415, 430: Soc 331, 332, 364, 415, 424, 430, 433, 474.

Option V. Personnel and Human Relations

All kinds of organizations hire people who manage the utilization of human resources from initial recruiting, hiring, training and development to separation or planning for retirement. These personnel managers help to determine company policies, the design of work situations, and methods of developing more efficient and desirable work environments. They need to understand the operation of large bureaucracies and the impact organizations have on people who work within them. A personnel manager is only one
example of a human relations worker who must understand employees’ and employers’ points of view and work to meet the needs of both groups.

Sociological knowledge about people and how they interact in groups as well as how individuals and groups are affected by their social environment is necessary for anyone who works in the general area of human relations. Other important skills needed for this work are the abilities to observe, analyze, evaluate, and change behavior as well as the ability to communicate accurately in writing and speaking.

Five recommended from the following, including Soci 350 (required): Soci 270, 343, 350, 351, 365, 371, 384, 446, 455, 480.

Option VI. Business and the Economy

There are many jobs in the business world that sociology graduates can fill very successfully. They are found in banks, insurance companies, health care organizations, hospitals, commercial recreation, merchandising and sales, real estate, as well as local government.

Individuals who want to work in any of these areas will be interested in the business and economy track in sociology. They will gain essential knowledge about complex organizations and society, professions and occupations, public opinion, social inequality, population trends, and minority cultural groups. In addition to sociological knowledge, effective employees in business need good oral communication skills, an ability to write clearly, analytical and problem solving skills, the ability to relate to other people, and a broad understanding of how people interact in their social environments.

Five recommended from the following, including Soci 343 or 442 (required): Soci 331, 340, 343, 364, 373, 384, 418, 424, 430, 433, 442, 446, 474, 480.

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 background 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.

Five recommended from the following, including Soci 150 and 351 (required): Soci 150, 340, 350, 351, 356, 384, 455.

SOCIOLOGY DEGREE PROGRAM

(FYDA)

SOCIOLOGY DEGREE PROGRAM

(FYDA)

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* This is a prototype of one of many ways to complete the Sociology Degree Program in four years. The programs has built-in flexibility, and students should consult their advisors regarding other acceptable course plans.
1 Related fields courses are approved by the department and chosen in consultation with the major advisor. At least 15 of the required 30 hours of related fields course work must be upper division.
3 Currently offered fall semester only.

**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; 396, 490, 492, 493, 495 or 496; Soc 101, 320, 321, 424, 433.

**SOCIAL WELFARE DEGREE PROGRAM**

(122 HOURS)

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<td>Intercultural [I,G,K] (GER)</td>
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102 [S] Social Problems 3 The structure of social institutions and cultural factors that constitute threats to society (crime, poverty, discrimination, drugs, family violence).

Soc 101 [S] Introduction to Sociology 3 Human society and social behavior; effects of groups, organizations, cultures, and institutions.

Second Semester

Hours

Physical Sciences [P] (GER) 4
Related Field Electives 6
Soc 320 3
S W 390 (or S W 393) 3
Complete Writing Portfolio 3

Junior Year

First Semester

Related Field Electives 6
Soc 321 4
Soc 351 (Soc 330) 3
S W 395 or 396 (S W 396) 3
S W 495 or 496 3

Second Semester

Related Field Electives 6
Science Elective (GER) 1
Soc 430 (Soc 424) 3
S W 393 (Elective) 3
S W 492 1
S W 493 3
Tier III Capstone (GER) and Related Field Elective 3

Senior Year

First Semester

Related Field Electives 3
S W 393 (Elective) 3
S W 492 1
S W 493 3
Tier III Capstone (GER) and Related Field Elective 3

Second Semester

S W 490 15

Minors

The minor in sociology may be certified after completion of 60 semester hours. It requires a minimum of 18 credit hours in sociology, including Soc 101, 320, and at least 9 additional graded hours of 300-400-level courses. Any Soc or S W course may be counted toward the minor (subject to the above provisions) except S W 490 and Soc 366. A g.p.a. of 2.0 is required for the minor.

Description of Courses

Sociology

Soc 101 [S] Introduction to Sociology 3 Human society and social behavior; effects of groups, organizations, cultures, and institutions.

102 [S] Social Problems 3 The structure of social institutions and cultural factors that constitute threats to society (crime, poverty, discrimination, drugs, family violence).

150 Marital and Sexual Life Styles 3 Traditional and alternative marriage styles; social and personal factors in mate selection; sexual life styles; development of sex roles.

198 [S] Introduction to Sociology Honors 3 Open only to students in the Honors College.

270 Personal Identity and Social Interaction 3 Development of self concept in social interaction; attitudes, values, beliefs and behaviors; conformity and interpersonal influence.

300 [S] [M] Intersections of Race, Class and Gender 3 Same as W St 300.

311 Rural Sociology 3 Comparison of rural and urban societies; rural social change and implications for the future.

302 Contemporary Masculinity and Men’s Issues 3 Same as W St 302.

320 Introduction to Social Research 3 Methods of collecting data; surveys, experiments, field observations; organization and interpretation of data; reading social research findings.

321 Quantitative Techniques in Sociology I 4 Prereq Soc 320. Levels of measurement; measures of central tendency, dispersion and association; normal curve, statistical inference; logic of quantitative comparison and decision making.

331 [S] Population, Resources, and the Future 3 Effects of population on resource depletion, environmental deterioration, social and economic structure; zero population growth prospects; limits to growth debate.

332 Society and Environment 3 Prereq Soc 101. Society-environment relations, including environmental attitudes and behavior; the environmental movement and environmental policies and policy-making.


343 Sociology of Professions and Occupations 3 Social organization of work in America including historical and contemporary trends, bureaucracy, gender/racial inequality, technological affects, work/family relations.

345 Sociology of Sport 3 Sociological study of sport in America.


352 Sociology of Emotions 3 Prereq Soc 101. Examination of emotions by surveying current theory and research; investigate emotions such as shame, guilt, empathy, jealousy, envy, and anger.

356 Sociology of Aging 3 Aging as a lifelong process; behavior, personality competencies, social relations 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 Criminology 3 Crime and society; nature, types, and extent of crime; theories of criminality; control of crime.

362 Juvenile Delinquency 3 Sociological perspectives on delinquency; delinquent gangs and subcultures; delinquency causation and control; law and its enforcement: juvenile justice and corrections.

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/Addictionism 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 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] 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 I Bus 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.

397 Topics - Study Abroad 3 Special topics in sociology taught in NCSA study abroad programs.

398 Topics - Study Abroad 3 Special topics in sociology taught in NCSA study abroad programs.

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 [S] 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 (330) [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 [S] Human Values 3 Prereq Psych 105 or Soc 101; Psych 350; completion of one Tier I and three Tier II courses. The nature and measurement of values; relationship to attitudes, identities, and behavior; value development and change in self and society.


474 [T] Collective Behavior and Social Movements 3 Prereq completion of one Tier I and three Tier II courses; three 300-400-level Soc or 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 [S] Lesbian and Gay Studies 3 Same as W St 484.

490 [M] Senior Capstone 3 Prereq senior in Soc. Focused examination of advanced substantive topics in sociology, with opportunities for students to further develop and refine analytic and writing skills.

491 Advanced Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

495 Internship V 1-6 May be repeated for credit; cumulative maximum 6 hours. Prereq social science major; by interview only. Work experience related to undergraduate major and career interests. S, F grading.

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

510 Development of Social Theory 3 Graduate-level counterpart of Soc 410; additional requirements. Credit not granted for both Soc 410 and 510.

511 Theories of Social Organization 3 Major theories of social organization in historical perspective.

512 Theory Construction and Formalization 3 Testing; formalization of theoretical systems; adaptation of general models to specific problems.

517 Seminar in Contemporary Sociological Theory 3 Recent developments in sociological theory, analysis, application and appraisal of specific theoretical systems.

519 International Development and Human Resources 3 Same as Anth 519.

520 Research Methods in Sociology 3 Methodology of social research at the professional level.

521 Regression Models 3 Prereq Soc 421. Simple and multiple regression, structural equation models, nonlinear applications, applications for discrete dependent variables.

522 Advanced Sociological Methodology 3 May be repeated for credit; cumulative maximum 12 hours. Prereq Soc 521. Scaling theory, sampling theory, experimental design, measurement of association, multivariate analysis, current methods and techniques.

523 Qualitative Methods Practicum 3 Prereq graduate standing. Introduction to qualitative research methods as used in social sciences; epistemological underpinnings and empirical techniques.

524 Sociology and Public Policy 3 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.

529 Demography 3 Population studies; causes, effects, and measurement of changes in fertility, mortality, and migration; population estimation and projection.

531 Human Ecology 3 Ecosystem context of human life; change viewed ecologically; sociological use and misuse of ecological concepts; issues in theory and research.

532 Environmental Sociology 3 Societal-environmental interactions; impacts of human societies on the physical environment; environmental impacts on human behavior and social organization.

533 Social Impact Assessment 3 Sociology’s contribution to environmental impact assessments; methods, contexts, 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; societal impacts of energy shortages and alternative energy systems.

535 Technology and Society 3 Prereq graduate standing. Analysis of sociotechnical systems; effects of technology on society; the social shaping of technologies and their environmental impacts.

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 maturational 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 3 Prereq 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.

720 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 to Social Work 3 Survey of practice; social workers and social service agencies, individual, group, and community practice.
Department of Sociology

490 Social Welfare History and Policy 3 Prereq SW 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 Prereq 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 (Soc 396).

400 [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.

420 Social Work Senior Seminar 3 Prereq S W 190. Applying social work methods to the field of corrections; community-based programs for adult offenders; interventions with juvenile offenders.

493 [M] Social Work Methods: Individual and Groups 3 Prereq 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 Prereq 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 Prereq S W 190. Applying social work methods to the fields of health and mental health with an emphasis on practical skills.

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

Department of Speech and Hearing Sciences

Professor and Department Chair, G. D. Chermak; Professor, C. L. Madison; Professors Emeriti, J. R. Franks, R. E. Potter, M. E. Wingate; Associate Professors, J. M. Johnson; Assistant Professors, D. S. Barnkow, C. Coleman, C. Jones, B. L. Macauley, L. Power, N. E. Vaughan, L. Vogel; Program Coordinator, E. Ingleber; Adjunct Lecturer, M. Mitchell; Instructor, K. Mitchell.

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 and psychological 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 audiological 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 program is accredited nationally by the Council on Academic Accreditation of the American Speech-Language-Hearing Association and by the Board of Education of the State of Washington. State and national clinical and educational certifications require a master’s degree. Bachelor’s level training in speech and hearing sciences is considered preprofessional.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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]. The Speech and Hearing Sciences Department provides preparation for professional (graduate) training as a speech-language pathologist or audiologist. This course sequence is based on fall enrollment. GERs must be completed in College of Liberal Arts prior to the fifth semester.

SPEECH AND HEARING SCIENCES DEGREE PROGRAM (121 HOURS) ✓FYDA

Freshman Year

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<th>First Semester</th>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<tr>
<td>Communication [C,W] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<td>GenEd 110 [A] (GER)</td>
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<th>Second Semester</th>
<th>Hours</th>
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<td>Art &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<tr>
<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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<th>First Semester</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
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Minor

A minor in speech and hearing sciences requires a minimum of 16 hours including SHS 205, 371, 372; 8 hours must be 300-400-level courses excluding SHS 475.

Preparation for Graduate Study

Students with undergraduate majors in child development, the humanities, education, the social and behavioral sciences, as well as those with undergraduate majors in speech and hearing sciences, may be accepted for graduate study in this department.

Description of Courses

Speech and Hearing Sciences

SHS 118 Accent Reduction for International Students 2 May be repeated for credit; cumulative maximum 4 hours. Instruction in production of the sounds and pattern of general American speech. S, F grading.
201 (281) 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 (469) 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] 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.

375 Phonetics 2 Acoustic and applied phonetics.

376 Clinical Phonetics and Articulation Disorder 4 Clinical Phonetics and transcription; evaluation and treatment of articulatory disorders; delayed phonological acquisition; dysarthria; and dyspraxia.

377 Anatomy and Physiology of the Speech Mechanism 4 Anatomical and physiological basis of speech production and the pathologies and aberrations that require the services of a communication disorders specialist.

378 Speech and Hearing Sciences 3 Prereq SHS 205, 375. Basis of acoustics, acoustic phonetics, psychoacoustics, and speech perception, and instrumentation for measurement of related phenomena.

450 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Study of specialized topics in speech and hearing sciences.

460 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Study of specialized topics in speech and hearing sciences.

461 Clinical Apprenticeship in Speech-Language Pathology and Audiology 2 (1-3) Practicum preparation; observation of and assisted in therapy; state laws; clinical methods.

470 Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. By interview only. Study of specialized topics in speech and hearing sciences.

471 Speech-Language Pathology and Audiology in Schools 3 Prereq SHS 461 or c/c. Therapy methods and procedures in speech-language pathology and audiology; state/federal laws affecting public school therapy.


473 Language and Learning Disability 3 Diagnosis and remediation of language and learning disabilities; individuals manifesting disorders in understanding or using spoken/written language.

474 Stuttering 3 Problems and solutions.

475 [M] Clinical Practice 3 (0-9) May be repeated for credit; cumulative maximum 9 hours. Prereq SHS 461. Practicum in diagnosis and therapy for speech/language and hearing disorders.

477 Aural Rehabilitation 3 Prereq SHS 372, 472. Theories and methods in aural rehabilitation for persons who are hearing-impaired; amplification; educational audiology; counseling techniques.

478 [M] Language Impairment: Assessment and Therapy 3 Prereq SHS 371. Assessment and habilitation for the preschool and elementary-age child with language disorders.

479 Neurology for Speech-Language Pathology and Audiology 3 Prereq SHS 377. Neuroanatomical and neurophysiological bases of speech production and audition; neuropathologies of speech, language, and audition.

480 Special Topics in Speech and Hearing Sciences 1 May be repeated for credit; cumulative maximum 9 hours. Study of specialized topics in speech and hearing sciences.

482 Diagnosis and Appraisal of Speech Language Disorders 3 Prereq SHS 376 or c/c, 475 or c/c, 478. Principles, techniques, and materials involved in exploring the nature of speech and language disorders; planning programs of therapy.

489 [T] 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 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. Study of specialized topics in speech and hearing sciences.


545 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.

547 Advanced Audiolinguistic 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.
582 Clinical Perspectives 3 Theory and clinical experience designed to assist students in integrating course work into a clinical perspective.


585 Hearing Conservation in Industry and Society 3 Prereq SHS 472. Prevention and management of noise-induced hearing loss; interactions between noise and other ototoxic agents and physical characteristics of the individual.

586 Pediatric Audiology 3 Prereq SHS 472. Developmental anatomy and physiology of the human auditory system; auditory behavior and pathologies in children; assessment of infants and children.

587 Speech-Language Pathology in the Medical Setting 2 Report writing and charting, collaborating with the medical team, establishing prognosis and assessing efficacy of treatment, and third-party reimbursement.


590 Special Topics in Speech and Hearing Sciences 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 Audiomteric Procedures with Special Populations 3 Prereq SHS 472. Differential diagnosis and clinical decision analysis for special populations; otoacoustic emissions; 1-3 May be repeated for credit; cumulative maximum 9 hours. By interview only. Advanced study of specialized topics in speech and hearing 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.

Program in Statistics


Statistics is the science that deals with the collection, analysis, display, and interpretation of data. The Program in Statistics is an interdisciplinary, intercollegiate program that emphasizes the connection of statistics to its many areas of application, as well as the traditional connection to mathematics. The courses in statistics provide training in the application of statistical methods to the biological, physical, and social sciences, the theory of statistical methods, probability, and statistical computing. Opportunities for individuals trained in statistics abound in business, industry, government and academia.

Faculty in the program collaborate with researchers throughout the entire university community on statistical questions that arise in the researcher’s substantive discipline. In addition, faculty carry out active research 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.

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 101 or satisfactory math placement test score. Interpretation and application of statistical methods.

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/FSP, advanced macros, complex inputs. S, F grading.

401 Statistics Analysis 3 Prereq Stat 212, 360 or 412. Concepts and methods of statistical research including multiple regression, contingency tables and chi-square, experimental design, analysis of variance, multiple comparisons, and analysis of covariance. Cooperative course taught by UI (Stat 401), open to WSU students.

410 Topics in Probability and Statistics 3 Same as Math 410. Credit not granted for both Stat 410 and 510.

412 Biometry 3 Rec statistics course. Principles and methods of statistical analysis as applied to biological experimentation. Cooperative course taught by WSU, open to UI students (Stat 412).

420 Statistical Analysis of Qualitative Data 3 Prereq Math 140, 171, 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 (442) Statistical Methods for Engineers and Scientists 3 Same as Math 423.

428 Geostatistics 3 Prereq Stat 360. Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation. Cooperative course taught by UI (Stat 428), open to WSU students.

430 Statistical Methods in Engineering 3 Same as Math 430.

443 Applied Probability 3 Same as Math 443.

456 Introduction to Statistical Theory 3 Same as Math 456. Credit not granted for both Stat 456 and 556.

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

504 Special Topics 3 Prereq Stat 456. Cooperative course taught by UI (Stat 504), open to WSU students.

507 Experimental Design 3 Prereq Stat 512. Methods of constructing and analyzing designs for experimental investigations; analysis of designs with unequal subclass numbers; concepts of blocking randomization and replication; conditioning in factorial experiments; incomplete block designs; response surface methodology. Cooperative course taught by UI (Stat 507), open to WSU students.

510 Topics in Probability and Statistics 3 Graduate-level counterpart of Stat 410; additional requirements. Credit not granted for both Stat 410 and 510.

511 Statistics for Economics 4 Same as Ag Ec 510.

512 Analysis of Variance of Designed Experiments 3 Prereq Math 360 or Stat 412; Rec Stat 390, 391. Principles of experimental design and analysis and interpretation of data.

513 Advanced Econometric Application 3 Same as Ag Ec 513.

514 Nonparametric Statistics 3 Prereq Stat 512. Conceptual development of nonparametric tests including their power and efficiency. Cooperative course taught by UI (Stat 514), open to WSU students.

515 Statistical Packages 3 (2-2) Same as Math 515.

516 Time Series 3 Same as Dec S 516. Cooperative course taught by WSU, open to UI students (Stat 539).

518 Techniques in Sampling 3 Same as Dec S 518.

519 Applied Multivariate Analysis 3 Same as Dec S 519. Cooperative course taught jointly by WSU and UI (Stat 521).

520 Statistical Analysis of Qualitative Data 3 Graduate-level counterpart of Stat 420; additional requirements. Credit not granted for both Stat 420 and 520. Cooperative course taught by WSU, open to UI students (Stat 520).

523 Statistical Methods for Engineers and Scientists 3 Prereq graduate standing. Graduate-level counterpart of Stat 423; additional requirements. Credit not granted for both Stat 423 and 523.

530 Applied Linear Models 3 Prereq Stat 412 or 430. The design and analysis of experiments by linear models.

531 Econometrics 3 Same as Econ 511. Cooperative course taught by WSU, open to UI students (Stat 531).

533 Theory of Linear Models 3 Prereq Math 420, Stat 430, or 456. Theoretical basis of linear regression and analysis of variance models; a unified approach based upon the generalized inverse. Cooperative course taught jointly by WSU and UI (Stat 533).
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).

Applied Stochastic Models 3 Same as Dec S 542.

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).

Statistical Pattern Recognition 3 Same as Cpt S 547.

Statistical Theory I 3 Same as Math 568.

Statistical Theory II 3 Same as Math 569.

Advanced Econometrics 3 Same as Econ 512.

Advanced Agricultural Econometrics 3 Same as Ag Ec 512.


Introduction to Statistical Theory 3 Prereq graduate standing. Graduate-level counterpart of Stat 456; additional requirements. Credit not granted for both Stat 456 and 556.

Reliability Theory 3 Same as Math 573.

Applied Multiple Time Series Analysis 3 Same as Dec S 586.

Statistical Consulting Practicum 1 or 2 May be repeated for credit; cumulative maximum 6 hours. Prerequisite three courses in Stat including one methods course or by interview only. Theory and practice of statistical consulting, participation in consulting session. S, F grading.

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.

Preparation for Graduate Study
As preparation for work toward an advanced degree in statistics, a student should have completed one or more courses in statistical methods, a course in probability and statistical theory, and mathematics through multivariable calculus and linear algebra. Advanced calculus is also strongly recommended. More important than the above specific courses is an indication of the student's interest and ability in statistics. Virtually all U.S. graduate programs provide adequate opportunity to take prerequisite courses after admission to graduate school.

Department of Teaching and Learning

The Department of Teaching and Learning prepares teachers and other specialists for schools and colleges. Its programs are approved by the National Council for Accreditation of Teacher Education (NCATE), the Northwest Association of Schools and Colleges and the State Board of Education. Courses of study are offered for the Bachelor of Arts in Education, Master of Arts in Education, Master of Teacher Education, Doctor of Education, Doctor of Philosophy, and for teacher certification.

The mission of the College of Education, through its constructivist model of learning, is to educate effective practitioners and scholars who possess the leadership and problem-solving skills necessary to meet the needs of citizens of the 21st century. The constructivist approach, in contrast to approaches that view the purpose of the teacher as merely transmitting knowledge, requires students to be active and critical participants in the formation of their own intellectual development in a life-long process and to evaluate their performance in terms of its effects upon children, schools, and society. It is our belief that teachers must be liberally educated, well grounded in human growth and development, informed and appreciative of cultural and linguistic diversity, committed to egalitarian ideals, capable of communicating and inspiring an interest in learning in others, competent in the technical aspects of teaching and managing group learning, and reflective about their own beliefs and actions. WSU's constructivist model provides students with a challenging framework for the study of individual and group experiences, responses, and perceptions. This framework forms the basis for research that informs the application and formulation of educational theory and methodology used to advance professional practice.

Visit our web site at education.wsu.edu/TandL/.

Teacher Certification
The College of Education prepares individuals to teach elementary education, early childhood education, and various single subjects. The teacher certificate, awarded by the State Superintendent of Public Instruction upon recommendation by Washington State University, designates the grade level and subject area in which the certificate holder is qualified to teach. Teacher preparation is offered at the Pullman, Tri-Cities, and Vancouver campuses, although not all programs are available at each site.

The teacher certificate will be awarded if the following provisions are met:
1. The candidate provides evidence of good character and personal fitness to teach. Fingerprinting is required. A background investigation is conducted by the Washington State Patrol and the FBI. The State Superintendent of Public Instruction, Office of Professional Practices, determines fitness to teach.
2. The degree is awarded and the professional preparation program is satisfactorily completed following these guidelines:
   • All course work is taken for a letter grade where offered. Pass, fail grading is not accepted.
   • No more than 3 semester hours of correspondence credit is permitted to fulfill professional course work requirements.
   • The candidate has earned no grade lower than C (2.0) for professional course work, and course work in the primary and supporting endorsements. The C minimum grade requirement applies also to math and science requirements in the elementary and early childhood programs.
   • The cumulative g.p.a. and the g.p.a. computed separately for professional course work and each endorsement is not less than 2.5.
   • The student has completed all work within five years of admission to teacher preparation. Those not finishing within this time limit will be subject to all new program requirements.
3. The candidate has achieved a passing score on the state-wide admission to practice examination, if required.
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 K-8 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 ensure 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 teaching placements.

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 or review by faculty.

To prepare in K-8 elementary education the candidate shall satisfy degree requirements of the Department of Teaching and Learning. To prepare in P-3 early childhood education, the candidate shall satisfy the degree requirements of the Department of Human Development. To prepare in a single subject, the candidate shall complete the baccalaureate degree/teaching option offered through the subject matter department, or in general studies. Single-subject preparation is available in agriculture, biology, chemistry, earth science, English, English/language
arts, foreign languages (French, German, Russian, Spanish), history, family and consumer sciences, mathematics, music (general, choral, instrumental), physics, science, and social studies. All candidates endorsed for single subjects may be assigned to teach in grades K-12 except those endorsed in foreign languages or music who are authorized to teach in grades K-12. Specific course requirements for each primary endorsement are listed under 5-12 Certificate Programs and P-12 Certificate Programs at the end of this section.

To enhance employment opportunities, certificate candidates may wish to teach in a subordinate area by completing supporting endorsement requirements. Supporting endorsements are offered in bilingual education, biology, chemistry, drama, early childhood education, earth science, English as a second language, foreign languages (French, German, Japanese, Russian, Spanish), mathematics, physics, and reading.

Admission to Teacher Preparation

Applicants who meet the minimum requirements are eligible for consideration, but not assured admission. Enrollment is limited and admission competitive. Admission deadlines are October 31 and March 31 with admission effective the following term. Candidates must complete formal admission procedures and be admitted to teacher preparation prior to taking any professional education course work beyond T & L 300, 301, 315 or 317. The following minimum criteria must be met for consideration for admission:

1. Completion, within the last three years, of 80 hours of supervised work with children or youth in a diverse setting.
2. ACT or SAT score which meets current state requirements. (Inquire at Teacher Education Student Services Center.) Those holding a bachelor's degree and those with two years of successful college work in which competency in oral and written communication, math and reading has been demonstrated are exempt.
3. Completion of at least 30 semester hours of course work.
4. Minimum cumulative g.p.a. of 2.50.
5. Engl 201 or equivalent composition course with a minimum grade of C.
6. ComSt 102 or equivalent public speaking course with a minimum grade of C.
7. T & L 300.
8. Elementary and Early Childhood Majors: Math 251 and at least two GER science courses with minimum grades of C.
9. Secondary Majors: Nine hours of course work in the primary endorsement area. Certified in major department; major department may have additional criteria for teaching option candidates.
10. An interview and writing sample may be required.

Admission to, or continued enrollment in, the teacher preparation program may be denied a candidate on the basis of review by the faculty.

Field Experiences and Student Teaching

An application for student teaching must be made one full academic year prior to the actual student teaching semester. Application forms can be obtained from Teacher Education Student Services, Cleveland Hall 252. The following courses are designed as required field experiences.

T & L 300, Introductory Field Experience (1 credit) This first course in the certificate program engages the student in reflection upon the responsibilities and realities of the teaching profession. Subsequently, the student spends a full week participating and observing daily activities in a P-12 public or private school classroom.

T & L 315, Elementary Practicum, or T & L 317, Secondary Practicum (3 credits) A three-week, full-time experience in a public or private school in the student's home community in May following the completion of WSU's spring term. Training in effective observation skills with practical application in a P-12 school setting. Observation, reflection, and practice in the school and classroom environments. Provides early opportunity for understanding the constructivist model of teacher education.

T & L 415, Directed Teaching (16 credits) The program capstone is a semester of full-time participation in the teaching program of a public school. Prior to student teaching the certificate candidate will: 1) make application and pay certification fees; 2) complete all course work for the degree and teacher certificate; and 3) receive fingerprinting clearance from the Washington State Patrol, the FBI, and the Office of Professional Practices.

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 or review by faculty.

In addition to the certificate options described below, WSU Tri-Cities 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 special education, English as a second language, and reading which can be applied to the master's program.

Masters in Teaching (MIT)

A full-time, 15-month field-based program leading to K-8 certification and a master's degree. Applicants must have a bachelor's degree from an accredited institution with a minimum 3.0 g.p.a. in their last 60 semester hours of graded course work, and submit the MIT application portfolio which is available from the WSU Vancouver Office of Admissions. Applications are available in April and must be submitted by December 1 for the program beginning the following May.


Secondary Certification

Candiates 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 content areas. Content deficiencies will be determined through a transcript evaluation which is required prior to application to the program. Students may begin the program fall, spring, or summer and should complete the university and departmental applications at least two months prior to the semester in which they wish to enroll. A bachelor's degree from an accredited institution is required. Candidates for the master's degree with certification must have a minimum 3.0 g.p.a. in the last 60 semester hours of graded course work; those seeking certification only must have a 2.5 minimum cumulative g.p.a.

Course of Study for Certification Only (36-40 hours): EdPsy 502, 510; Ed Ad 507, 510, T & L 521, 525, 528, 593, 595. Diversity course required.

Course of Study for Ed.M. with Certification (50-54 hours): EdPsy 502, 505, 510; Ed Ad 507, 510, T & L 521, 525, 528, 702. 12 hours elective course work in diversity selected with advisor approval.

Certificate Renewal/Continuing Certificate

Information is available upon request.
## Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

### PRESCHOOL-THIRD GRADE CERTIFICATE DEGREE PROGRAM

Students completing this certification degree program earn a Bachelor of Arts in Human Development and a teaching certificate with a primary endorsement in preschool-third grade and a supporting endorsement in kindergarten through grade eight. For complete requirements and program description, see the Department of Human Development listing in this catalog.

Supporting Endorsement (23 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.

### K-8 CERTIFICATE DEGREE PROGRAM: ELEMENTARY EDUCATION (121 HOURS) \*FYDA

Candidates for the K-8 elementary education primary endorsement undergraduate program will satisfy degree requirements of the Department of Teaching and Learning. The degree will be bachelor of arts. The student should include the following course work within GER selections to satisfy prerequisite, degree, and admission to teacher preparation requirements. This course schedule does not include a supporting endorsement that may be recommended by school districts.

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 110 [W] (GER)</td>
<td>3</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 101, if necessary, or Elective</td>
<td>3</td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3 or 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>Mus 153, if necessary</td>
<td>3</td>
</tr>
<tr>
<td>Psych 105 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 300</td>
<td>1</td>
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#### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological [B] or Physical [P] Sciences</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Engl 201 [W], 301 [W], or 302 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H D 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 251+</td>
<td>3</td>
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<tr>
<td>T &amp; L 301</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 330</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>F A 390</td>
<td>2</td>
</tr>
<tr>
<td>Math 252 [N] (GER)</td>
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</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>T &amp; L 301</td>
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</tr>
<tr>
<td>T &amp; L 303</td>
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#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Sp Ed 420</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>T &amp; L 307, 320, and 385+</td>
<td>9</td>
</tr>
<tr>
<td>T &amp; L 315/316</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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</table>

<table>
<thead>
<tr>
<th>Senior Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
</tr>
<tr>
<td>EdPsy 401</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 310 [M]</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 403</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 445</td>
<td>2</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>1</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>T &amp; L 415</td>
<td>16</td>
</tr>
</tbody>
</table>

+ During the freshman year, students must pass the Music 388 competency exam or take Music 153 and must qualify to enroll in Math 251, and begin the University Writing Portfolio.
+ Engl 201 and Math 251 must be taken by the end of the third semester for certification.
+ Concurrent enrollment required.

### 5-12 CERTIFICATE DEGREE PROGRAM

Candidates preparing for 5-12 secondary, specific subject matter teacher certification must complete course work in the Secondary Professional Core (EdPsy 402, Psych 104, T & L 300, 301, 317, 328, 404, 415, 450) and course work listed below for one of the 5-12 primary endorsement program areas. The candidate will certify a major with the subject matter department or in General Studies. In addition, the candidate must meet minimum admission requirements listed under Admission to Teacher Preparation, make application, and be formally admitted to teacher preparation prior to enrolling in any professional education courses beyond T & L 300, 301, or 317/318. It is recommended that candidates plan to begin professional education courses in the sophomore or junior year to meet sequencing requirements. Students should include the following courses within their GER selections to fulfill prerequisite and admission to teacher preparation requirements.

#### 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>Psych 105 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 300</td>
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</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>EdPsy 401</td>
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<tr>
<td>T &amp; L 310 [M]</td>
</tr>
<tr>
<td>T &amp; L 403</td>
</tr>
<tr>
<td>T &amp; L 445</td>
</tr>
<tr>
<td>Elective</td>
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</table>

#### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3</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>Math 251, if necessary, or Elective</td>
<td>3</td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Third Semester

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Math 251, if necessary, or Elective</td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)</td>
</tr>
</tbody>
</table>

#### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EdPsy 402</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 328</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 404</td>
<td>3</td>
</tr>
<tr>
<td>T &amp; L 450/451</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Elective</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>T &amp; L 415</td>
<td>16</td>
</tr>
</tbody>
</table>

+ Students may substitute three credits of Bio S and four credits of Phys S.
+ Credit hours needed for the primary endorsement are from 30-74, depending on the major.
+ Strongly recommended.

#### Agriculture

Primary Endorsement (47 hours): A S 101, Ag Ec 210, 340 or 350; Ag Ed 342, 345, 407, 440, 442, 471; AgTM 201, 402; CropS 101 or 201; 305 or 300-400-level CropS elective; Hort 201, 234, SoilS 201, plus 21 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.

#### Biology

Primary Endorsement (35 hours): BC/BP 364; Bio S 103, 104, 372, 430; GenCB 301, 450; Zool 405, 6 elective hours of biological sciences from bacteriology, Bot, GenCB and Zool.

Supporting Endorsement (21 hours): Bio S 103, 104, 372, 430; GenCB 301; plus additional hours from the life sciences to equal or exceed 21 hours. Bot 332, Zool 251, 315 recommended.

#### Chemistry

Primary Endorsement (33 hours): Chem 105 or 115; Chem 106 or 116; Chem 220, 222, 340, 341, Hist 381 or 382, Ph S 430. Additional 9 hours from 300- and 400-level Chem courses. (Chem 331, 333 suggested.)
Supporting Endorsement (17-21 hours): Chem 105 or 115; Chem 106 or 116; plus Chem 220, 222; 240 or 340, 341; Ph S 430.

Earth Science
Primary Endorsement: Student must receive a departmental degree in geology plus Aatr 135, 390, ES/REP 174, Ph S 430.

Supporting Endorsement (22 hours): Aatr 135, 390, ES/REP 174; Geol 102, 206, 210, Ph S 430; plus one from Geol 201, 340, or 350.

English
Primary Endorsement (46 hours): Foundation Courses: Hum 101 or 103; Engl 108, 199, 209 or 210; 300; 302. English Literature: Engl 305 or 306; 383, 384, 385, or 386; 387, 388, or 389; one additional upper-division English literature course selected with advisor approval. American Literature: Engl 311, 314, 321, 322, 341, 345, or 346; 380 or 381 (382 may be taken if writers-of-color course is pre-1916). Professional Courses: One from Englj 255, 256, 354, 443, 458, Anth 256, 259, 355, or 450; Engl 323; 324. Concentration: 6 hours approved upper-division Englj; Engl 495 or approved capstone; creative writing course strongly recommended if not included in concentration.

English/Language Arts
Primary Endorsement (64 hours): In addition to the course work required for endorsement in English, six hours from each of the following shall be completed. Journalism: One from Com 295, 410, or 415; one from Jour 305, 330, or 425. Communication Studies: ComSt 102 or 302; 251 or 351; 324 or 334; 185, 235, 358, or 485; Com 245. Theatre: Theat 163; 260; 296; 361; 362, 365, or 366; 464 or 468.

Family and Consumer Sciences
Primary Endorsement (59 hours): Ag Ed 345; two from AMT 215, 216, 317; FSHN 120/121, 130, 131, 201, 202, 203, 302, 320, 350, 406, 407, 409, 410, 479, 480.

History
Primary Endorsement (42 hours): 36 hours of Hist of which 21 must be 300-400-level. Program must include 6 hours of U.S., 6 hours of European, 6 hours of other fields (Africa, Asia, Canada, Latin America). Required courses: Hist 101, 102, 110, 111; one of Hist 230, 231, 270, 272, 273, 275; Hist 422, 469; 480 (not counted as part of the 36 hours); one from CAC 101, 111, 131, 151, 171, W St 200 or an approved substitute. A minor (18-21 hours) is required for a degree in history. It is suggested that this minor be one of the supporting endorsements for teacher certification.

Mathematics
Primary Endorsement (33 hours): Cpt S 153, Math 171, 172, 220, 273, 303, 315, 320, 330; 360 or 443; 398 plus one additional 3-hour Math course numbered above 300.

Supporting Endorsement (19 hours): Math 171, 172, 220, 303; 325 or 360. In addition, the Math Department recommends Math 330.

Physics
Primary Endorsement (30 hours): Aatr 345 or Phys 380; Ph S 430; Phys 201, 202, 303, 304; 320, 330, or 341; 410, 415; 499 (4 hours includes observing Phys 101 and 102.)

Supporting Endorsement (21 hours): Ph S 430; Phys 201, 202, 303, 304, 499 (4 hours includes observing Phys 101 and 102.)

Science
Primary Endorsement (58 or 59 hours): Bio S 103 (or 102 with a grade of B or better), 104, 430; Chem 105 or 115, 106 or 116; Geol 102, 210; Math 171, 220, 303, 320, 325, or 360; Phys 101 or 102 or 202. In addition to the above requirements, the student must complete one option endorsement listed below:


Earth Science: Aatr 135, 390, ES/REP 174, Geol 206; 310, 330 or 340; 350.

Physics: Phys 303, 304, 345, 380, 410. Degree will be General Studies, Bachelor of Science, with an option in Physical Science.

Social Studies

Students who intend to obtain a teaching major in a foreign language should begin course work in that language in the freshman year. For a teaching minor in a second language or, with the permission of the advisor and the department chair, a teaching minor in another field, the student should begin work on the requirements not later than the beginning of the sophomore year. If the major and minor course programs, the requirements for the Initial Certificate, and the General Education Requirements in the College of Sciences and Arts are met, the degree will be a Bachelor of Arts in Foreign Languages and Literatures.


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
hours must be at the 400-level. Performing Groups: 7 hours, minimum of 1 hour during each of seven semesters, to include at least one semester of Mus 435 for instrumentalists and Mus 428 for vocalists. Include a minimum of 2 hours in choral and 2 hours in instrumental ensemble. Total performance experience (performance studies and performing groups) must include a minimum of 4 hours in choral/vocal music and 4 hours in instrumental music.

Choral: 67 hours. Mus 161, 251, 252, 253, 254, 351, 352, 353, 354, 360, 361; 453 or 455; 480, 481, 483, 488, 489, 490, 491, 497. Performance Studies: 14 hours of which 2 hours must be at the 400 level. Performing Groups: 7 hours, minimum of 1 hour during each of seven semesters, to include at least 1 hour of Mus 428. Minimum of 4 hours of choral ensemble experience.

Instrumental: 69 hours. Mus 161, 251, 252, 253, 254, 351, 352, 353, 354, 360, 361; 453 or 455; 480, 481, 482, 487, 490, 491, 493, 494, 497. Performance Studies: 14 hours minimum of which 2 hours must be at the 400 level. Performing Groups: 7 hours, minimum of 1 hour during each of seven semesters, to include at least 1 hour of Mus 435. Minimum of 4 hours of instrumental ensemble experience.

If the above requirements along with the graduation requirements of the College of Liberal Arts are met, the degree will be Bachelor of Music.

Supporting Endorsement (requires the passing of a piano proficiency exam)

General: 39 hours. Mus 161, 251, 252, 253, 254, 480, 481, 487, 488, 489, 490, 491, 493, 494. Performance Studies: 4 hours. Performing Groups: 4 hours. 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 at the 200-level or above.

Choral: 25 hours. Mus 161, 251, 252, 480, 481, 483, 488, 489, 490, 491. Two hours performance studies in choral/vocal music at the 200-level or above. Two hours performing groups in choral/vocal music at the 200-level or above.

Instrumental: 27 hours. Mus 161, 251, 252, 480, 481, 487, 490, 491, 493, 494. Two hours performance studies in instrumental music at the 200-level or above. Two hours performing groups in instrumental music at the 200-level or above.

Reading

Primary Endorsement (30 hours): Students in reading complete a Bachelor of Arts in Education which consists of the elementary core courses plus the following courses in the primary endorsement: T & L 306, 307, 320/321, 431, 433, 450/451, 462/463 plus 13 hours from: Anth 450, ComSt 251, Drama 464, SHS 205, 371, 473, T & L 308/309.


Special Education

Primary Endorsement (30 hours): This endorsement must be taken in conjunction with a primary endorsement in K-8, P-3, 5-12, or P-12. Students preparing to teach K-8 or P-3 take Sp Ed 301, 401, 402, 403, 404, 409, 421, 440, 478, 490 (4 credits). Students preparing to teach specific subject matter (5-12, P-12) take all of the foregoing plus T & L 306, 352; 320 or 462; Math 251, 252.

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 3 Prereq Psych 105, T & L 300. Reflective inquiry about human learning, development, diversity, and individual differences; examination of implications for teaching and education reform.


304 Introduction to Middle Level Education 2 Prereq T & L 300. Study of adolescents; middle level organization and instructional strategies including field component at Lincoln Middle School.


308/309 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.

310/311 [M] Classroom Management 2 Prereq certified education major, T & L 301; 315 or 316. Strategies for developing positive and supportive classroom learning environments.

315/316 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.


341 Literacy Practicum 1 (0-3) Practicum for students serving as literacy tutors in schools and agencies; methodological, at-risk issues and community-school partnerships. S, F grading.

320/321 Elementary Reading Methods 3 Prereq certified education major, T & L 301, c// in 307, c// in 385. Methods and materials for teaching reading in elementary school.

324 Methods of Teaching Foreign Languages 3 Same as For L 340.


330 Diversity in Schools and Society 3 Gender, linguistics, cultural and learning diversity; conceptual 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 306. Methods and materials for teaching mathematics in elementary and middle school.

355 Chicana/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 306, c// in 352. Teaching methods and materials in elementary and middle school science.

385 Elementary and Middle School Social Studies 3 Prereq certified education major; T & L 301; c// in T & L 307, c// in 320. Teaching methods and materials in elementary and middle school social studies.

390 Elementary School Art Education 2 (1-2) Prereq T & L 301 or c//. Creative methods for utilizing art materials in the elementary classroom.

401 Practicum in Bilingual/Multicultural 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.

403/404 Social Foundations of Curriculum 3 Prereq certified education major; T & L 315/316, 317/318. The school, historical, and philosophical foundations of education; school law.

410 Theoretical Foundations for the Schooling of Language Minority Students 3 Prereq T & L 333, 335, or graduate standing. Theoretical foundations related to research and instructional strategies for effective schooling of language minority students. Credit not granted for T & L 410 and 510.

411 Bilingual Methods and Materials Across Content Area 3 Prereq T & L 333, 335, or graduate standing. Approaches, methods, and materials across content areas for the bilingual classroom.

412 Language and Cultural Factors in Mathematics 3 Prereq T & L 352 or teaching experience. Research and instructional strategies related to linguistic and cultural influences on learning math. Credit not granted for both T & L 412 and 512.

414 ESL Across Content Areas 3 Prereq T & L 333, or teaching experience. Research and instructional methods related to English language acquisition across content areas. Credit not granted for both T & L 414 and 514.

415 Directed Teaching V 0 (1-15) to 16 (1-45) Prereq certified education major; program completion, WSP/FBI/SPI clearance, 2.5 g.p.a. overall, in primary endorsement and professional courses. By interview only. Semester of supervised teaching in K-12 schools; seminars reflecting on effective teaching. S, F grading.

425 Conceptual Aspects of Mathematics 3 Prereq college-level math course. Exploration of conceptual models for thinking about mathematical ideas; activities and discussions of mathematical thinking and instruction.
431 Innovations in Reading 2 Prereq admission to teacher prep program. Aspects of teaching reading; current programs and trends; activities and materials for enrichment. Credit not granted for both T & L 431 and 530.

433 Children’s Literature in the Curriculum 2 Prereq T & L 307 or teaching experience. Theory and classroom applications for selecting and using literature and storytelling in content areas; reading, writing, language development, the arts. Credit not granted for both T & L 433 and 532.

445/446 Educational Technology Used in the Schools 2 (1-3) or 3 (2-3) Prereq certified education major; T & L 301, 315/316. Consideration of all technologies in schools, applications for their use, some production techniques and instructional methodologies.

450/451 Content Literacy in Middle and Secondary Schools 2 or 3 Prereq admission to teacher prep program; T & L 300, T & L 301 or cfl. Reading and writing in content areas, grades 4-12; integrating service learning and community of learners approaches in teaching literacy skills.

452 Content Area Reading and Study Skills Practicum 3 Prereq can be repeated for credit; cumulative maximum 3 hours. Prereq T & L 320 or 450. Development and delivery of vocabulary, comprehension, and study skills.

455 Educational Uses of Microcomputers 2 or 3 Prereq admission to teacher prep program; T & L 300; T & L 301 or graduate standing. Types and functions of educational software, evaluation criteria, designing instructional programs and classroom considerations.

462/463 Corrective Reading in the Classroom 2 Prereq admission to teacher prep program; T & L 300, 301. Investigation, formulation, application of informal and formal assessment for classroom instruction; specific needs of children with reading difficulties.

472 Technology for Language Learning 3 Prereq T & L 333, 335, or graduate standing. Computer technologies addressing the needs of language minority students and their teachers (including audio, video, graphics, and text).

480 Multicultural Education in a Global Society 3 Multicultural and multilingual education from a global perspective; development of multicultural curriculum. Credit not granted for more than one of T & L 480, 580, 582.

483 School and Family Health Education 2 Prereq certified education major, T & L 301. Methods, materials, research, and resources to plan and implement comprehensive health education for all students.

487 Global Geography 3 Prereq declared major; open to non-education majors. World geography as a global perspective; education in the contemporary world: the interaction between human societies and the natural environment.

490 Instructional Practicum V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 8 hours. S, F grading.

497 Topics in In-Service Education V 1-3 May be repeated for credit; cumulative maximum 9 hours. New developments and applications on selected in-service and staff development topics.

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

501 Practicum in ESL/Bilingual Education 3 May be repeated for credit; cumulative maximum 6 hours. Prereq one course in bilingual/ESL or by interview only. Work with students from diverse linguistic and cultural backgrounds in educational settings.

504 Early Childhood Programs for Children at Risk Identification of children at risk; their needs, appropriate curriculum, and program evaluation; description of parent-teacher community relationship and outreach.

506 Multicultural Classroom Instruction and Management 4 Instructional and management strategies for maximizing students’ opportunities to learn in a multicultural setting.

507 Developing Literacy in a Multicultural Setting I 3 Theoretical foundations of language arts in a multicultural setting.

508 Teaching Literacy in a Multicultural Setting II 3 Prereq T & L 507. Applying research-based assumptions to teaching language arts in a multicultural setting.

510 Theoretical Foundations for the Teaching of Language Minority Students 3 Graduate-level counterpart of T & L 410; additional requirements. Credit not granted for both T & L 410 and 510.

511 Teaching Poetry to Children and Young People 3 Prereq T & L 303, 307, or teaching experience. Elements and forms of poetry for children and young people; selection and utilization in the school curriculum.

512 Language and Cultural Factors in Mathematics 3 Graduate-level counterpart of T & L 412; additional requirements. Credit not granted for both T & L 412 and 510.

513 Seminar in Middle School Education 3 Prereq teaching experience. Curriculum patterns and recent research regarding instruction and materials in the contemporary middle school.

514 ESL Across Content Areas 3 Graduate-level counterpart of T & L 414; additional requirements. Credit not granted for both T & L 414 and 514.

515 The Education of Language Minority Students 3 Prereq K-12 teaching experience. Issues in the education of language minority students.

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.
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.

559 Research in Teaching 3 May be repeated for credit; cumulative maximum 6 hours. Prereq teaching experience. Current developments in research on teaching; both quantitative and qualitative research methodologies emphasized.

560 Elementary School Mathematics 3 Prereq T & L 352; Math 252; teaching experience. Research on curriculum and instruction issues in elementary mathematics.

561 Secondary School Mathematics 3 Prereq T & L 352; Math 252; Math 252; teaching experience. Research on curriculum and instruction issues in secondary school mathematics.

562 Seminar in Precollege Mathematics Education 3 Prereq T & L 542 or 542. May be repeated for credit; cumulative maximum 6 hours. Research on curriculum and instruction in mathematics education in grades K-12.

563 Elementary School Mathematics Methods 3 Introduction to research, theory, and methods of teaching K-8 mathematics; emphasis on integrating theory and practice.

564 Elementary School Science Methods 3 Prereq T & L 352; Math 252; Math 252; teaching experience. Research on curriculum and instruction issues in secondary school mathematics.

565 Seminar in Precollege Mathematics Education 3 Prereq T & L 542 or 542. May be repeated for credit; cumulative maximum 6 hours. Research on curriculum and instruction in mathematics education in grades K-12.

570 The At-Risk Learner 2 Strategies for working with at-risk students.

577 Science for All: An Individual and Multicultural Perspective 3 Prereq teaching experience. A theoretical and applied perspective for understanding western scientific and mathematical thought; an activity-based, educational perspective.

580 Multicultural Education in a Global Society 3 Graduate-level counterpart of T & L 480; additional requirements. Credit not granted for more than one of T & L 480, 580, 582.

582 Multicultural and Global Perspectives in Education 2 Concepts, theories and applications of multicultural and global perspectives in teaching and learning. Credit not granted for more than one of T & L 480, 580, 582.

583 Problem Solving in Elementary and Middle Level Education 4 Prereq admission to MIT program. Integration of knowledge and skills to address complex cases in teaching and learning.

585 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.

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 more than one of T & L 497 or 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 4 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 3 Prereq certified education major. Methods for teaching students with disabilities in general education classrooms. Credit not granted for both Sp Ed 420 and 520.

421 Inclusion Strategies for Special Education Teachers 3 Prereq Sp Ed 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.

475 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 4 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.
BACHELOR OF SCIENCE DEGREE IN VETERINARY SCIENCE

The Bachelor of Science degree in Veterinary Science combines credits earned in both the preprofessional and professional programs. The degree is available only to students who have been admitted to the professional program. This degree was designed to benefit veterinary medical students in obtaining employment, applying for scholarships, and qualifying for graduate-level course enrollments. A minimum of 120 semester hours is required for the degree. The minimum basic requirements are:

General Education Requirements (see above) 60 additional hours of acceptable university credit of which 34 hours must be 500-level or above courses in the professional curriculum of the College of Veterinary Medicine

Total semester hours 120

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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

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Electives

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 new 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 university and the college upon graduation from high school. This is a six-year program leading to the Doctor of Veterinary Medicine degree after satisfactory completion of the curriculum. It consists of two years of a unique undergraduate preprofessional education and the four-year professional program. The first two 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. Application should be made to the Honors College as soon as students decide to enter WSU, because number of positions is limited.

Joint Program in Animal Science and Veterinary Medicine

See Department of Animal Sciences.

Preparation for Graduate Study

Students meeting the requirements of the Graduate School and having the Doctor of Veterinary Medicine degree or a bachelor’s degree in allied fields may take work leading to an advanced degree in the College of Veterinary Medicine. Students without the DVM degree will take courses in preclinical fields (anatomy, microbiology, pathology, physiology, parasitology, and pharmacology).

The undergraduate preparation should include two semesters of organic chemistry or one semester of organic chemistry and one semester of physiological chemistry; one year of general physics and one semester of college algebra; one semester of comparative vertebrate anatomy and one semester of physiology.

A combined degree program is available which allows simultaneous pursuit of both DVM and graduate degrees. Admission to the College of Veterinary Medicine and to the Graduate School are prerequisite for entry into the combined degree program.
511P *Veterinary Anatomy I* 5 (0-15) Prereq first year in Vet Med or graduate student. Detailed macroscopic functional morphology of the dog with comparison to other domestic animals; developmental anatomy of selected organ systems.

512P *Veterinary Anatomy II* 3 (0-9) Prereq V M 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.

522P *Pharmacology/Toxicology I* 4 Prereq third year in Vet Med. Pharmacology and toxicology of the systems of domestic animals.

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 (Zool 529).

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* 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.

551P *Veterinary Anatomy I* 5 (0-15) Prereq first year in Vet Med or graduate student. Detailed macroscopic functional morphology of the dog with comparison to other domestic animals; developmental anatomy of selected organ systems.

552P *Veterinary Anatomy II* 3 (0-9) Prereq V M 511P. Detailed macroscopic functional morphology of domestic animals.

553P *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.


558P *Applied Anatomy of Large Animals* 2 (1-3) Prereq V M 512P. Applied anatomy of large animals including surgical anatomy.

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560P *Veterinary Physiology* 5 (4-3) Prereq V M 510P. Physiology of domestic animals. Cooperative course taught by WSU, open to UI students (VS 518).

561P *Mammalian Neuroscience* 3 (2-3) Prereq V M 510P. Neuroanatomical and neurophysiological bases of veterinary neurology, emphasizing central and peripheral sensory and motor systems.

562P *Pharmacology/Toxicology I* 4 Prereq third year in Vet Med. Pharmacology and toxicology of the systems of domestic animals. Cooperative course taught by WSU, open to UI students (VS 518).

563P *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 (Zool 529).

565P *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.

566P *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).

567P *Clinical Animal Behavior* 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.

**Description of Courses**

**Veterinary Anatomy**

**V An**

**308 Functional Anatomy of Domestic Animals** 4 (3-3) Prereq Bio S 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).

**527P Clinical Animal Behavior** 1-4 May be repeated for credit. S, F grading.

**465 Reverence for Life**

**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** 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**

**465S Reverence for Life** 2 or 2 Ethical and scientific issues relating to human responsibilities to all forms of life with emphasis on animals.

**499 Special Problems** V 1-4 May be repeated for credit. 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.

592 Research Topics in Physiology 2 May be repeated for credit; cumulative maximum 6 hours. Concepts and controversies within a specific and highly focused domain of physiological research.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

Department of Veterinary Clinical Sciences


Description of Courses

Veterinary Medicine


502P Language and Culture for International Externships 1 Prereq two semesters Spanish. Language and culture for students intending on carrying out international externships in veterinary medicine, animal production, or related areas. S, F grading.

504P International Field Studies V 1 (0-3) to 6 (0-18) Prereq V M 501P, 502P, 503P, fourth year Vet Med. Preceptorship in the US or overseas, under direct supervision of veterinarian, agriculturist 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.

556P Small Animal Soft Tissue Surgery Elective 1 Prereq V M 471, 554P/555P. c// in 553P. Instruction of advanced surgical techniques, primarily involving canine and feline soft tissues.


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) Prereq admission to DVM program. Web-based clinical problem solving course designed to enhance problem solving skills using simulated patients. S, F grading.

568P Animal Restraint and Production 1 (0-3) Prereq first year in professional DVM program. The restraint and production aspects of animals commonly seen by veterinarians. S, F grading.


570P Large Animal Medicine II 6 Prereq V M 569P. Diagnosis and treatment of large animal infectious diseases. Continuation of V M 569P.


572P Surgery II 2 Prereq V M 553P Large animal surgical techniques.

573P Surgery Laboratory III 1 Prereq third year Vet Med. 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 2 (1-3) Health Management of livestock herds, targeting measures of productivity and profitability.

585P Epidemiology 2 Minimally quantitative survey in which health is framed as a population phenomenon.

586P Analytic Epidemiology 2 (1-3) Prereq statistics course. Problem-solving methods related to health events and other occurrence phenomena.


589P Clinical Pathology 3 (2-3) Prereq second year in Vet Med. Laboratory diagnostic procedures and interpretation.

590P Veterinary Clinical Nutrition V 1-3 Large and small animal clinical nutrition; nutrient composition; nutritional diseases and practical feeding methods.


592P Small Animal Transfusion Therapy 1 (0-3) Prereq V MS 460, 463. Blood collection, storage, pretransfusion testing, component therapy and transfusion reactions.

598P Introduction to Clinics 1 (0-3) Prereq third year Vet Med. Introduction to the practice of clinical veterinary medicine and surgery within the Veterinary Teaching Hospital including records, presentation and protocol. S, F grading.

599P Special Problems V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq enrollment in DVM Professional Program. S, F grading.


602P Small Animal Surgery 4 (0-12) Prereq fourth year Vet Med. Surgical cases in clinic, ward round, case discussions by students, seminars by faculty, designed surgical exercises.

603P Clinical Medicine II V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year professional DVM program. Clinical medicine training in diseases of food animals and horses; clinic rounds and diagnostic procedures. (OSU)

610P Basic Small Animal Rotation V 8 (0-24) to 12 (0-36) Prereq fourth year Vet Med. Required rotation through the medical and surgical services of the Small Animal Clinic of the Veterinary Teaching Hospital.

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.

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.
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.

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.

615P Small Animal Medicine - Speciality Practice Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience in a specialty practice area of small animal clinical medicine or surgery.

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.

617P Clinical Neurology V 1 (0-3) to 3 (0-9) Prereq 4th year DVM student. Rotation will emphasize neuroanatomical localization, differential diagnosis, diagnostic testing, and treatments.

630P Basic Large Animal Hospital Rotation V 8 (0-24) to 12 (0-36) Prereq fourth year Vet Med. Required rotation through the Medical and Surgical Services of the Large Animal Clinic, Veterinary Teaching Hospital.

631P Population Medicine/Theriogenology V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med. Required rotation for Agricultural Animal Track students through population medicine laboratory and Theriogenology Services of the Veterinary Teaching Hospital.

632P 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 and small animals.

633P Agricultural Animal 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 subjects in food animal diseases and herd health/preventive medicine.

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 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 (Caldwell).

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.

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 - Clinical Rotation 2 (0-6) Prereq fourth year professional DVM program. Hands-on experience in diagnosis, treatment, prevention and management of disorders related to canine and feline reproduction.

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.

651P Pharmacy and Therapeutics I 1 (0-3) Prereq fourth year Vet Med. One-week overview of Washington and federal drug laws, inventory control, formulary management, therapeutics for a successful practice.

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.

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.

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 and laboratory diagnosis and interpretation.

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.

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 1 (0-3) or 2 (0-6) Prereq fourth year Vet Med. Guided preceptorship in an accepted extramural clinical or laboratory setting.

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) Prereq fourth year Vet Med. Advanced clinical subjects developed as courses for fourth year veterinary students.

Veterinary Clinical Medicine and Surgery

V MS 261 Issues in Animal Agriculture 3 For majors in agriculture. Common diseases and injuries of farm animals.

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 Physiology of Disease 3 Same as A S 444.

498 NIH Summer Seminar 2 (1-3) Prereq forth or fifth year veterinary DVM students from NIH summer. 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 Anesthesiology 1 Prereq DVM degree. Lectures from WSU College of Veterinary Medicine and Department of Animal Sciences and from UI Department of Animal and Veterinary Science.

585 Selected Topics in Advanced Clinical Neurology 1 or 2 May be repeated for credit; cumulative maximum 10 hours. Prereq DVM degree. Advanced veterinary neurology as applied to clinical practice.

587 Hospital Rotation 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Supervised practical experience in all service areas of the veterinary hospital. Cooperative course taught by WSU, open to UI students (VS 587).

589 Advanced Clinical Veterinary Medicine V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Special topics.

591 Advanced Clinical Diagnosis V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Advanced course in systems clinical and laboratory examination.

592 Seminar 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592). S, F grading.

594 Advanced Small Animal Surgery 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Advanced clinical laboratory diagnosis and interpretation.

599 Advanced Radiology 2 (1-3) Prereq DVM degree. Advanced study in the field of veterinary radiology and radiation treatment.
Program in Women’s Studies

Director, N. Sturgeon; Associate Professor, D. Aguilar; Assistant Professor, M. Bloodsworth.

The Program in Women's Studies offers an interdisciplinary study of women, with an emphasis on their lives, roles, and contributions. The program is designed to achieve four major objectives:

1. to provide students with a systematic knowledge of the multidisciplinary scholarship about and by women;
2. to enhance the qualifications of students preparing for careers in business, education, government, communications, the sciences and social sciences, among others;
3. to facilitate the understanding of continuing social change in structures and systems organized around gender, race, class, and sexuality; and
4. to further university and social goals of gender equality and social justice.

The program 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, 391, 410, and 481. The minor requires a minimum of 16 credit hours which must include W St 200, 391, 481. A Bachelor of Arts in Humanities, Social Sciences, or Liberal Arts, concentrated in Women's Studies, is available through the General Studies Program.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

WOMEN’S STUDIES DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester Hours
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Social Sciences [S] (GER) 3
Tier I Science [Q] (GER) 3
W St 200 [S] (GER) 3

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Social Sciences [S,K] (GER) 3
W St Humanities Elective 3

Sophomore Year

First Semester Hours
Communication Proficiency [C,W] (GER) 3
Math Proficiency [N] (GER) 3
W St 300 [S] (GER) 3
W St Humanities Elective 3
Electives 3

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Intercultural [I,G,K] (GER) 3
W St Social Science Electives 6
Electives 3
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] 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] 3
W St Elective 3
300-400-level Electives 6

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
W St 410 3
W St Elective 3
300-400-level Electives 6
Tier III Capstone (GER) 3
Electives 3

1 Students may substitute one four credit Tier I Science for both the three credit Tier I Science and the one credit Science Elective.
2 Consult advisor.

Description of Courses

Women's Studies

W St

150 Marital and Sexual Life Styles 3 Same as Soc 150.
200 [S] Introduction to Women's Studies 3 Multi-disciplinary perspectives on women and on their past, present, and potential contributions.
216 [H] American Culture 3 Same as Hist/Engl 216.
230 Human Sexuality 3 Same as Psych 230.
235 [I] African American History 3 Same as CAC 235/Hist 205.
250 [S] The American Health Care System 3 Same as Phar 250.
298 [S] 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.
310 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours.
320 Contemporary Masculinity and Men's Issues 3 Analysis of the development of masculinity in its biological and cultural forms.
325 [S] Gender and Politics 3 Same as Pol S 325.
330 [H] [M] Introduction to Literary Criticism 3 Same as Engl 308.
331 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subject/issues relating to women.
335 Women in Management and Leadership 3 Analysis of women's historical and contemporary role in American management.
336 [K] Gender in Cross Cultural Perspective 3 Same as Anth 316.
339 Resource Management and Problem Solving 3 Same as H D 320.
331 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subject/issues relating to women.
334 [S] Psychology of Women 3 Same as Psych 324.
339 Women and the Law 3 Historical base of women's legal rights and obligations; analysis of legislative and judicial responses to sexual discrimination.
332 Global Feminism 3 Prereq W St 200. An interdisciplinary approach to examining women’s roles and experiences throughout the world and different approaches to feminism/feminisms.
335 Women in Latin American History 3 Same as Hist 335.
350 [S] European Women’s History, 1400-1800 3 Same as Hist 350.
351 [S] The Family 3 Same as Soc 351.
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] Sociology of Gender 3 Same as Soc 384.
391 Women and Popular Culture 3 Prereq W St 200. Analysis of the intersection of gender, race, class, and sexuality through popular cultural texts-film, television, art, literature, performance.
395 [M] History of Women in the American West 3 Same as Hist 395.
402 Cross-Cultural Gender and Kinship 3 Same as Anth 402.
403 [S] Violence Toward Women 3 Same as Crm J 403.
406 [290] [T] Women and Work 3 Prereq W St 200; completion of one Tier I and three Tier II courses. Social science analysis of the relationship between women and work in contemporary American society.
407 [H] Biology of Women 3 Same as Zool 407.
409 [H] Women Writers in the American West 3 Same as Engl 409.
410 Internship  1-12  Prereq W St 200; 300 or 481 with B or better, by interview only. May be repeated for credit; cumulative maximum 12 hours. Supervised experience in approved campus or community agencies or projects focusing on women's issues. S, F grading.

411 Asian Pacific American Women 3 Same as Hist 421.

421 The Frontier and the American West 3 Same as CAC 411.

454 [T] La Chicana in US Society 3 Same as Hist 421.

460 [K] Gender, Race, and Nature in American Culture 3 Prereq W St 200 or 300; completion of one Tier I and three Tier II courses. Exploration of American culture through examination of cultural representations of nature in mainstream and environmental politics.

475 Marginality and Movement 3 Same as Kin 475.

481 [M] Theoretical Issues in Women's Studies 3 Prereq W St 200 or 300. Introduction to the field of feminist theory, including classic interdisciplinary methods, and applications of this scholarship to contemporary women's issues.

484 [S] Lesbian and Gay Studies 3 Prereq Soc 101, 102, or W St 200. Prereq completion of one of Tier I and three Tier II courses. Interdisciplinary exploration of issues related to gender and sexuality, explored transhistorically and cross-culturally, including race, class and age differences.

485 Theoretical Issues in Gay and Lesbian Studies 3 Prereq Soc 484 or 300-400-level W St course. Theoretical construction and interpretation of sexualities, gender, and identity.

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

Department of Zoology


Zoology is the science that deals with animals. It embraces not only the traditional study of animal diversity and natural history, but also modern subdivisions extending from subcellular and cellular to ecological and evolutionary scales. An undergraduate preparation in zoology provides a student with the basis for pursuing outdoor and indoor vocational opportunities in ecology, laboratory research and technology, human health, animal health and welfare, and a variety of other biological specializations. The department awards the Bachelor of Science in Zoology. The flexible curriculum leading to this degree meets the needs of students with various interests and goals. Built around an integrated core of basic science courses several optional course programs designed to prepare students either for attending postgraduate or professional school or for entering a vocational field. The general zoology option provides a broad, solid foundation in zoology. It is aimed especially at students desiring a well-rounded background for further professional studies, such as in graduate or veterinary school. Students aspiring to enter medical or dental school should find the pre-medical/preental option to be particularly apro- priate. Another option in the department is the course program in ecology. This program provides the graduate with a broadly based ecological understanding applicable to such fields as environmental, wildlife and conservation biology. A fourth optional program in animal care prepares students for careers involving animal care and maintenance in research institutions, zoos, aquaria, and clinics. In addition to the above principal options, other course-program options can readily be arranged through advisor consultation to meet a student's particular interests or academic goals.

The department offers an undergraduate minor in zoology, as well as administering a minor in ecology.

At the graduate level, the department awards both master's and doctoral degrees in 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. The last two are particularly prominent areas of the department's graduate program. A list of specific faculty interests can be obtained by writing to the department.

There are modern facilities for graduate study in cell and developmental biology, genetics, physiology, functional morphology, systematics, and behavioral, environmental and evolutionary biology. The university's rural location is conducive for field studies. Special facilities include the vertebrate collections of the Charles R. Conner Museum, the George E. Hudson Biological Preserve of 760 acres, the Electron Microscopy Center, the Eastlick Vivarium for maintaining lab animals, and local terminals connected to the university's central computing facility and to the Ethernet system.

Cooperation with numerous other campus units extends research opportunities. Cooperative arrangements with faculty in such departments as biochemistry and biophysics, botany, entomology, genetics and cell biology, animal sciences, natural resource sciences and the veterinary college are readily achieved.

Degree Program Requirements

Honors students complete Honors Requirements in place of General Education Requirements.

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 in 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.

ZOLOGY DEGREE PROGRAM

All 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: Bio S 103 and 104; Bio S 372 [M] or Zool 330; chemistry through organic (Chem 240, or 340 and 341); GenCB 301; General Physics (Phys 101 and 102, or 201 and 202); math through calculus (Math 140, 171, or 202); Zool 393 [M]; Zool 350 or 353, or 352 and 452 [M], or 450 and 452 [M]; two from Zool 320, 322, 324; Zool 405; an additional 12 hours of program-option courses, other Zool courses or advisor-approved supportive course work. In the degree program sequence below, these additional courses are designated as Program Option Courses.

Freshman Year

First Semester

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

Second Semester

Bio S 104 [B] (GER) 4
Chem 102 [P] or 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

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

Junior Year

First Semester

Arts & Humanities [H,G] (GER) 3
Program Option Course* 3 or 4
Social Sciences [S,K] (GER) 3
Zool 320, 322, or 324 4
Zool 393 [M] 2
Complete Writing Portfolio

Second Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3-6
Bio S 372 [M] or Zool 330 3 or 4
Program Option Course* 3 or 4
Zool 320, 322, or 324 4

Senior Year

First Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 6
Program Option Course or Elective* 3 or 4
Zool 350 or 353 4
Zool 405 3

Second Semester

Program Option Courses or Electives* 8-10
Tier III Capstone (GER) 3
Zool 350 or 353 4

* Math 107 may be needed before enrolling in calculus, depending on math placement score.

1 Premedical and preental students should select...
Chem 105, 106, 340 & 341, and subsequently take Chem 342 and either Chem 343 or BC/BP 364. Pre-veterinary students may take Chem 240, but also need to complete BC/BP 364 to qualify for veterinary school admission.

\* Zool 224 and its complementary laboratory course, Zool 225, are recommended as preparatory courses for advanced zoology courses and can be applied toward the 12 hours of additional credits in the core curriculum. If a student elects not to take them, Zool 322 is available to take in the fall semester of the sophomore year.

\* Consult the list of courses in the course-program options below or see advisor for other options.

\* Students selecting the General Zoology Option or the Ecology Option should take Bio S 372.

\* One of Zool 350, 352, 353, 450 is required. Zool 350 and 353 include a laboratory component. If Zool 352 or 450 is selected, Zool 452 is also required as a complementary lab course.

**COURSE-PROGRAM OPTIONS**

The complement of courses in each of the department's four principal options is listed below. Students are advised to complete the entire complement to assure adequate preparation in the option. Twelve of the credits earned are applied as part of the core curriculum to satisfy degree requirements.

**Animal Care Option**

A S 285, Zool 224, 225, 438 [M], 498 (1-4 hours of career experience internship); A S 314 or NATRS 431; Micro 301, Zool 417 [M]. (Also BC/BP 364 if preveterinary).

**Ecology Option**

Bot 332, 462 (463 [M] also recommended), one from NATRS 450 [M], Zool 330, 426 and 429; 443; 447; one from Zool 310 [M], 410, 411, 412, 414; one from Entom 343 and 344, Zool 322, 412, 423, 428, 430 [M]; an approved statistics course. (This option fulfills a minor in ecology).

**General Zoology Option**

An additional selection from Zool 350, 353, 352 and 452 [M], or 450 and 452 [M]; two from Entom 343 and 344, 448, Zool 322, 412, 417 [M], 423, 428, 430 [M]; an approved statistics course. (Also BC/BP 364 if prevetinary).

**Premedical/Predental Option**

An additional selection from Zool 350, 353, 352 and 452 [M], or 450 and 452 [M]; Chem 105, 106, 340, 341, 342; BC/BP 364 or Chem 343; one course from Entom 343 and 344, 448, Zool 322, 412, 417 [M], 423, 428, 430 [M]; an approved statistics course.

**PRE-VETERINARY PROGRAM**

A minimum of six years is required to obtain the DVM degree. Two or more years of preprofessional (pre-veterinary) training must be taken followed by four years of professional study in veterinary medicine. The following curriculum will allow students to finish preprofessional academic requirements in two years. This schedule is rigorous. A student who cannot maintain a high g.p.a. following this schedule should choose to finish the preprofessional requirements in three years.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tr>
<td>Bio S 103 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
<td>4</td>
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**Second Semester**

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<th>Hours</th>
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<tr>
<td>Bio S 104 [B] (GER)</td>
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<tr>
<td>Chem 106 [P] (GER)</td>
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<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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**Sophomore Year**

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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Chem 240 (or 340 &amp; 341)</td>
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<td>Phys 101 [F] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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**Second Semester**

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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>BC/BP 364</td>
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<tr>
<td>GenCB 301</td>
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<tr>
<td>Intercultural [L,G,K] (GER)</td>
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<td>Phys 102 [F] (GER)</td>
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All preprofessional academic requirements must be completed by the end of the academic year during which the application is under consideration. Students wishing to apply to Veterinary School during the sophomore year must complete the Graduate Record Exam (GRE) General Test and have sufficient Veterinary medical exposure and/or animal experience. Applications are due by October of the sophomore year if prerequisites will be met by the end of the sophomore year.

**Junior Year**

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<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Program Option Courses or Electives</td>
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<tr>
<td>Zool 320, 322, or 324</td>
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<tr>
<td>Zool 393 [M]</td>
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<tr>
<td>Complete Writing Portfolio</td>
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**Second Semester**

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<th>Hours</th>
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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Bio S 372 [M] or Zool 330</td>
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<tr>
<td>Program Option Course</td>
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<tr>
<td>Zool 320, 322, or 324</td>
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**Senior Year**

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<th>Hours</th>
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<tr>
<td>Program Option Courses or Electives</td>
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<tr>
<td>Zool 350 or 353; 352 &amp; 452; or 450 &amp; 452</td>
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<tr>
<td>Zool 405</td>
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**Premedical and Predental Studies**

Washington State University has no certified major or degree specifically designated as premedicne or predentistry. The above described Premedical/Predential Option is offered by the Zoology Department as a course program designed to provide a solid academic foundation that successfully prepares the student for admission into medical or dental school.

**Minor in Ecology**


**Minor in Zoology**

Requires a minimum of 16 hours, including Zool 224, 225; 320, 322, or 324; 8 additional hours of Zool, 6 of which must be upper division. No more than 2 hours of Zool 496, 497, 498, or 499 may be included in the 16 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: Bio S 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.

**Description of Courses**

<table>
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<tr>
<th>Zoology</th>
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<td>Zool</td>
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<td>135 [B] Animal Natural History</td>
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Identification, life history, habitat relations, ecology, behavior, and conservation of animals commonly found in the Pacific Northwest.

| 150 [Q] Evolution | 3 |

Basic principles and implications of Darwinian evolution.

| 224 Adaptive Strategies of Animals | 3 |

Prereq biology course. Adaptive functions of animal structural designs, systemic processes and sensory mechanisms; means of accommodating the physical environment; feeding and antipredator tactics.

| 251 Introductory Human Physiology | 4 |

(3-3) Invertebrate and vertebrate animals; structural features, adaptation, diversity and systematic relationships.

| 310 [M] Aquatic Ecology | 3 |

(2-3) Prereq biology course. General ecology of fresh, marine, and brackish waters.

| 314 (414) Fish Ecology | 3 |

Prereq Bio S 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. |
315 Gross and Microanatomy 4 (3-3) Prereq one semester Bio S. Gross and microscopic anatomy of the human body.

316 Human Embryology 3 Rec Zool 315. Basic aspects of human development with emphasis on congenital defects.

320 Principles of Animal Development 4 (3-3) Prereq GenCB 301. Experimental analyses of development and descriptive and comparative examination of embryology; emphasis on the chordates.


324 Comparative Vertebrate Anatomy 4 (2-6) Prereq Bio S 104. Evolution of vertebrates and their organ systems; correlation of structural modification with function.


331 Current Debates on the Environment 1 Prereq Bio S course. Discussion of contentious and contemporary environmental issues from biological, social, economic and political perspectives.

350 Comparative Physiology 4 (3-3) Prereq Bio S 104. Analysis of systems and integrative physiology with an emphasis on evolutionary adaptation among mammalian and non-mammalian vertebrates.

352 Cell Physiology 3 Prereq Bio S 104, organic chem; Rec c/l in Zool 452. Function and control at the cell-tissue level.

353 Mammalian Physiology 4 (3-3) Prereq Bio S 104; organic chem, function and control at the organ-organismic level with emphasis on mammals, including humans.

393 [M] Seminar I 2 Literature investigation, oral presentation and written reports of selected topics in zoology.

394 Medicine as a Career 1 Prereq junior standing, by interview only. Current issues in medical education, ethical, financial, and personal aspects of medical practice.

395 Seminar II 1 May be repeated for credit; cumulative maximum 4 hours. Training in abstracting and reporting recent and classical research in zoology.

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

407 [B] Biology of Women 3 Prereq Bio S 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.

410 Marine Ecology 3 Prereq 6 hours of physical and/or biological science. Marine environments: their ecology, role in human development, and hazards to their well being.

411 Limnology 4 Prereq general ecology. Physical, chemical, and biological features of lakes and streams. Field trips required. Cooperative course taught by UI (Fish 415), open to WSU students.


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


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


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

445 Nongame Management 2 Rec Zool 423, 428. Review of principles, methodology, and concepts applied to management and conservation of nongame wildlife in relation to current land-use practices. Cooperative course taught by UI (Wlf 445), open to WSU students.


450 Introduction to Cell Biology 3 Same as GenCB 450.

451 Comparative Vertebrate Reproduction 3 Prereq Bio S 104. Physiology of major events in reproductive cycles of vertebrates, emphasizing mammals. Credit not granted for both Zool 451 and 551. Cooperative course taught by UI (Zool 411), open to WSU students.

452 [M] Cell Biology Laboratory 2 (1-3) or 3 (1-6) Same as GenCB 452.

453 Directed Problems in Cell Biology 1 Same as GenCB 453.

460 Environmental Physiology 3 Prereq Zool 350 or 353. Individual and evolutionary adaptations to changing environments with emphasis on recent literature. Credit not granted for both Zool 460 and 560.

480 [M] Writing in Biology 2 Discussion and practice in relating thinking and writing; popular and professional communication in biology.

486 Marine Invertebrate Communities 1 (0-3) Prereq Bio S 104. One-week field trip to Shannopin Point Laboratory to gain first-hand experience with several marine habitats. Cooperative course taught jointly by WSU and UI (Zool 486).

490 Topics in Zoology V 1-3 May be repeated for credit; cumulative maximum 6 hours.


497 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Academic traineeship in laboratory teaching and tutoring.

498 Career Experience Internship V 1-4 May be repeated for credit; cumulative maximum 4 hours. By interview only. Experience in work related to specific career area. S, F grading.

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

505 Principles of Organism Evolution 3 Graduate-level counterpart of Zool 405; additional requirements. Credit not granted for both Zool 405 and 505.

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

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

512 Aquatic Pollution Ecology 3 Prereq Zool 411 or by interview only. Principles and working examples of the ecology of polluted aquatic stream and lake habitats. Two one-day field trips. Cooperative course taught by UI (Fish 512), open to WSU students.

513 Advanced Fishery Management 3 Compens- ation 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.

515 Fish Physiology 4 By interview only. Principles and methods used to study vital organs, organ systems, growth, and reproduction of fishes; emphasis on osmoregulation, metabolism, endocrinology, and respiration. Cooperative course taught by UI (Fish 511), open to WSU students.

516 Fish Genetics 2 Same as GenCB 516.

520 Conservation Genetics 2 Same as GenCB 520.

521 Quantitative Genetics 2 Same as GenCB 521.

526 Population Analysis 1 Same as NATRS 526.

529 Principles of Population Dynamics 1 Same as NATRS 529.

530 General and Comparative Neurophysiology 4 Same as Neuro 530.

535 Biogeography 2 Prereq 300-400 level course at organismal level. Principles underlying patterns of plant and animal distribution in space and time.

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

543 Predator-Prey Dynamics 1 Same as Entom 543.

548 Evolutionary Ecology 3 Rec Bio S 372; Zool 405. Evolutionary dynamics of natural populations and the co-evolution of species. Cooperative course taught by WSU, open to UI students (WLF 548).

551 Comparative Vertebrate Reproduction 3 Graduate-level counterpart of Zool 451; additional requirements. Credit not granted for both Zool 451 and 551. Cooperative course taught by UI (Zool 511), open to WSU students.
552 Comparative Physiology 3 Prereq general physiology course. Adaptations of excretion, respiration, circulation, and metabolism in vertebrate and invertebrate animals.

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

557 Advanced Mammalian Physiology 4 Same as V Ph 557.

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

560 Environmental Physiology 3 Prereq Zool 350 or 353. Graduate-level counterpart of Zool 460; additional requirements. Credit not granted for both Zool 460 and 560. Cooperative course taught by WSU, open to UI students (WLF 560).


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

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

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

591 Topics in Ecology and Evolution V 1-3 May be repeated for credit; cumulative maximum 6 hours. Current topics in ecology, population, biology, evolution, behavior, systematics, and biogeography.

592 Advanced Topics in Cell Biology V 1-3 May be repeated for credit; cumulative maximum 7 hours. Same as GenCB 592.

593 Seminar I 1 May be repeated for credit. Literature and problems.

594 Advanced Topics on Vertebrate Form and Function V 1-3 May be repeated for credit. Analysis of animal structure and function emphasizing the evolution of complex systems; constructional morphology; ecomorphology; phylogenetics; heterochrony; size and shape.

595 Seminar II 1 May be repeated for credit; cumulative maximum 8 hours. Literature and problems.

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

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

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

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

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
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<td>Samuel L. Kindred</td>
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<td>Scientist - Biological Systems Engineering</td>
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<tr>
<td>William Kinsel</td>
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<tr>
<td>Robert Kirkpatrick</td>
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<tr>
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</tr>
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<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Institution</th>
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<tbody>
<tr>
<td>Katrina A. Mealey</td>
<td>PhD, Texas A &amp; M University, DVM, Colorado State University, Assistant Professor - Veterinary Clinical Sciences</td>
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<th>Position</th>
<th>Institution</th>
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MSLS, University of Illinois  
Librarian 3 - Libraries

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Instructor - Kinesiology and Leisure Studies
ADMISSION REQUIREMENTS

1. GENERAL REQUIREMENTS
   (a) To be eligible for admission to Washington State University, an applicant must be a high school graduate or its equivalent.
   (b) The total number of new students admitted for any one semester will be based on the number of students for whom facilities can be made available.
   (c) Exceptions to the admission requirements may be made only by the Admissions Subcommittee of the Academic Affairs Committee or their designee.
   (d) Anyone seeking admittance to the Graduate School must follow procedures in the Graduate School Policies and Procedures Manual available in the Graduate School.

2. FRESHMAN REQUIREMENTS. Freshman applicants are considered for admission based on required high school courses completed, grade point average and the results of the Washington Pre-College Test (WPCT), if taken prior to June 1, 1989, Scholastic Aptitude Test (SAT), or the American College Test (ACT). On the basis of these three criteria, the most qualified applicants are offered admission.

Applicants are required to submit a high school transcript showing completion of the following courses:

<table>
<thead>
<tr>
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<th>Requirement</th>
</tr>
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<tr>
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<td>Four years (including at least one year each of composition and literature).</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Three years (one year of geometry and two years of algebra including an introductory component of trigonometry).</td>
</tr>
<tr>
<td>Science</td>
<td>Two years (including at least one year of laboratory).</td>
</tr>
<tr>
<td>Social Science</td>
<td>Three years (including at least one year of history).</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>Two years of a single foreign language (or approved sign language).</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>One year of fine, visual, or performing arts, or one additional year of academic elective.</td>
</tr>
</tbody>
</table>

Applicants from unaccredited high schools may be required to pass validating examinations.

3. REGULAR ADMISSION OF FRESHMEN 25 YEARS OF AGE OR OLDER. A student 25 years of age or older who is seeking initial entry at the freshman level may be offered regular admission if, as a minimum, the student presents a score of at least 700 on the SAT, 15 on the ACT, or 83 on the Washington Pre-College Test (WPCT). 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:

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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 offered admission by WSU with at least 90 quarter (60 semester) hours of transferable lower-division credit already completed.
      (2) The student’s WSU academic advisor has indicated that additional lower-division course work is required to meet specific general education, college or departmental requirements for a WSU degree.
      (3) Courses to meet these general education, college or departmental requirements are not offered at the WSU campus to which the student has been admitted or at the student’s delivery site.
      (4) No more than 20 total quarter (13 total semester) hours of additional lower-division credit will be allowed toward a baccalaureate degree earned by a student enrolled at a WSU campus or delivery site which does not offer the required course(s).
      (5) A student may not petition for additional lower-division credit earned prior to the offer of admission to WSU.
      (6) The petition must be approved and on file with the Registrar’s Office at WSU Pullman before completing the additional course work; if not approved in advance, additional course work will not be allowed.
      (7) The additional credit will not be posted on the WSU transcript until an official transcript from the regionally accredited two-year or community college(s) has been received by the Admissions Office at WSU Pullman.
   (e) Two full years of credit and completion of lower-division General Education Requirements will be granted to students who have been awarded the Direct Transfer Associate (A.A. or A.S.) degree from a Washington community college or the Associate of Arts—Oregon transfer degree from an Oregon community college which has adopted a general education program comparable to WSU General Education requirements.
   (f) Students may complete the Direct Transfer Associate (A.A. or A.S.) degrees from a Washington or Oregon two-year college after their initial enrollment at WSU, provided the degree is completed in advance of earning fifteen semester hours of credit at WSU. No more than two WSU courses may be used to complete the degree.

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>
<thead>
<tr>
<th>AP Examination</th>
<th>Score</th>
<th>WSU Course (credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art: Studio (Drawing)</td>
<td>3</td>
<td>Fine Arts 110 (3)</td>
</tr>
<tr>
<td>Art: Studio (General)</td>
<td>3</td>
<td>Fine Arts Elective (3)</td>
</tr>
<tr>
<td>Art: History</td>
<td>3</td>
<td>Fine Arts Elective (H) (3)</td>
</tr>
</tbody>
</table>
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Appendix—Academic Regulations

AP Examination | Score | WSU Course (credits) (cont.)
--- | --- | ---
Biology | 3 | Bio S 103, 104 (8)
Calculus AB | 3 | Math 171 (4)
Calculus BC | 3 | Math 171, 172 (8)
Chemistry | 3 | Chemistry Elective [P] (3)
Computer Science A | 3 | Cpt S 150 (4)
Computer Science AB | 3 | Cpt S 150, 250 (8)
Economics (Micro) | 3 | Econ 101 (3)
Economics (Macro) | 3 | Econ 102 (3)
English Language/Comp | 3 | English Elective (3)
English Language/Comp | 4 | Engl 101 (3)
English Literature/Comp | 3 | English Elective (3)
English Literature/Comp | 4 | Engl 101, 108 (6)
French Language | 3 | Fren 101 (4)
French Language | 5 | Fren 101, 102 (8)
French Literature | 3 | French Elective (3)
German Language | 3 | Ger 101 (4)
German Language | 5 | Ger 101, 102 (8)
Government (American) | 3 | Political Science Elective (3)
Government (American) | 4 | Pol S 101 (3)
Government (Comp.) | 3 | Political Science Elective (3)
Government (Comp.) | 4 | Pol S 102 (3)
History (US) | 3 | Hist 110 (3)
History (US) | 4 | Hist 110, 111 (6)
History (European) | 3 | Hist 101 (3)
History (European) | 4 | Hist 101, 102 (6)
Latin: Vergil | 3 | Classics Elective (4)
Latin: Latin Literature | 3 | Classics Elective (3)
Music Theory | 3 | Music Elective (2)
Music Listening/Lit. | 3 | Music Elective [H] (3)
Physics B | 3 | Physics Elective (no lab) [P] (6)
Physics C: Mech. | 3 | Physics Elective (no lab) [P] (3)
Physics C: E + M | 3 | Physics Elective (no lab) [P] (3)
Psychology | 3 | Psych 105 (3)
Russian Language | 3 | Rus 101 (4)
Russian Language | 3 | Russian Elective (3)
Spanish Language | 3 | Span 101 (4)
Spanish Language | 5 | Span 101, 102 (8)
Spanish Literature | 3 | Spanish Elective (3)
Statistics | 3 | Math 205 (3)

(c) Challenge Examinations. Matriculated students currently registered at Washington State University, with permission of their advisor or department chairperson and of the chairperson of the department offering the course, may take challenge examinations for university credit in courses in which they are not registered. Students may not take challenge examinations in courses which they have audited, or in which they have received a final grade. Upper-division students may not receive credit by challenge examination in 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 $165 per course.

(d) Military Credit. Credit will be granted for satisfactory completion of:

(1) Military service schools in the amount recommended by the American Council of Education in the publication, Guide to the Evaluation of Educational Experiences in the Armed Forces.

(2) United States Armed Forces Institute correspondence courses (under the rules applicable to other correspondence work).

(3) Dantes Credit: Elective credit for DANTES Subject Standardized Tests (DSTTs) 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.

(4) 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 Time Schedule and also in the course syllabus.

CLASS STANDING OF STUDENTS

25. CLASS STANDING. Freshman Standing — below 30 semester hours; Sophomore Standing — 30 to 59 1/2 hours; Junior Standing — 60 to 89 1/2 hours; Senior Standing — 90 and above hours.

CREDIT

27. CREDIT DEFINITION. Academic credit is a measure of the total time commitment required of a typical student in a particular course of study. For the WSU semester system one semester credit is assigned for a minimum of 45 hours of total time commitment. This time commitment includes: 1) time spent in scheduled course activities organized by an instructor (lectures, discussions, workbooks, videotapes, laboratories, studios, fieldwork, etc.); 2) time spent in group activities related to course requirements; and 3) time spent in reading, studying, problem solving, writing, and other preparations for the course. The minimum time commitment, based on a fifteen-week semester and a traditional campus setting, should follow these guidelines: 1) lecture—one hour of lecture per week for each credit hour; 2) laboratory—three hours of laboratory per week for each credit hour; 3) independent study—three hours of independent work per week for each credit hour; 4) studio—two hours of studio work per week for each credit hour; 5) ensemble—four hours of ensemble work per week for each credit hour; For courses to be given during a different time frame than the fifteen-week semester or in a different format than the traditional, the course proposal must clearly define how the total time commitment is determined to justify the credit hours requested for the course.
28. HIGH SCHOOL COOPERATIVE PROGRAM. High school students may enroll as part-time students at Washington State University provided they are admitted to the university and pay the appropriate fees. Such enrollments may be for high school or university credit. If for high school credit, a special fee applies.

29. WORK FROM HIGH SCHOOLS, BUSINESS COLLEGES, AND COLLEGES AND UNIVERSITIES WITHOUT REGIONAL ACCREDITATION.

No university credit shall be given for work from high schools, business colleges, or colleges and universities without regional accreditation.

31. CREDIT TO HIGH SCHOOL STUDENTS FOR COURSES COMPLETED PRIOR TO HIGH SCHOOL GRADUATION.

Washington State University encourages students to complete rigorous college preparatory courses in high school, or to take college courses while in high school if they have adequate preparation. In some cases college credit may be awarded when consistent with the following criteria.

(a) High School Courses: Some high schools may offer instruction at the college level, and when consistent with university and academic department policies, college credit will be awarded if student achievement is validated by an approved national examination such as Advanced Placement or International Baccalaureate, or a review or examination administered by the university.

(b) Running Start Program:
(1) Credit will be awarded for college courses taken prior to high school graduation when such courses are completed through the state of Washington’s Running Start Program.
(2) Courses offered by Washington State University to high school students participating in Running Start will have an enrollment of at least seventy percent of regularly admitted students in each course section.

(c) Other Courses: College credit may be awarded for courses taken in high school when consistent with the following conditions:
(1) The course must also be currently available on the campus of the regionally accredited college or university and must be listed in the college or university catalog. The course, regardless of setting, must use the college or university curriculum.
(2) Students interested in credit must register and pay fees at the beginning of the term and would be subject to the same grading and tuition refund policies as students on the campus of the regionally accredited college or university.
(3) The faculty teaching the course in high school must carry a regular or adjunct faculty appointment at the regionally accredited college or university.
(4) The students taking the course in the high school must be assessed and graded in the same manner as students taking the course on the campus of the regionally accredited college or university. Student work, whether completed for the course offered on-campus or at the high school, must be graded and evaluated by the same standards.

34. REPEAT COURSES. Students who wish to repeat a course in which they have received a grade of C- or below or an incomplete (I) or a withdrawal (W) will be eligible to enroll within the next two semesters ONLY if there is space available in the course. NOTE: If a student repeats a course in which an incomplete grade was received, the incomplete grade will be changed to F. (See Rule 90h.)

(a) Repeating courses graded below C. A grade of C- or below may be disregarded if the student repeats the course and earns another grade. The last grade received shall stand as the course grade, and the last grade only shall count on the cumulative grade point average and contribute to the total number of hours required for graduation. For some purposes, the first grade only shall be used. For purpose of record the series of repeats and grades will be retained on the student’s official record. Grades C and above may not be repeated for credit or grade points. It is the student’s responsibility to indicate all resident repeats at the time of registration. Repeats by correspondence, extension, or in residence at other institutions must be reported in writing to the Office of the Registrar.

(b) Repeating for additional credit.
(1) Some courses have been approved for repeat credit, i.e., the student may re-enroll in the course during a subsequent semester and credits 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.

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 reinstated.

40. Appeals will be considered only when there are unusual extenuating circumstances and must be submitted in writing to the Student Advising and Learning Center.

41. An undergraduate student who has been reinstated after becoming deficient under Rules 37, 38 or 39 will be on official probation. The specific conditions of reinstatement for students who are on official probation will be determined by Academic Standing. Students on probation who fail to comply with the conditions of their reinstatement may be barred from future enrollment.

42. Students enrolled in professional programs (e.g., clinical courses in nursing) that involve human health care may be subject to more stringent requirements in grading, repeating course work, and retention provided the more stringent requirements are approved through Faculty Senate channels and are published and are made available to students prior to certification. Students are referred to the nursing and pharmacy offices for specific requirements.

43. In evaluating admission credentials of transfer students or when considering reinstatement of former WSU students whose cumulative g.p.a. was below a 2.00 when they were dropped for low scholarship, all work completed prior to a specified date, not less than four years prior to the time of application, may be disregarded and all credit withheld. After 15 semester hours of satisfactory work at WSU following admission or reinstatement, the student may petition to restore some of the credits previously withheld. Only credit earned in courses graded C or better will be considered for restoration, and if approved, only the courses and credit (not grades or grade points) will be restored. Requests for admission or reinstatement and petitions for credit restoration will be considered by the Academic Advising and Reinstatement Subcommittee for former WSU students and by the Admissions Subcommittee for transfer students.

CONDUCT

45. Students, no matter where they reside, while enrolled in the institution, are responsible for their conduct to the President and the faculty, acting usually through the Vice Provost for Student Affairs or the University Conduct Committee or both. Students are expected to show due respect for order, morality, and the rights of others. Students who fail to conduct themselves properly are subject to discipline, which may extend to temporary or permanent removal from the institution.

ENROLLMENT, REGISTRATION, DROPPING COURSES, AND WITHDRAWALS

47. PLACEMENT TESTS. All students will be required to take the regulation placement tests as a prerequisite to enrollment in appropriate courses.
Appendix—Academic Regulations

50. PASS, FAIL GRADING OPTIONS. Pass, fail options are available for undergraduate and graduate students. The advisor’s approval is required for undergraduates. No courses designated as meeting General Education Requirements for Graduation may be taken pass, fail by any undergraduate. No more than two courses may be taken on a pass, fail basis during any given semester. Two courses is the limit for summer session.

A total of six courses may be taken on a pass, fail basis by students initiating and completing work for a baccalaureate degree at Washington State University. Students in the College of Veterinary Medicine with advisor approval may enroll for a total of six courses in the professional curriculum on a pass, fail basis, subject to the regulations listed above. University Honors College courses may be taken on a pass, fail basis only with the permission of the Honors College Dean.

Class 5 (except those working on second baccalaureate degree) and Class 6 (graduate) students are eligible to take courses on a pass, fail basis, but such work cannot be in the student’s official degree program or used for removal of a specific undergraduate deficiency. Credit hours earned under pass, fail are counted toward 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 16 semester hours, half of which must be in upper-division work. Upon completion of the requirements, the department will notify the Registrar’s Office, and the minor or second major will be posted on the student’s permanent record (transcript).

55. CHANGE OF MAJOR. A student may change from one department to another only on approval of the chairpersons of the departments or deans concerned.

56. RECERTIFICATION. A certified major who becomes deficient and is dropped by the major department or program will be eligible to recertify, on a space-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 Time Schedule (e.g., withdrawal after the deadline). Petitions are considered only in the case of extraordinary circumstances such as a medical emergency and require supporting documentation. Undergraduate and professional students may petition through the Registrar’s Office. Graduate students may petition through the Graduate School. Requests for exceptions must be made within two years of the date of enrollment in the course.

58. PERMISSION TO REGISTER LATE. A student may not register after the second week of any session, except with the permission of the Registrar.

61. LATE SERVICE FEE. A student who does not enroll before classes start or pay fees on or before the due date will be assessed a service charge. A charge of $100.00 will be assessed to late registrations that occur after the tenth day of classes. A re-enrollment fee will be assessed those who pay tuition and fees after they have been disenrolled for nonpayment.

66. ADDING A COURSE. Students may add course enrollments only through the 5th day of the semester. (NOTE: If the course is being added pass, fail the approval of the student’s faculty advisor is also required.)

A student wishing to petition for an exception to the five-day deadline listed above must obtain the approval of the instructor and pay a service fee to add a course late.

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 advisor) 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 for which a passing grade is being earned 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, new undergraduate students working towards their first WSU degree may be eligible to use an uncontested course withdrawal.
(c) Two uncontested course withdrawals are allowed in the course of earning a bachelor’s degree.
(d) The grade shall be marked W, and the service fee shall be mandatory.
(e) 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
71. ADMISSION TO CLASSES. Instructors shall not permit a student to be enrolled in a class or admit a student more than three times as a visitor without an official enrollment notice.

72. CLASS ATTENDANCE DURING THE FIRST WEEK TO ENSURE ENROLLMENT. Students who have not attended class and laboratory meetings during the first week of the semester may be dropped from the course by the department. (Students should not assume that they have been dropped without verification from the department or Registrar’s Office.) Students having extenuating circumstances which prevent their attendance during the first week should notify the Office of Student Affairs. Student Affairs will notify instructors of the absence and the reason for it. Valid reasons for missing classes do not relieve the student of making up the work missed.

73. ABSENCES. Absences impede a student’s academic progress and should be avoided.
(a) An instructor shall report flagrant cases of absences in any course to the chairperson of the student’s major department or the Vice Provost for Student Affairs.
(b) 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 an activity provided a properly signed Class Absence Request form has been filed with the instructor prior to the absence. These university-sponsored absences are subject to an instructor’s attendance policy and are not intended to imply additional acceptable absences. In all instances, it is the student’s responsibility to make up all work missed. Problem cases should follow the Academic Complaint Procedures, Rule 104.
(c) OTHER EXCUSED ABSENCES. Students must sometimes miss examinations or other academic obligations affecting their grades because of illness, personal crises, mandated court appearances, parental responsibilities, and the like. As long as such absences are not excessive, it is 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 an untenable position. 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 Saturday following the fifteenth week of the semester and last through the following Friday. Saturday final examinations will be reserved for lecture courses taught during evening hours, except for classes that combine sections and give examinations during common reserved times between Monday and Friday. Special examinations will be scheduled for the Saturday following the Friday of final examination week.

75. FINAL EXAMINATION SCHEDULE. The final examination schedule will be determined before the start of each semester and published in the semester time schedule by the Registrar based on previous enrollment for that semester. After publication, the schedule cannot be altered except as provided.

76. SCHEDULING ALL COMMON MORNING/EVENING EXAMS. Undergraduate (100-400-level) courses having an enrollment of at least two percent of the total student body or courses with multiple lecture sections may schedule not more than three examinations each semester at the periods of 7:00 to 8:00 a.m., 5:45 to 6:45 p.m. and 8:30 to 9:30 p.m., Monday through Friday, with the exception of Monday morning and Friday evening. If permission is to be granted for a large group exam, all sections of the course must give the exam on the same day and within the same time block unless given during the regular scheduled class time. One class lecture period shall be omitted to compensate for each hour of examination. Proposed examination dates must be submitted to the Registrar’s Office not later than the first week of each semester so that a schedule for the entire semester may be circulated and posted. A class lecture period lost to Labor Day, Veterans Day, Martin Luther King Jr., Day, and/or Presidents Day holiday(s) may be counted toward this compensation for an examination. (NOTE: Officially approved and scheduled night examinations have priority over all other academic and non-academic evening activities.)

77. SPECIAL PERIODS FOR FINAL EXAMINATIONS. During examina-
tion 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 examinations and give a final examination to the students during the special exams time blocks.

In cases of difficulty in arriving at a solution, students shall refer the matter to the chairpersons of their departments or to their academic advisors.

79. CLOSED WEEK. No examinations or quizzes (other than laboratory examinations, make-up examinations and make-up quizzes) may be given during the last week of instruction.

80. NO EARLY EXAMINATIONS. A student will not be granted special examinations for the purpose of leaving the institution before the close of the semester.

81. LENGTH OF EXAMINATIONS. All regular examinations in undergraduate courses during the regular fifteen weeks of instruction, except for common morning/evening examinations and take-home examinations, will be confined to the designated class meeting times scheduled for lecture, studio, laboratory, independent 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 re-
quest appears to be made in good faith, the instructor should make alternate arrangements for administration of the examination or test, considering the integrity of the testing process, and fairness to all the students. If the instructor believes the request not to be in good faith, or if the instructor and the student are unable to agree on arrangements, the student or the instructor should seek the assistance of the department chair, cognizant dean, or the Vice Provost for Academic Affairs, in that order. The student may also contact the University Ombudsman. Students should understand that fairness in the examination process is an important consideration in the educational process and that they have a duty to cooperate in making alternate arrangements.

83. ACCOMMODATION OF DISABILITIES IN THE ADMINISTRATION OF EXAMINATIONS. Washington State University is committed to providing access to education for all of its students. In addition, federal law states that academic requirements must be modified on a case-by-case basis to afford qualified students with handicaps an equal educational opportunity. The nature of certain disabilities may necessitate accommodation of these disabilities in the administration of exams. It is the policy of the university to provide reasonable accommodation consistent with the fair and secure administration of its programs.

A student with a disability who may require special accommodation should contact the Student Disability Resource Center (DRC) when he or she arrives on the WSU Pullman campus. On the branch campuses a student should contact the Office of Student Services. A file documenting the disability will be established, and an accommodation form initiated. The instructor may ask for verification of a disability when a student requests an accommodation for an examination. The Office of Student Services or DRC provides the disabled student with a disability with an accommodation form verifying a disability and specifying the appropriate testing accommodation designed to fit the individual needs of that student. If the instructor disagrees with the arrangements as presented in the form, the instructor and/or student should seek the assistance of the DRC, department chair, cognizant dean or Vice Provost for Academic Affairs, in that order. The student and instructor may also contact the University Ombudsman or Center for Human Rights.

88. PENALTY FOR ACADEMIC DISHONESTY. Cases of academic dishonesty shall be processed in accordance with the Academic Integrity Policy, as printed in the Student Handbook and the Faculty Manual and as available from the Office of Student Affairs.

89. FINAL GRADE SUBMITTAL. Final grades will be submitted to the Registrar’s Office by 4:00 p.m. on the second working day after the close of finals week. (Final grades for Summer Session will be submitted to the Registrar’s Office by 4:00 p.m. on the second working day following the last day of Summer Session. Departments may be requested to submit final grades for summer courses earlier than the official submission deadline to facilitate grade reporting to students.)

GRADES AND GRADE POINTS

90. GRADES AND GRADE POINTS. Washington State University uses letter grades and the four (+) point numerical grading scale. The grade A is the highest possible grade, and grades below D are considered failing. Plus (+) or minus (-) symbols are used to indicate grades that fall above or below the letter grades, but grades of A+ and D- are not used. For purposes of calculating grade points and averages, the plus (+) is equal to .3 and minus (-) equals .7 (e.g., a grade B+ is equivalent to 3.3 and A- is 3.7). A student's work is normally rated in accordance with the following definitions:

90a. A. Student work demonstrates consistently excellent scholastic performance; thorough comprehension; ability to correlate the material with other ideas, to communicate and to deal effectively with course concepts and new material; reliability in attendance and attention to assignments.

90b. B. Student work demonstrates superior scholastic performance overall, in all, reliability in attendance, and attention to assignments; may demonstrate excellence but be less consistent than the work of an A student.

90c. C. Student work demonstrates satisfactory performance overall, as well as reliability in attendance, and attention to assignments.

90d. D. Student work demonstrates minimal, barely passing performance overall; limited knowledge of subject matter.

90e. F. Student work demonstrates unsatisfactory performance and comprehension or unfulfilled requirements. The grade is failing.

90f. S. (Satisfactory.) Grade given upon satisfactory completion of courses numbered 499, 600, 700, 702, 800, special examinations (Rule 15) and other courses duly authorized for S, F grading by the Faculty Senate. (Courses approved for S, F grading are footnoted in the Fall and Spring Time Schedules.) A, S, or F grades only are used to report physical education activity grades. Courses approved for S, F grading may also be graded S at midterm semester 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 program and a minimum grade point average of 3.00 in all 300-400-level and graduate courses. No grade below C is acceptable in any course for graduate credit.
100. THE GRADE POINT SYSTEM

A provides 4.0 grade points per credit hour.
A- provides 3.7 grade points per credit hour.
B+ provides 3.3 grade points per credit hour.
B provides 3.0 grade points per credit hour.
B- provides 2.7 grade points per credit hour.
C+ provides 2.3 grade points per credit hour.
C provides 2.0 grade points per credit hour.
C- provides 1.7 grade points per credit hour.
D+ provides 1.3 grade points per credit hour.
D provides 1.0 grade points per credit hour.
F provides no credit or grade points.

(Credits attempted are calculated in g.p.a.)
P credit given—grade points not calculated.
S credit given—grade points not calculated.
I provides no credit or grade points.
W provides no credit or grade points.
X provides no credit or grade points.

102. STUDENT’S SCHOLASTIC AVERAGE. A student’s scholastic average is determined by adding the grade points earned in all WSU course work and dividing by the total number of hours in which the student has been enrolled at WSU. I, W, S, P, and X grades are disregarded.

103. GROUP AVERAGES. Group averages, honor rolls, eligibility lists for honorees, and similar lists are calculated on the basis of grades received in the Registrar’s Office by 4:00 p.m. two working days following the last day of final examinations.

104. ACADEMIC COMPLAINT PROCEDURES. Students having complaints about instruction or grading should refer them first to the instructor. If the complaint is not resolved, then the student may refer the complaint in writing to the chairperson of the department in which the course is offered by the end of the last day of the following semester (excluding summer term). The chair’s decision shall be rendered within 20 business days. After the chair’s decision, the student or the instructor may appeal to the Dean’s Office. Complaints must be presented in writing to the dean within 20 business days of the chair’s decision. The written statement should describe the complaint, indicate how it affects the individual or unit, and include the remedy sought from the dean. The decision of the dean is the final step and shall be made within 20 business days. The University Ombudsman is available at any stage for advice or assistance in resolving academic complaints. At that branch campuses, the procedure is identical except that the academic area coordinator shall substitute for the department chair and the campus dean shall substitute for the college dean.

GRADUATION

106. APPLICATION FOR DEGREE (TO-DO LIST). Application for a baccalaureate or DVM degree should be made at the Registrar’s Office near the end of the junior year. The Registrar will furnish candidates with records of their grade points and the hours completed to date, and lists of major and General Education Requirements yet to be completed. The chairperson of the department is held responsible for checking all departmental requirements, including prerequisites for all courses and the courses required in other departments. A graduation fee must be paid at the time of application.

108. STUDENT RESPONSIBILITY FOR GRADUATION. Together with the advisor, the student plans the program of study each semester. However, the written curriculum requirements described in the bulletin and catalog supplements are binding, and no advisor may waive or alter them. The student has the ultimate responsibility for meeting university, college and departmental graduation requirements.

109. PETITIONS FOR GRADUATION REQUIREMENTS. Students may petition for a change in graduation requirements or by obtaining signatures of their department chairperson or director and dean on the appropriate form available in the undergraduate degree office of the Registrar’s Office.

111. REQUIREMENTS FOR UNDERGRADUATE DEGREES

(a) The four-year degree (BA, BS, B FA, B Lib A, B Mus):
1. Meet the General Education Requirements for Graduation.
2. Earn twice as many grade points as the number of hours enrolled in graded course work, in this or any institution for which a grade has been received.
3. Earn twice as many grade points in the major subject as the number of hours enrolled graded course work in that major subject at Washington State University.
4. Complete any of the four-year programs.
5. Complete the senior year under the direction of the college in which the degree is to be granted. If any portion of the final year’s work is to be completed at another institution, advance approval must be obtained, in writing, from both the department chairperson and the dean of the college.
6. Earn a minimum of 120 semester hours of credit, no more than 8 of which may be PEACT (Physical Education Activity) courses. (At least 30 must be WSU hours; see Rule 6.)
7. Earn a minimum of 40 semester hours of credit in 300-400-level courses exclusive of credit earned at two-year or community colleges. 500-level courses will count toward the 300-400-level requirement, but an undergraduate may not be required to enroll in or complete a 500-level course as a requirement for the baccalaureate degree.

(b) The five-year degree (B Arch, BS Cust M, B Phar):
1. Meet requirements 1, 2, 3, and 7 listed under (a) above.
2. Complete any of the five-year programs.
3. Complete the fifth year under the direction of the college in which the degree is to be granted. If any portion of the final year’s work is to be completed at another institution, advance approval must be obtained in writing, from both the department chairperson and the dean of the college.
4. Earn a minimum of 150 semester hours of credit, no more than 10 of which may be from PEACT (Physical Education Activity) courses. (See Rule 6.)

115. REQUIREMENTS FOR THE DOCTOR OF VETERINARY MEDICINE DEGREE (DVM)

(a) Complete the four-year professional program.
(b) Earn a baccalaureate degree from an accredited institution.
(c) Earn twice as many grade points as the number of hours required in the professional program.

116. REQUIREMENTS FOR MASTER’S DEGREES

(a) Spend not less than the equivalent of two semesters in residence (except for external programs approved by the Graduate Studies Committee).
(b) Spend not less than 30 semester hours of credit with a minimum of 21 semester hours of course work for a thesis degree program or 26 semester hours of course work for a nonthesis degree program.
(c) Earn a minimum grade point average of 3.00 on a graduate program in all upper-division and graduate course work completed for the master’s degree.
(d) Earn a minimum grade point average of 3.00 for all course work taken as a graduate student.
(e) Successfully complete graduate examinations.

117. REQUIREMENTS FOR DOCTOR’S DEGREES

(a) Spend not less than six semesters beyond the baccalaureate degree at least four of which must be at Washington State University.
(b) Spend not less than a minimum of two consecutive semesters in residence at Washington State University.
(c) Earn not less than 72 semester credit hours beyond the baccalaureate degree to include a minimum of 34 semester hours (45 semester hours for the Doctor of Arts degree) 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.
Appendix—Academic Regulations

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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