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 Course Descriptions

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

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

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

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

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

The course credit is variable; you choose the amount.

You will find the complete description of this course in the animal sciences course description section.

✔ Use the Index to find whatever you need!

Visit the Registrar's Office web site, www.registrar.wsu.edu, to search the online catalog or to access time schedule and registration information.
Plot Your Course!
Web-Based Course and Degree Tools

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

FOR CURRENT WSU STUDENTS

The Degree Audit Reporting System (DARS)
Go to: www.wsu.edu; WSU InfoNet; Student Information Center; then Undergraduate Degree Audit Request under Student Academic Information.

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

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

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

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

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

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

FOR PROSPECTIVE TRANSFER STUDENTS

Cougar TRACS
Go to: www.wsu.edu/transfer/TRACS.

With the Cougar TRACS system on the web, you can know from the convenience of your computer how your college credits will transfer to WSU. Track how your credits will transfer in seconds with Cougar TRACS. Log onto www.wsu.edu/transfer/TRACS to:
• find out how your credits will transfer to meet General Education Requirements and WSU departmental requirements;
• explore different academic major requirements using "what if" scenarios;
• determine how to plan your schedule at your current college or university to fulfill WSU requirements.

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

Contact the Transfer Center for more information:
Student Advising and Learning Center
Washington State University
260 Lighty Student Services Building
P.O. Box 641064
Pullman, WA 99164-1064
(509) 335-6000 or toll free at 1-800-978-7252
eemail: transfer@mail.salc.wsu.edu
web: http://salc.wsu.edu/transfer

FOR ALL STUDENTS

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

The Transfer Course Equivalency web site is an online tool that allows you to determine how a specific course will transfer to WSU, based on college or university courses that are in our database. You may access transfer course equivalencies in three different ways, either by the transfer course, a set of transfer courses, or by a single WSU course. It is provided for planning purposes only. Please note that the final authority concerning all transfer course equivalencies rests with the WSU Office of Admissions, in consultation with individual academic units.

Exploring Undergraduate Majors
Go to: www.it.wsu.edu/AIS/ADM/cgi-bin/ug_majors.cgi

Students seeking an undergraduate degree at WSU can select a major from more than 150 fields of study. You can explore these majors as well as focused areas of study within the major by visiting this website. The website also provides links to the colleges, the branch campuses, and to information about graduate programs.

WSU's Online Catalog
Go to: www.registrar.wsu.edu, under WSU Catalog

WSU's online catalog contains all of the information in the printed catalog as well as additional information about degree programs for students in the Honors College.
University Graduation Requirements

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

General Education Requirements

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

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

World Civilization [A]
• GenEd 110 3 cr
• GenEd 111 3 cr

Mathematics Proficiency [N]
• choose one ________________________ 3 or 4 cr

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

• choose one ________________________ 3 cr

Arts and Humanities [H][G]
• choose one ________________________ 3 cr

Social Sciences [S][K]
• choose one ________________________ 3 cr

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

Intercultural Studies [I][G][K]
• choose one ________________________ 3 cr

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

• choose one lab science (L) ________________ 4 cr
• choose one ____________________________ 3 or 4 cr
• choose one ____________________________ 3 or 4 cr

Upper-Division Requirements
All community college transfer students with an approved Washington AA or AS or an AA-Oregon Transfer degree will be held to these requirements:

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

• choose one ________________________ 3 cr

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

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

• choose one ________________________
• choose one ________________________

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

COLLEGE OF SCIENCES
COLLEGE OF LIBERAL ARTS

Additional graduation requirements
All students, including community college transfer students with an approved Washington AA, AS, AA-Oregon Transfer degree, or students pursuing a second bachelor’s degree in the majors in these colleges will be held to the following requirements:

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

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

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

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

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

• “Initial Postsecondary Enrollment” is established by matriculation through a formal admission process, after High School graduation, to an accredited institution of higher education.
• An approved Washington AA or an AA-Oregon Transfer degree completes all lower-division General Education Requirements (GERs).
• A complete description of the General Education Program can be found in this catalog.
• [G] meets a GER in either Intercultural Studies or Arts & Humanities; [K] meets a GER in either Intercultural or Social Sciences; (L) course includes a lab; [D] meets the American Diversity requirement and another GER course designation.
• University Honors College students do not complete GERs. Contact the Honors College in Bryan Hall 206 for additional information.

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

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

<table>
<thead>
<tr>
<th>Tier I: 15 semester credit hours</th>
<th>6</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>3</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>Sciences# [H], [G], [S], [K]</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [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>3</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 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 the fall semester, and prior to spring registration. Examination results will place students in a 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 — Writing Assessment at Mid-Career
   Successful performance on the University’s Junior Writing Portfolio is a requirement for graduation at WSU. Students may satisfy this requirement at any time between completing the Engl 101 requirement (or equivalent) and earning their sixty-first credit. Completing the Junior Portfolio involves submitting three papers from previously assigned class work plus two timed and proctored writing exercises. Students must complete the portfolio no later than the end of the first semester of upper-division standing (upon completion of 60 hours). Transfer students may elect to postpone the portfolio until they have completed at least one semester of work at WSU. The Writing Portfolio must be completed before a student enrolls in a course which satisfies the Writing in the Major requirement (see below).

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

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

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

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

Second Semester
Classes begin Jan 16 Jan 14 Jan 13
Martin Luther King, Jr. Day holiday Jan 15 Jan 21 Jan 20
Presidents Day holiday Feb 19 Feb 18 Feb 17
Midsemester grades due, 8:00 a.m. Mar 7 Mar 6 Mar 5
Spring Vacation Mar 19-23 Mar 18-22 Mar 17-21
Final Examinations, Monday through Friday May 7-11 May 6-10 May 5-9
Commencement May 12 May 11 May 10
Final grades due, 4:00 p.m. May 15 May 14 May 13

Summer Session
Early Session begins May 14 May 13 May 12
Memorial Day holiday May 28 May 27 May 26
Eight-Week Session begins June 11 June 10 June 9
Late Six-Week Session begins June 25 June 24 June 23
Independence Day holiday July 4 July 4 July 4
Summer Session ends, Friday Aug 3 Aug 2 Aug 1
Final grades due, 4:00 p.m. Aug 7 Aug 6 Aug 5

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

Specialized Accreditations

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

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

Commission on College of the Northwest Association of Schools and Colleges
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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- 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, MS, PhD
- Civil Engineering, BS, MS, PhD
- Communication, BA, MA
- Comparative American Cultures, BA
- Computer Engineering, BS
- Computer Science, BA, BS, MS, PhD
- Construction Management, BS
- Criminal Justice, BA, MA
- Crop Science, BS, MS, PhD
- Economics, BA, MA, PhD
- Education, BA, EdM, MA, MIT, EdD, PhD
- Electrical and Computer Engineering, PhD
- Electrical Engineering, BS, MS
- Engineering, MS
- Engineering Management, MEng-Mgt
- Engineering Science, PhD
- English, BA, MA, PhD
- Entomology, BS, MS, PhD
- Environmental Engineering, MS
- Environmental and Natural Resource Sciences, PhD
- Environmental Science, BS, MS
- Fine Arts, BA, BFA, MFA
- Food Science and Human Nutrition, BS
- Food Science, MS, PhD
- Foreign Languages and Literatures, BA, MA
- Genetics and Cell Biology, BS, MS, PhD
- Geological Engineering, MS
- Geology, BS, MS, PhD
- Health Policy and Administration, MHPA

**History**, BA, MA, PhD
- Home Economics, BS
- Horticulture, BS, MS, PhD
- Hotel and Restaurant Administration, BA
- Human Development, BA, MA
- Human Nutrition, MS
- Humanities, BA
- Individual Interdisciplinary, DA, PhD
- Integrated Crop 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, MA
- Natural Resource Management, BS
- Natural Resource Sciences, BS, MS
- Natural Resources, MS
- Neuroscience, BS, MS, PhD
- Nursing, BS, M Nurs
- Nutrition, PhD
- Pharmacology and Toxicology, WSU, PhD
- Pharmacy, Pharm.D.
- Philosophy, BA
- Physics, BS, MS, PhD
- Plant Pathology, MS, PhD
- Plant Physiology, MS, PhD
- Political Science, BA, MA, PhD
- Psychology, BS, MS, PhD
- Public Affairs, BA, MPA
- 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

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

Scholastic Societies

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

Golden Key. Golden Key National Honor Society was established in 1977 and chartered at WSU in 1987. The society is open to the top 15 percent of the junior and senior classes in all disciplines of study. Qualification is defined at WSU as those students with over 60 credit hours, 30 of which must be from WSU, who have attained a 3.4 cumulative g.p.a. Golden Key offers not only recognition for superior academic achievement, but opportunities for service and leadership. The WSU Golden Key Chapter annually recognizes the two outstanding academic 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 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 undergraduate majors or minors in a foreign language who maintain at least a 3.0 g. p. a. Graduate students are also eligible for membership.

Student Clubs, Organizations, and Honoraries

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

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

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

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

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

WSU Children’s Center

WSU Children’s Center offers part- or full-time child care for six-week- to 12-year-old children of WSU students, staff and faculty. One hundred and 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 and Testing 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. Visit our web site, www.counsel.wsu.edu.

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

The Disability Resource Center

The Disability Resource Center (DRC) coordinates accommodations for students with disabilities in academic and non-academic programs. Accommodations may include modified test taking, textbooks on tape, sign language interpreters, notetakers, and accessible transportation on campus. 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, www.wsu.edu/DRC.

Educational Telecommunications and Technology

Educational Telecommunications and Technology operates Northwest Public Radio, a network of twelve radio stations; Northwest Public Television, a network of two public television stations; and the Northwest Higher Education Telecommunication System (WHETS).


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, Vancouver, Wenatchee, Yakima, Longview, Aberdeen, Goldendale, and Colville. Instructional support activities also include Cable 8, a university-oriented Pullman cable channel; KUGR-FM, a student-operated commercial radio station; and telecommunications support for academic departments. Further information may be obtained at www.wsu.edu/ett.

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

Human Relations and Educational Services (HRES) assists in managing and resolving disputes by peaceful and constructive means for employees, students, and the greater university community. HRES offers a number of conflict resolution services including: consultation, facilitation, mediation, and organizational intervention. HRES takes a preventative approach to conflict resolution, 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/~hres.
The Center for Human Rights

The mission of the Center for Human Rights is to assist WSU in achieving affirmative action goals. It serves as a focal point for 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 made 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) 335-5483, 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 Student Retention Services, and four multicultural student centers (African American, Asian American and Pacific Islander, Chicano/Latino, and Native American). The recruitment coordinators travel extensively to meet with students of color in high schools and community colleges. The recruiters present information about WSU and guide students through the admissions process. They also work closely with communities to plan early outreach programs and to bring students to campus.

The counselors serve as academic 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. Short-term exhibits focus on special topics and report on faculty and graduate student research projects from around the globe.

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

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

The Museum of Art

The Museum of Art was established in 1974 around a core collection of American paintings assembled by former WSU President E. O. Holland and former WSU Regent Charles Orton. Dedicated to serving the educational purposes of WSU and the people of the state of Washington, the museum presents changing exhibitions on the Pullman campus and branch campuses ranging from fine arts and fine art architecture and design. Exhibitions from all major centers of art and art history, including those that focus on women artists and exhibitions that focus on cultural similarities and differences, are presented. The museum staff have toured the nation. The museum also offers a wide variety of outreach programs including docent tours, children’s workshops, symposia, films, and other special events.

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

The exhibition gallery of the Museum of Art is open and free to the public seven days a week from mid-August through June. 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, amphibia, reptiles, a dinosaur skeleton, and several hundred mounted birds and mammals, including deer, antelope, mountain sheep, mountain goat, moose, caribou, cougar, and small species. The displays are open to the public from 8:00 a.m. to 5:00 p.m. every day except university holidays.

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

Culver Memorial and Jacklin Collection

The Culver Memorial, located in the Physical Sciences Building, houses the Jacklin Petrified Wood Collection. This spectacular collection contains more than 2000 cut and polished specimens of petrified wood from all major localities in the western U.S. It is the largest display of its kind in the western U.S. Also included in the collection is a large selection of cut and polished agate, geodes and 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) 335-3099.

Drucker Collection

The Minnie Barstow Drucker Memorial Collection of Oriental Art consists of oriental furniture, accessories, art, textiles, and costumes. The collection was given to the university in 1944 by the late Arthur Eilert Drucker in memory of his wife. The Chinese, Korean, and Japanese artifacts were collected during the years the Druckers made the Orient their home. The collection may be viewed 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. Further information may be obtained at http://entomology.wsu.edu.

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

Ownbey Herbarium
The Marion Ownbey Herbarium is an internationally recognized resource for research, teaching, and service. Located in Heald Hall, Room G-9, the herbarium houses 358,000 preserved plant specimens, primarily from the Pacific Northwest but including worldwide collections. In addition to native vascular plants and weeds, the herbarium contains mosses, liverworts, lichens, and special collections of seeds and cultivated plants. The herbarium is open daily to the public; call (509) 335-3250 for hours. Staff provide assistance to persons wanting to identify and learn about plants. Facilities include a small reference library, reprint and slide collections, computers, and special botanical indices. Our website, www.wsu.edu/~wsherb, includes local plant lists and educational programs.

Smith Soil Monolith Collection
The Henry W. Smith Soil Monolith Collection contains more than 150 preserved soil profiles, some as much as eight feet in length, representing soils from all of the geographic regions in the state of Washington and 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 the “Arts on the Palouse” calendar and in a monthly calendar of events which is available on the SMTA web site at www.wsu.edu/Music_and_Theatre/calendar.html or by calling (509) 335-8525, the SMTA events line.

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

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

Jewett Observatory and University Planetarium
The James Richard Jewett Observatory is the gift of Mr. and Mrs. George F. Jewett of Spokane and is named in honor of Mr. Jewett’s father, a former professor of ancient languages at Harvard University. The observatory houses a 12-inch refractor with a visual lens and a 25-foot revolving dome. The University Planetarium is located in Sloan Hall, Room 231. Information about open house and group tours of either the observatory or the planetarium can be obtained by contacting the Program in Astronomy, (509) 335-6686.

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

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

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

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

SALC provides educational opportunities and retention services for students throughout the university. The center offers academic advising and counseling, individual and group tutoring, assistance to students with special learning needs, and media-based learning skills classes. Tutorial assistance in reading, writing, science, math, and study and test-taking skills is available. Tutorial assistance in most General Education Requirement courses is provided.
Students may be assigned an advisor in the SALC program upon entrance to the university or as a retention condition. Students may also be referred to the SALC at any time by faculty members, counselors, and others for any of the services it provides. The staff is available daily in Lighty Student Services Building, Room 260, (509) 335-6000. Visit our web site, salc.wsu.edu.

Student Computing Services

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, year-long 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 calling the HelpDesk in the ITB lab, or calling (509) 335-HELP.

Other labs are located at Gannon Goldsworthy, Duncan Dunn, Stephenson 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) 335-3663 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) 335-9355 for information.

When the Health and Wellness Services clinic is closed, emergency care can be obtained through the hospital’s emergency department. Visit our web site at www.hws.wsu.edu/maingraph.html.

Transfer Center

The Transfer Center, located in Lighty Student Services Building, Room 260, serves transfer students in a variety of ways:

- Provides incoming transfer students with a clearly identified point of contact to begin the transfer process and ensure a smooth transition to WSU.
- Provides transfer students with responsive and timely programs, services, and academic advising prior to and after enrolling that facilitates their enrollment, retention, and progress to graduation.
- Provides preliminary academic advising for transfer students seeking admission to WSU. Connects transfer students entering as certified majors to academic departments. Works with Career Services to assist undecided students in academic major search and selection.
- Oversees academic advising for transfer students enrolled at WSU who have not declared a major.
- Assists transfer students in developing academic goals and plans and realistically evaluating progress toward these goals.
- Conducts outreach workshops on advising, general university requirements, academic regulations, university procedures, learning, and other academic success strategies both on and off-campus.

Transfer students may contact the Transfer Center at (509) 335-6000, (800) 978-7252, transfer@mail.salc.wsu.edu, or at http://salc.wsu.edu/transfer.

WSU Telephone Service for Students

The Information Technology Phone Desk provides telephone service to all University residences and administrative offices. Residence Halls: All residence hall phones come with an easy to use, quality voice mail system and a data connection. While there is no monthly bill for telephones in residence halls, long distance calls are paid for by the resident. Calling cards work in residence halls or students may apply for a Personal Authorization Code (PAC) for long distance dialing. PAC numbers work from all residence halls, and most publicly available phones on campus.

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 Centranet service, the monthly fees are less expensive, before city and state tariffs.

Yakama Apartments: Yakama apartments are wired directly to WSU’s telephone switch, and service is provided by WSU. Ethernet provides high speed, uninterrupted data communications, is available at Yakama apartments. If desired, analog service is also available.

For assistance with any telephone service, contact IT’s customer support center - the Phone Desk at 335-3663 or drop by ITB 2088.

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 special 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.

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

Extended Degree Programs (EDP): EDP supports WSU colleges and departments in delivering selected degree programs and semester-based credit courses to various sites in the state of Washington and around the world. Staff provide course design and delivery, admissions and registration, and advising services. EDP enables WSU colleges to deliver bachelor’s degrees in social sciences, human development, criminal justice, business administration, and agriculture by distance learning technologies to adult learners in Washington and throughout North America and the world. Call 1-800-222-4978 or visit our web site at www.eus.wsu.edu/edp/ for more information.

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 Professional Programs (CAPPS): This division plans and conducts noncredit programs, including conferences, seminars, short courses, and workshops to sites throughout the state of Washington and beyond. CAPPS also manages the development and delivery of non-credit online certificate programs and training for individuals, businesses, and non-profit organizations. Offices are located in Pullman 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/ci/i/ 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
Students at Washington State University follow many diverse paths to complete a bachelor’s degree. Some students, however, want to complete their degrees in four years. A Four-Year Degree Agreement (FYDA) is available to any first-time freshman entering WSU who meets the necessary conditions and chooses a participating degree program. For participating students, Washington State University agrees to provide adequate advising, available courses, and options for the timely completion of the degree. Degree programs offering a Four-Year Degree Agreement are indicated by a FYDA next to the degree program sequence in this catalog. Students who are interested in the program may contact their departmental advisor.

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/.
Educational Enhancement

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, Bryan 206, phone (509) 335-2541, FAX:(509) 335-1060, e-mail INTLPROG@wsu.edu or our web site at www.ip.wsu.edu/.

International Programs/Intensive American Language Center (IALC)

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

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

Any non-native speaker of English, who is at least 18 years of age, knows the English alphabet and corresponding sounds, and has completed secondary school may attend the Intensive American Language Center. Students may enroll full- or part-time, depending on their visa status. The Language Center also negotiates special courses or package programs with domestic and foreign agencies on a contract basis. To apply or to obtain more information about the language center, contact International Programs (IALC), McAllister Hall, Room 116, phone (509) 335-6675, fax (509) 335-1141, e-mail ialc@wsu.edu, or visit our web site, http://www.ialc.wsu.edu.

Learning Enrichment Opportunities

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

For Freshmen

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

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

For Sophomores and Above and Transfer Students

Accessing Information for Research—With sophomore standing and above, students may enroll in GenEd 300, a one-credit course intended to assist them in exploring the technological resources available for conducting academic research. Transfer students, who may not be familiar with the resources of the research library, are also encouraged to enroll. This course is generally linked to a second research project-based course. Contact: University Libraries—335-2691, Holland-New Library.

Advanced Writing Tutorial—GenEd 302 can be taken concurrently with an M course or upper-division writing intensive course in the student’s major. This advanced course also employs a small-group, student-centered approach focusing on students’ discipline-specific needs. Contact: WSU Writing Programs—335-7695, 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.
Research Facilities

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. 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 a Service Center within the Geology Department which provides analytical services, primarily for geological research, but also for research in chemistry, materials science and related fields. The laboratory comprises an automated Cameca electron microprobe for quantitative elemental micro-analysis and elemental mapping, a Siemens X-ray powder diffractometer for phase identification, an automated Rigaku X-ray fluorescence sequential spectrometer and HP inductively coupled plasma mass spectrometer for major, trace and rare earth elemental analysis, and a Finnigan-MAT gas source mass spectrometer for oxygen, carbon and hydrogen isotope determinations. Most of our services and equipment are available to other departments and other institutions for a reasonable fee. For more information visit our web site at www.wsu.edu:8080/~geology/pages/services/geolab.htm, or call (509) 335-1626.

Information Technology
Information Technology (IT) is a central organization that provides services and professional expertise in support of computing, networking, voice and video communications at WSU. Many of these services are a crucial part of WSU’s research infrastructure. IT provides administrative, academic, and general purpose computing services on 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. For more information, visit http://impact.wsu.edu.

Nuclear Radiation Center

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

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

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

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

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

The NRC provides laboratory space for radiochemistry researchers and other projects and programs. A wide range of services and capabilities make the Nuclear Radiation Center ideally suited to support elemental analysis or radiation-related studies at Washington State University. Tours of the reactor facility can be arranged by calling (509) 335-7592.

Social and Economic Sciences Research Center (SESRC)

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

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

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

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

State of Washington Water Research Center

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

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

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

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

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

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

Further information regarding the program may be obtained by writing the Director, State of Washington Water Research Center, Washington State University, P.O. Box 643002, Pullman, WA 99164-3002, or by calling (509) 335-5531. Visit our web site at www.wsu.edu/swwrc.
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 1998 was 3.41. Of the 2,978 freshmen who entered in the fall semester 1998, 2,791 were enrolled in the spring of 1999, and 2,463 continued their enrollment in the fall semester 1999.

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 a regionally accredited post-secondary institution.

Transfer applicants with fewer than 27 semester (40 quarter) hours of transferable credit must also meet the admission requirements for freshmen, including meeting the current admission index (based on high school grade point average and standardized test scores) and course requirements. Students with fewer than 27 semester hours of credit should refer to the Freshman Admission section in this bulletin for details on admission requirements. In all cases, students must maintain a cumulative college grade point average of at least 2.0 in transferable work to remain eligible for admission.

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

A complete application includes the application form, an official transcript sent directly from each college or university attended showing work completed at the time of application, and a $35 nonrefundable application fee. Final and complete official transcripts must be submitted prior to the student’s initial enrollment. Students must maintain a minimum 2.0 cumulative 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.) degree at a Washington community college or the Associate of Arts - 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-division General Education Requirements for graduation. Students will also be required...
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 other collegiate institutions which are essentially equivalent in academic level and content to work offered at WSU. Toward this end, the university subscribes to the "Policy on Inter-College Transfer and Articulation Among Washington Public Colleges and Universities" endorsed by the public colleges and universities of Washington and the State Board for Community and Technical Colleges and published by the Higher Education Coordinating Board. The policy deals with the rights and responsibilities of students and the review and appeal process in transfer credit disputes.

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

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

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

Admission to WSU Spokane, WSU Tri-Cities, WSU Vancouver
The WSU branch campuses, located in Spokane, Tri-Cities, and Vancouver, offer a variety of undergraduate and graduate degree programs. All three branches have graduate education; WSU Tri-Cities and WSU Vancouver also offer 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 coursework before enrolling at a branch campus. In some instances, 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 application fee. Applications will not be considered or processed after the tenth day of classes for any semester. Final and complete transcripts must be submitted prior to the student’s initial enrollment.

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

Former Students Returning 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 December 1 for spring semester. Applications submitted after the tenth day of classes in any semester, will not be considered.

Former students returning whose previous academic record at Washington 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 students from other nations to complement its cosmopolitan student community. Applicants must submit TOEFL scores, evidence of adequate financial resources to meet the costs of the proposed study, an International Undergraduate Application for Admission, and the Educational Credential Evaluators application for secondary and post-secondary course work completed outside of the United States. Please contact the Office of Admissions at (509) 335-5586 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 University 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 admission or certification to specific programs, eligibility for admission to Washington State University does not ensure acceptance into any department or program as a certified major and degree candidate. Several academic programs including, but not necessarily limited to, architecture, business administration, communication, computer science, construction management, economics, engineering, fine arts, hotel and restaurant administration, interior design, landscape architecture, mathematics, music, nursing, psychology, pharmacy, and veterinary medicine are unable to accept all interested students. In these situations, and others which may arise in the future, the most highly qualified students will be selected up to the enrollment limits in the specific programs.

Students applying for admission to selective programs should contact the Office of Admissions regarding special requirements and application deadlines. For instance, applicants for veterinary medicine must apply by October 31; pharmacy by March 1; nursing by February 15 for fall and September 1 for spring. Deadlines are subject to change.

Selection of a Major
Students seeking a university degree must organize their efforts in a particular department or group of related courses. This is the student’s major interest area. Some academic majors have specific requirements which must be met before a student is allowed to certify a major. These requirements are listed in the departmental section of this catalog.

If an entering freshman knows with reasonable certainty what the major interest is to be, that interest may be specified on the application for admission. Students may, if they choose, defer this selection until, but not beyond, the end of the sophomore year. Each freshman is assigned an advisor in the major interested area by the Student Advising and Learning Center. This advisor can be changed if the student’s original interest should change. Students choosing not to specify a major interest area will be assigned to a general advisor.

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

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

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

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

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

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

Matriculated students currently registered may take a special examination for university credit in a course in which they are not registered. Such credits yield no 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 Full Time Schedule.

**Advance Payment on Tuition and Fees**

All undergraduate applicants, except former students returning, special students, contract students, and foreign students living outside the USA (except Canada), are required to submit a nonrefundable advance payment on tuition and fees in the amount of $50 prior to final admission. The advance payment will be requested of those applicants who are eligible for admission and should not be submitted until notice of eligibility is received by the applicant.

**Graduate Admission Requirements**

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

**Estimated 2000-2001 Undergraduate Yearly Expenses**

<table>
<thead>
<tr>
<th>Direct Costs</th>
<th>Resident</th>
<th>Nonresident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>$3,658</td>
<td>$10,574</td>
</tr>
<tr>
<td>Room and Board</td>
<td>5,598</td>
<td>5,598</td>
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<tr>
<td>Indirect Costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Books/Required Fees</td>
<td>924</td>
<td>924</td>
</tr>
<tr>
<td>Transportation and Miscellaneous</td>
<td>3,114</td>
<td>3,114</td>
</tr>
<tr>
<td>Totals</td>
<td>$13,294</td>
<td>$20,210</td>
</tr>
</tbody>
</table>

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

**Other Costs**

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

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

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

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

**Student Financial Assistance/Scholarships**

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

Students wishing to apply for any of the above aid programs at WSU must submit the Free Application for Federal Student Aid (FAFSA). These applications are available from all colleges and universities, public high schools, public libraries, and on the Web at www.fafsa.ed.gov. Be sure to list WSU as a school to receive your data. Our Federal School Code is 003800. Your application must be received by the Federal Processing Center by March 1 to receive priority processing. Please allow 7-10 days for mail time. If you miss the priority deadline, we still encourage you to apply as soon as possible.

After the March 1 deadline, processing and awarding is done on a date-received basis. Loans are available to all students. Questions should be directed to the Office of Student Financial Aid, Lighty Student Services Building, Room 380, P. O. Box 641068, Pullman WA 99164-1068, (509) 335-9711, FAX (509) 335-1385, E-mail: osfa@mail.wsu.edu, and on the Web at: http://faoservr.finaid.wsu.edu.

A wide variety of scholarships are available to new and continuing students. These opportunities are available through the university-wide application, the student’s academic college or department, and through outside scholarship donors. Application requirements and due dates vary, therefore questions should be directed to the Office of Scholarship Services, Lighty Student Services Building, Room 380 H, P. O. Box 641069, Pullman WA 99164-1069, (509) 335-1059, FAX (509) 335-6831, E-mail osfa@mail.wsu.edu and on the Web at: http://faoservr.finaid.wsu.edu/finscol.

**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 part-time enrollment is considered to be 5-9 credit hours. Certain financial aid programs and policies such as State Need Grant, State Work-Study, and Tuition and Fee Waivers require a student to be enrolled full-time.

In order to maintain financial aid eligibility, students must meet Satisfactory Academic Progress requirements and cumulative grade point average (GPA). The complete SAP policy regarding credit hour completion, GPA, and degree completion time frame, is available at faoservr.finaid.wsu.edu and the WSU Time Schedule each semester.

**Loan Deferments:** Deferments on Perkins Loans and Federal Family Education Loans are granted only at the time of origination of the loan, and the loan must be 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.

**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 form. The instructor’s signature is required for auditing and cannot be obtained prior to the first day of classes.

Waiver of Fees for WSU Staff/Faculty

A fee waiver option is available to full-time classified staff, faculty, and exempt employees who wish to enroll for up to 6 credits per semester or 4 credits in summer session. Employees enrolling for more than the credit limit pay full fees based on residency status for all credits over the limit. Qualified personnel who wish to enroll under this program must follow regular admission procedures and present a completed staff/faculty registration authorization form at the time of enrollment. Complete information on this fee waiver program listed in the 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 or higher education institutions who have been certified as eligible. The state employee must be admitted to the university and submit an approved tuition waiver request form to the Registrar’s Office five working days before the beginning of each semester. Participants will be assessed a $5 nonrefundable fee and are subject to the same 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.
Housing

Twenty 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-four (Inter)National Fraternities and 15 (Inter)National Sororities currently maintain chapters ranging in size from 40 to 110 people. Most sororities and fraternities maintain chapter houses. Facilities for physically challenged students are also provided.

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

**Housing Regulations**

All single undergraduate freshmen under 20 years of age are required to live in organized living groups which are officially recognized by the university (residence halls, fraternities, and sororities) unless they are residing with parents or legal guardians. Exemptions are granted when students demonstrate to Student Affairs that (1) they have attended an institution of higher education as regularly enrolled students for at least two regular semesters or three regular quarters (30 semester hours), (2) they are living with immediate family in a family situation (mother and/or father, legal guardian, married brother or sister, aunt or uncle, 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 2000-2001 academic year is $4,826. This amount is to be paid prior to registration or on an arranged installment basis. A security deposit and a signed housing and dining contract are required before space can be reserved.

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

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

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

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

**Family/Graduate Student Housing**

The university maintains 595 unfurnished apartments (one-, two-, and three-bedroom) for families and 40 furnished, studio apartments for unmarried, graduate students. Furniture may be rented when available through the furniture rental program. Apartments are assigned from a waiting list based on the date the completed application and $60 refundable deposit are received. Units for use by handicapped students are available on a limited basis. Information and applications may be requested by calling Housing Reservations at (509) 335-4577. Written requests may be mailed to: Housing Reservations, WSU Housing Services, P.O. Box 41726, Pullman, WA 99164-1726.

**Single Student Apartments**

The university operates 316 apartments that are available to unmarried students desiring apartment-type living. Sophomores and above are eligible for this type of housing. Apartments are rented only to 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 2000-2001 REGISTRATION FEES

<table>
<thead>
<tr>
<th>FULL-TIME FEES</th>
<th>Undergraduate</th>
<th>Graduate</th>
<th>DVM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident (10-18)</td>
<td>$1,829.00</td>
<td>$2,830.00</td>
<td>$4,630.00</td>
</tr>
<tr>
<td>Resident (19 hrs and above)</td>
<td>1,829.00+</td>
<td>2,830.00+</td>
<td>4,630.00+</td>
</tr>
<tr>
<td>Resident-WAMI</td>
<td>168.00/cr</td>
<td>268.00/cr</td>
<td>448.00/cr</td>
</tr>
<tr>
<td>Nonresident (10-18 hrs)</td>
<td>5,287.00</td>
<td>6,936.00</td>
<td>11,480.00</td>
</tr>
<tr>
<td>Nonresident (19 hrs and above)</td>
<td>5,287.00+</td>
<td>6,936.00+</td>
<td>11,480.00+</td>
</tr>
</tbody>
</table>

PART-TIME FEES per credit hour

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

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>DVM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>$183.00</td>
<td>$283.00</td>
</tr>
<tr>
<td>Nonresident</td>
<td>529.00</td>
<td>694.00</td>
</tr>
</tbody>
</table>

1 IMPORTANT NOTE: The credit hours listed in this table are for fee purposes only. Full-time enrollment for academic purposes (including financial aid, private health insurance, etc.) is 12 graded credit hours per semester. Math 101 does not count. Tuition for students enrolled in 10-18 credit hours is capped at $1,829.00. Students enrolling in more than 18 credit hours pay an additional $183.00 per credit hour.

ADVANCE PAYMENT (See page 15) $ 50.00

SPECIAL REGISTRATION FEES 1999-2000

| High School Cooperative Program | $249.00 |
| V M 601P and 602P | 2,147.00 |
| Graduate Leave Status | 25.00 |
| Auditing a Course | $ 5.00 |
| (does not apply to full-fee-paying students) | |
| Challenging a Course | 56.00 |
| (See Rule 15.) | |
| **Consult Time Schedule for additional fees related to specific courses.** |

OTHER FEES AND CHARGES

Adding a course

| charge for each course added after the 30th day or dropped after 10th day of semester | $ 5.00 |
| Admission application, undergraduate (nonrefundable) | 35.00 |
| Basic Skills Proficiency Test | 35.00 |
| Copyright | 45.00 |
| Dishonored checks, service charge | 15.00 |
| Entrance qualifying graduates of unaccredited high schools test | 10.00 |
| Foreign language reading examination | 10.00 |
| Foreign Student Orientation (required of all new foreign students) | 25.00 |

Graduate School application | 35.00 |
Graduation application, bachelor’s degree | 30.85 |
Graduation application, master’s and doctor’s degrees | 50.30 |
Cougar card, charge for replacement | 5.00 |
Late payment after fifth week of semester | 50.00 |
Late registration on or before 10th day of semester | 25.00 |
Late registration after 10th day of semester | 100.00 |
Medical expense insurance (estimated annual cost) (optional for all but foreign students) | 375.00 |
Microfiling (applicable to PhD and EdD degree candidates only) | 60.00 |
Placement Bureau Credential Service (fee assessed after graduation for each set of credentials) | 3.00 |
Re-enrollment fee (charged to students who pay tuition and fees after disenrollment for nonpayment) | 100.00 |
Replacement Diploma | 50.00 |
Sponsored Foreign Student Administrative Charge (each term) | 225.00 |
Sports Pass (optional) | 70.00 |
Fall and Spring Semester All-Sports Pass | 60.00 |
Fall Semester Sports Pass | 35.00 |
Spring Semester Sports Pass | 35.00 |
Student Petitions for Exceptions to Academic Calendar Deadlines | 10.00 |
WSU Health and Wellness Services Fee (per semester) | 67.89 |
Teacher’s Statutory Certification | 22.00 |
Transcript (per copy) | 3.95 |
Regular | 10.00 |
Emergency/24 hrs and FAX | 1.00 |
Veterinary Medicine application | 25.00 |
Washington Student Lobby (optional) | 1.00 |

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

Resident Status

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

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

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

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.

Additional information about residency requirements, and the application for change of status, can be found at website www.wsu.edu.

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 Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2</td>
<td>80% refund</td>
</tr>
<tr>
<td>Week 3</td>
<td>80% refund</td>
</tr>
<tr>
<td>Week 4</td>
<td>70% refund</td>
</tr>
<tr>
<td>Week 5</td>
<td>60% refund</td>
</tr>
<tr>
<td>Week 6</td>
<td>60% refund</td>
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<tr>
<td>Week 7</td>
<td>50% refund</td>
</tr>
<tr>
<td>Week 8</td>
<td>50% refund</td>
</tr>
<tr>
<td>Week 9</td>
<td>40% refund</td>
</tr>
<tr>
<td>Week 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, on-going research programs, and outreach programs of cooperative extension. All of these contribute to the development of Washington’s human and natural resources.

The college’s 11 teaching departments offer approximately 30 majors that prepare professionals for careers in food production, processing, and distribution and in areas of individual and family health and well-being. Students receive a solid base in science and a technological grounding that enables them to remain abreast of the dynamic fields of agricultural, human, and natural resource sciences. Study programs also help prepare graduates to live and work in our environmentally conscious and globally focused economy and society.

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

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

Admission

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

Transfer Students

Most transfer students who have completed one year in another college or university ordinarily will have no difficulty in completing the requirements for one of the bachelor’s degrees in three additional years. Some students who have completed two years before transferring may have some difficulty in completing requirements in two additional years because of required courses and course sequences. To avoid this difficulty, students enrolled in other colleges or universities but planning to transfer to the College of Agriculture and Home Economics at Washington State University should concentrate as much as possible on general education and departmental requirements normally scheduled during the freshman and sophomore years, with particular attention to those subjects required for the intended majors. Students should also contact a College of Agriculture and Home Economics 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

Degree Department

Bachelor of Science in Agriculture

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

Bachelor of Science

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

Bachelor of Landscape Architecture

Landscape Architecture Horticulture and Landscape Architecture

Master of Arts

Agribusiness Agricultural Economics
Agricultural Economics Agricultural Economics

Master of Regional Planning

Regional Planning Environmental Science and Regional Planning
### COLLEGE OF BUSINESS AND ECONOMICS

Glenn L. Johnson, Interim Dean

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

**Vision:**

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

**Mission:**

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

**Goals:**

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

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

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

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

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

**Areas of Study**

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

| Accounting | Human Resources/Personnel |
| Business Administration | International Business |
| Business Economics | Management |
| Business Law | Management Information Systems |
| Decision Sciences | Marketing |
| Entrepreneurship | Real Estate |
| Finance | Risk Management and Insurance |
| General Business | |

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
- International Economic Development

### Master of Science

| Animal Sciences | Animal Sciences |
| Crop Science | Crop and Soil Sciences |
| Entomology | Entomology |
| Food Science | Food Science and Human Nutrition |
| Genetics and Cell Biology | Genetics and Cell Biology |
| Horticulture | Horticulture and Landscape Architecture |
| Landscape Architecture | Horticulture and Landscape Architecture |
| Natural Resource Sciences | Natural Resource Sciences |
| Natural Resources | Natural Resource Sciences |
| Nutrition | Nutrition |
| Plant Pathology | Plant Pathology |
| Plant Physiology | Plant Physiology |
| Soil Science | Crop and Soil Sciences |

### Doctor of Philosophy

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

### Home Economics Degrees

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts</td>
<td>Apparel, Merchandising, and Textiles (including dietetics and research)</td>
</tr>
<tr>
<td>Human Development</td>
<td>Human Development (including human development, family, family and consumer science education, and preschool-third grade education)</td>
</tr>
<tr>
<td>Interior Design</td>
<td>Apparel, Merchandising and Interior Design</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bachelor of Science</th>
<th>Human Nutrition and Foods (including dietetics and research)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Science</td>
<td>Food Science and Human Nutrition</td>
</tr>
<tr>
<td>Human Nutrition</td>
<td>Food Science and Human Nutrition</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Master of Arts</th>
<th>Apparel, Merchandising, and Textiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Development</td>
<td>Human Development</td>
</tr>
<tr>
<td>Interior Design</td>
<td>Apparel, Merchandising and Interior Design</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Master of Science</th>
<th>Food Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Nutrition</td>
<td>Food Science and Human Nutrition</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Doctor of Philosophy</th>
<th>Nutrition</th>
</tr>
</thead>
</table>
Graduate work may be taken in business administration, economics, and accounting leading to Master and Doctor of Philosophy degrees.

Minors

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

Admission

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

- Bachelor of Arts
- Master of Business Administration
- Master of Technology Management
- Doctor of Philosophy
- Bachelor of Arts
- Master of Business Administration
- Bachelor of Technology Management
- Bachelor of Arts
- Master of Technology Management
- Bachelor of Technology Management
- Bachelor of Arts
- Master of Business Administration
- Master of Technology Management
- Bachelor of Arts
- Master of Business Administration
- Master of Technology Management
- Bachelor of Arts
- Master of Business Administration
- Master of Technology Management
- Bachelor of Arts
- Master of Business Administration
- Master of Technology Management
- Bachelor of Arts
- Master of Business Administration
- Master of Technology Management
- Bachelor of Arts
- Master of Business Administration
- Master of Technology Management

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</td>
<td>Kinesiology and Leisure Studies</td>
</tr>
<tr>
<td>Bachelor of Arts in Management</td>
<td>Educational Leadership and Counseling Psychology</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</td>
</tr>
<tr>
<td></td>
<td>Counseling</td>
</tr>
<tr>
<td>Master of Arts in Recreation and</td>
<td>Curriculum and Instruction</td>
</tr>
<tr>
<td>Leisure Studies</td>
<td>Diverse Learners</td>
</tr>
<tr>
<td>Master of Arts in Education</td>
<td>Educational Psychology</td>
</tr>
<tr>
<td></td>
<td>Elementary Education</td>
</tr>
<tr>
<td>Master in Teaching</td>
<td>Literacy</td>
</tr>
<tr>
<td>Master of Science in Kinesiology</td>
<td>Secondary Education</td>
</tr>
</tbody>
</table>

Doctor of Education

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department or Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>Counseling</td>
</tr>
<tr>
<td>Curriculum and Instruction</td>
<td>Educational Psychology</td>
</tr>
<tr>
<td>Diverse Learners</td>
<td>Elementary Education</td>
</tr>
<tr>
<td>Educational Psychology</td>
<td>Literacy</td>
</tr>
<tr>
<td>Elementary Education</td>
<td>Secondary Education</td>
</tr>
</tbody>
</table>

Doctor of Philosophy

<table>
<thead>
<tr>
<th>Degree (Education)</th>
<th>Department or Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>Counseling</td>
</tr>
<tr>
<td>Counseling Psychology</td>
<td>Educational Psychology</td>
</tr>
<tr>
<td>Teaching and Learning</td>
<td></td>
</tr>
</tbody>
</table>

COLLEGE OF ENGINEERING AND ARCHITECTURE

Anjan Bose, Dean

The College of Engineering and Architecture provides instruction, research, and public service in engineering, architecture, construction management, computer science, and materials science. Academic units in the college offering engineering degree programs are chemical engineering, civil and environmental engineering, electrical engineering and computer science, and mechanical and materials engineering. The biological systems engineering degree is offered by the Department of Biological Systems Engineering, which is administratively housed in the College of Agriculture and Home Economics. The School of Architecture and Construction Management offers degrees in architecture and construction management. The PhD in Materials Science is offered through an interdisciplinary program through the College of Engineering and Architecture and the College of Sciences.

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

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

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

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

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

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>
<tr>
<td>Electrical Engineering</td>
<td>Manufacturing Engineering (Vancouver)</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td></td>
</tr>
</tbody>
</table>
Master of Science
- 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 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 after their first graduating classes.

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

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

Computer Science

Computer science has its principal bases in the engineering sciences and mathematics. Computer science encompasses the theory and techniques by which information is encoded, stored, communicated, transformed, and analyzed. It deals particularly with the theory of algorithms, the step-by-step procedures for solving a problem or accomplishing some goal. Students study computer software and hardware systems for efficient solution of practical problems. The Bachelor of Science program in computer science, offered through the School of Electrical Engineering and Computer Science, is accredited by the Computing Sciences Accreditation Board (CSAB). Curricular specializations available include artificial intelligence, communications, computer engineering, computer graphics, mathematics, management information systems, scientific computation, and software engineering. Students use WSU’s central computers and a variety of scientific workstations, graphic workstations, and microcomputer laboratories, all of which are networked to each other and to national networks.

The Bachelor of Arts in Computer Science emphasizes breadth by requiring expertise in computer science and another area. The latter is accomplished through the requirements of a formal minor. The areas of specialization within computer science are the same as those listed for the Bachelor of Science degree. This new program will be submitted for accreditation after the first graduates have been produced.

Admission

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

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

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

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

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

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

The period of study for the Doctor of Philosophy degree is at least three years (six semesters) beyond the baccalaureate degree. For students without a master’s degree, at least two of these three years shall be in residence at Washington State University (enrolled full time and present on a campus where a given program has received approval to grant residency). For students with a master’s degree, at least one of these three years shall be in residence at Washington State University (enrolled full time and present on a campus where a given program has received approval to grant residency).
The period of study for the Doctor of Education degree is at least three years (six semesters) beyond the baccalaureate degree. At least two of these three years shall be in residence at Washington State University, including a minimum of four semesters, with at least one summer session and one semester being contiguous, when the student is enrolled full-time and present on the Pullman campus. Full-time enrollment for four summer sessions may be substituted for two academic year semesters. Summer session cannot be substituted for the semester contiguous with a summer session requirement for the doctoral degree.

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

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

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

The graduate faculty consists of the President of Washington State University, the deans of the various academic units, the chairs of the academic departments and programs in which advanced degree programs are offered, and selected other members 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 resource sciences, food science, genetics and cell biology, geology, history, horticulture, individual interdisciplinary studies, materials science, mathematics, mechanical engineering, microbiology, neuroscience, nutrition, pharmacology and toxicology, physics, plant pathology, plant physiology, political science, psychology, sociology, soil science, veterinary science, and zoology.

Doctor of Arts

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

Master of Arts and Master of Science

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

Other Degrees

Courses of study leading to the Doctor of Education and Master of Education degrees are offered in the Department of Educational Leadership and Counseling Psychology and the Department of Teaching and Learning. A student may undertake a program for the degree of Master of Accounting, Master of Business Administration, Master of Engineering Management, Master of Fine Arts, Master of Health Policy and Administration, Master of Nursing, Master of Public Affairs, Master of Regional Planning, Master of Technology Management, or Master in Teaching.

A program of study leading to the degree of Master of Arts in Teaching (MAT) is offered in theatre arts and drama.

Admission

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

Students who contemplate entering the Graduate School should obtain application forms from the Office of the Graduate School. For admission to the Graduate School, Washington State University requires official transcripts from each of the following: (1) colleges or universities from which any degrees have been granted or are expected and those transcripts which show the last 60 graded semester or 90 graded quarter hours of undergraduate work taken; (2) colleges or universities showing graded graduate-level (including doctoral) course work taken after the bachelor’s degree.

Note: Students intending to request transfer credit for their Program of Study will need to submit official transcripts from colleges or universities showing such credit. Departments and programs are free to request additional transcripts as deemed appropriate. Official transcripts are those mailed directly to the Graduate School from the registrar of the institution attended. One set is to be sent to the Graduate School and a second set is to be sent to the chair of the department or program concerned. Complete credentials should be on file at least one month before registration. Transcripts from other institutions cannot be returned. Records of previous work at Washington State University need not be submitted.

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

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

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

Transfer of Graduate Credits

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

Summer Sessions

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

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

Graduate Work Through Continuing Education

Credit earned in graduate-level courses taken through the WSU Office of Extended University Services will be accepted on graduate student programs without limit, subject only to customary admission and program approvals.

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

Seniors who have at least a 3.00 grade point average in the last 60 hours of their undergraduate work at Washington State University may register for up to 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 considered by the Graduate School to be in good standing for up to four consecutive years. Graduate leave status enrollees who wish to enroll for credit must give the Graduate School one month notice prior to the enrollment date. Graduate students who fail to maintain continuous enrollment will be dropped from the university.

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

Registration Policy for Graduate Students Completing Degree Requirements

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

Scholarship Standards

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

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

Requirements for a Graduate Degree

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

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

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

Time Limit

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

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

Assistantships, Fellowships, and Scholarships

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

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

Washington State University subscribes to the following resolution of the Council of Graduate Schools in the United States regarding scholars, fellows, trainees, and graduate assistants.

“Acceptance of an offer of financial support (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by a prospective or enrolled graduate student completes an agreement that both student and graduate school expect to honor. In that context, conditions affecting such offers and their acceptance must be defined carefully and understood by all parties.

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

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

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

Washington State University’s graduate training program in clinical psychology is accredited by the American Psychological Association. The speech-language-pathology and audiology programs are accredited by the State Board of Education and the American Speech-Language-Hearing Association.
Educational Standards Board. The Music Program is a full member of the National 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, general studies (classics, electronic media and communication, humanities, liberal arts, linguistics, religious studies, social science), Latin American studies, Russian area studies, Scandinavian area studies, social studies, social work, and women's studies.

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

Degrees

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

Degree | Department or Area
--- | ---
Bachelor of Arts | American Studies
 | Anthropology
 | Asian Studies
 | Communication
 | Comparative American Cultures
 | Criminal Justice
 | English
 | Fine Arts
 | Foreign Languages and Literatures
 | General Studies
 | humanities
 | social sciences
 | History
 | Liberal Arts
 | Music
 | Philosophy
 | Political Science
 | Social Studies
 | Sociology
 | Speech and Hearing Sciences
 | Theatre Arts and Drama
 | Women's Studies
Bachelor of Fine Arts | Fine Arts
Bachelor of Music | Music
Bachelor of Science | Psychology
Master of Arts | American Studies
 | Anthropology
 | Communication

Criminal Justice
 | English
 | Foreign Languages and Literatures
 | History
 | Music
 | Political Science
 | Sociology
 | Speech and Hearing Sciences
 | Theatre Arts and Drama*
Master of Arts in Teaching (MAT)
 | Fine Arts
Master of Fine Arts
 | Psychology
Master of Science
 | American Studies
 | Anthropology
 | English
 | History
 | Political Science
 | Psychology
 | Sociology

* WSU currently is not accepting applications to these programs.

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, 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 fall 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-based, population focused 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. For further information, visit www.icne.wsu.edu.

Degrees

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

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

COLLEGE OF PHARMACY

William E. Fassett, Dean

Admission

The College of Pharmacy offers a course of study leading to a Doctor of Pharmacy (Pharm.D.) degree. The Pharm.D. schedule of studies involves a six year commitment, consisting of two pre-pharmacy years, and four professional years. The 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, Geona-lytical Laboratory, Ownbey Herbarium, Conner Zoological Museum, Hudson Biological Reserve, and Meyer’s Point Biological Study Site are all facilities within the college. A strong technical services unit provides instrument shops, electronics construction and repair, graphics, and glassblowing. The college shares support and use of several university-wide facilities such as the Laboratories for Bioanalysis and Biotechnology, and the Environmental Research Center.

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

Admission

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

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


Requirements for Graduation

Graduation requirements for a bachelor’s degree include the university General Education Requirements plus additional College of Sciences requirements in arts and humanities, social sciences, and sciences. Refer to the graduation requirements on pages 37 and 38 of this catalog. Each academic department or program has additional graduation requirements, which are included in the departmental descriptions in this catalog.
Degrees
The College of Sciences offers programs of study leading to the following degrees:

<table>
<thead>
<tr>
<th>Degree</th>
<th>Department or Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science</td>
<td>Biology, Chemistry, Environmental Science, Geology, Genetics and Cell Biology, Zoology, Environmental Science, Genetics and Cell Biology, Environmental and Natural Resource Sciences, Geology, Materials Science, Mathematics, Microbiology, Physics, Plant Physiology, Zoology</td>
</tr>
<tr>
<td>Master of Arts</td>
<td>Chemistry, Botany, Mathematics, Physics, Zoology</td>
</tr>
<tr>
<td>Master of Science</td>
<td>Biochemistry, Botany, Chemistry, Genetics and Cell Biology, Environmental and Natural Resource Sciences, Geology, Materials Science, Mathematics, Microbiology, Physics, Plant Physiology, Zoology</td>
</tr>
<tr>
<td>Doctor of Arts</td>
<td>Biochemistry, Botany, Chemistry, Genetics and Cell Biology, Environmental and Natural Resource Sciences, Geology, Materials Science, Mathematics, Microbiology, Physics, Plant Physiology, Zoology</td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Biochemistry, Botany, Chemistry, 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, US Public Health Service, federal and state disease regulatory programs, industry, teaching, research, and military medicine. Areas studied include animal health, disease eradication, comparative pharmacology and toxicology, environmental sciences, laboratory animal medicine, and comparative biomedical studies to help resolve human disease problems.

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

The College of Veterinary Medicine is accredited by the American Veterinary Medical Association.

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

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

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

Courses designed to fit these requirements are offered by Washington State, and the number of students admitted to 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. A student seeking to enter the four-year program must fill out a uniform undergraduate application for admission to WSU. Successful applicants who are not currently enrolled at WSU will be asked to fill out a uniform undergraduate application for admission to WSU. Unsuccessful applicants who wish to be considered the next year must present new applications.

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

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

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

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

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

WASHINGTON STATE UNIVERSITY AT SPOKANE

William H. Gray, Campus Executive Officer and Dean

Washington State University at Spokane is Spokane’s research university, offering graduate programs and upper-division coursework, research, and service programs that give students hands-on opportunities for academic growth and professional excellence in the context of an urban land-grant campus. Now occupying five floors of its downtown headquarters, the university is building out the 50-acre Riverpoint campus adjacent to downtown, which has been designated a “magnet campus” by the Washington state Higher Education Coordinating Board. The Spokane Intercolligiate Research and Technology Institute (SIRTI) is also located at Riverpoint, and houses WSU courses in computer science, electrical engineering, engineering management, and a new baccalaureate completion program in computer engineering.

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

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

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

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

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 at Spokane and Eastern State Hospital. Research activities are intended to improve the care and treatment of mentally ill individuals by determining the effectiveness of new treatment methods and evaluating the impact of changes in public policy. Education and training activities are directed toward improving the quality and competence of persons providing care and treatment to mentally ill persons. Institute staff conduct research and training in a variety of settings with both providers and consumers of mental health care.

Washington State Institute for Community Oriented Policing (WSICOP), housed at WSU Spokane, is a partnership between WSU, the Washington 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.

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

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

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

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, speech and hearing sciences, and technology management. Course work and internships for student teachers and for experienced educators seeking the superintendent’s credential, principal’s certification, and school psychology certification also are offered at WSU Spokane. The Spokane campus is the site of the final stages of professional education for all students enrolled in pharmacy, and for many students enrolled in architecture, construction management, interior design, and landscape architecture. The Doctor of Pharmacy at WSU Spokane is the only doctoral degree offered at a branch campus in the state. Course work also is available in a variety of other disciplines, including graduate certificate programs in aging and other specialty areas for professional development. Baccalaureate completion programs are under development in a number of disciplines, including computer engineering, real estate, risk management/insurance, and hotel/restaurant administration.

For details, contact:

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

Larry James, Campus Executive Officer and Dean

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

The majority of courses leading to a bachelor’s degree in chemical engineering can be taken, as well as courses in mathematics, statistics, counseling psychology, 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 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 Electronic Materials Laboratory, investigating solar cell production; and eddy current research, applying numerical modeling for non-destructive testing applications. The administrative offices for the United States Transuranium and Uranium Registries are also housed on this campus. In addition, WSU Tri-Cities provides cooperative research and internship opportunities with the U.S. Department of Energy and Hanford contractors who afford exceptional opportunities for research, providing expertise, facilities, and equipment not available at most universities.

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

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

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

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

WASHINGTON STATE UNIVERSITY AT VANCOUVER

Harold Dengerink, Campus Executive Officer and Dean

Located on 351 scenic acres about seven miles north of the Portland-Vancouver metropolitan area, Washington State University Vancouver provides quality education to residents of local southwest Washington and Oregon communities. With a student population of less than 2,000, WSU Vancouver offers a small college atmosphere with public university access. Since its establishment in 1989, WSU Vancouver has graduated more than 2,500 alumni who currently live and work in the region.

Degree Programs—Thirteen bachelor’s and seven master’s degrees are attainable through junior-, senior-, and graduate-level courses in more than 35 fields of study. Bachelor’s degrees include biology, business administration, computer science, English, environmental science, human development, humanities, manufacturing engineering, natural resource science, nursing, psychology, public affairs, and social science. Within these degree programs students may concentrate their studies in a variety of areas from anthropology to women’s studies.

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

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

Campus and Student Life—The campus features four academic buildings, as well as a bookstore, gallery, food court, and a system of biking and pedestrian trails. Facilities also include computer engineering, nursing, psychology, and science laboratories, and a library carrying more than 650 journals, a collection of 12,000 books, and access to more than 50 major bibliographic databases. A fifth academic building for engineering and life sciences is scheduled to open in Spring 2001.

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

Faculty and Research—More than 80 Ph.D. faculty provide WSU Vancou- ver with academic expertise spanning a variety of subjects. Faculty are actively involved in research in such areas as global climate change, domestic violence, eating disorders, criminal justice, child psychology, education, public affairs, and genetics among others. Quality instruction and an emphasis on individual attention also characterize the WSU Vancouver student experience, with a faculty-student ratio of approximately 14 to one.

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

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

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

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

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

For more information contact:
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 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 faaservr.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.


Graduate students holding F-1 visas: The Immigration and Naturalization Service requires that nonimmigrant F-1 students be enrolled in a full course of study for the entire semester. (Twelve semester hours for undergraduate students and 10 semester hours for graduate students per semester excluding summer session.) Detailed 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.

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

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

Computer Literacy
Washington State University offers a wide variety of courses, small group tutorials, instructional mini-seminars, and help sessions for students who feel they need assistance in acquiring computer skills. Students are encouraged to bring to campus skills in word processing, use of spread sheets and data bases, some ability to search the world wide web, and a preliminary understanding of information retrieval library systems.

Course Prerequisites
When applicable, prerequisites are listed in this catalog with the specific course prefix and number, preceded by the abbreviation: prereq. Prerequisites may be levels of competence, or courses which a student must have completed, or the standing a student must have achieved before enrolling for a specific course. For example, Calculus (Math 171) requires a 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 Biol 103.) Concurrent enrollment is indicated by the symbol c/. Prereqs may include a level of expertise or a specified major, e.g., students may not enroll in Spanish 324 without first being fluent in Spanish, or students may not enroll in an advanced seminar 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 requirements for graduation, including the 300-400-level requirements, University Writing Portfolio, the minimum hours for the first degree, as well as the requirements of the General Education Program. See Appendix, Rule 54.
Grading System

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

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

S (Satisfactory)—no grade points. (Credit not calculated in g.p.a.) Grade given upon satisfactory completion of courses numbered 499, 600, 700, 702, 800, Special Examinations (Rule 15), and other courses duly authorized for S, F grading by the Faculty Senate. (Courses approved for S, F grading are footnoted in the Time Schedule.) A, S, or F grades only are used for physical education activity courses. Courses approved for S, F grading may also be graded S at semester indicating satisfactory progress.

P (Passing)—no grade points. (Credit not calculated in g.p.a.) A satisfactory grade for a course taken under the pass, fail grading option. (See below.) Instructors will turn in regular letter grades for all students enrolled in courses under the pass, fail option, but grades will appear on the student’s permanent record as P (Passing) or F (Failing).

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

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

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

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

Grade Point Average

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

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

Credit hours attempted (9) divided into total grade points earned (27) = g.p.a. (3.00)

Total hours earned: 15

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

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

Grade Reports

Midsemester grades are issued to freshmen students with fewer than 24 semester hours of credit and are made available over the web. 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.

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

Repetition of Courses

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

Students may repeat courses in which they have received a grade of C- or below 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 approval is required for undergraduates. Information indicating which students are enrolled on a pass, fail basis will not appear on class lists transmitted to instructors. Instructors turn in regular letter grades for all students, and the Registrar’s Office will change all grades of A through D to P for those enrolled pass, fail. The P grades earned by pass, fail enrollees will not be included in computing the g.p.a.; however, F grades earned by pass, fail enrollees will be included in g.p.a. computations. Courses approved...
proved for S, F grading (Rule 90f) are excluded from the pass, fail option. Courses approved for S, F grading are footnoted in the Time Schedule.

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

Undergraduate Pass, Fail Option: A total of six courses may be taken on a pass, fail basis by students initiating and completing work for a baccalaureate degree at Washington State University. No courses designated as meeting General Education Requirements for Graduation may be taken 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>1-44 credits</td>
<td>six courses</td>
</tr>
<tr>
<td>45-59 credits</td>
<td>five courses</td>
</tr>
<tr>
<td>60-74 credits</td>
<td>four courses</td>
</tr>
<tr>
<td>75-89 credits</td>
<td>three courses</td>
</tr>
<tr>
<td>90 and above credits</td>
<td>two courses</td>
</tr>
</tbody>
</table>

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

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

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

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

Honors

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

(a) By achieving a grade point average of 3.75 in at least 9 graded hours in a single term at Washington State University.
(b) By achieving a cumulative grade point average of 3.50 based on at least 15 cumulative hours of graded work at Washington State University.

Graduation Honors. Candidates for baccalaureate degrees who have completed at least 30 hours of graded work (grades in which grade points are awarded) at Washington State University will graduate summa cum laude if the cumulative grade point average for work completed at Washington State University is 3.90 or better and will graduate magna cum laude if cumulative grade point average is 3.7 to 3.89 and will graduate cum laude if the minimum cumulative grade point average is 3.50 but less than 3.70. The appropriate Latin phrase will be printed on the diploma and on the final transcript. Qualified students electing to participate in the Honors College who complete 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 notification 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 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 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 de-
partment 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 bachelor’s or DVM degree should be made at the Registrar’s Office near the end of the junior year and at least 60 days prior to the expected graduation date. A graduation application must be on file in the Registrar’s Office before a student can graduate. A graduation fee must be paid at the time of application.

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

A student desiring a second baccalaureate’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 may 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 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 degree programs. When this occurs, further admission into the degree program will be frozen effective with the official action dropping the degree, and every effort will be made to allow currently enrolled majors and graduate degree candidates to complete their degrees within a reasonable period of time. To facilitate this process, department and program chairs (or the appropriate dean) have the obligation to provide for the individual needs of these students: e.g., (1) students may be encouraged to complete their requirements in similar or related degree tracks; (2) although University Requirements for Graduation and the minimum total hours for the degree may never be waived, the student’s major department may waive or substitute departmental degree requirements (approval of the Graduate School required for graduate students); (3) undergraduate students may be allowed to complete remaining requirements at another institution under Rule 114(a) 5. Graduate students may be allowed to take courses or conduct research at another institution when approved by the student’s graduate committee and the Graduate School. In all cases, all financial obligations are the responsibility of the individual student involved, except as otherwise noted in this catalog or the Graduate Studies Bulletin.

University Requirements for Graduation

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

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

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

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

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

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

**Requirements for Graduation**

1. **Hours and grade points** - a minimum of 120 semester hours with a grade point average of 2.0 or better.

2. **Upper-Division (300-400-level)** - a minimum of 40 semester hours.

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

**College of Liberal Arts**  
**College of Sciences**

**Graduation Requirements**

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

**Arts and Humanities [H][G], Social Sciences [S][K], and Intercultural Studies [I][G][K]**—6 credits outside the student’s major department or program in addition to the General Education Program requirement.

**Sciences [B][P][Q]**—2 credits (including a 1-credit laboratory [L]) outside the student's major department or program in addition to the General Education Program requirement.

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

**Transfer students** are responsible for meeting the above College of Liberal Arts and College of Sciences requirements. This includes those students holding the approved Associate of Arts or Associate of Science degree from Washington community colleges or Associate of Arts—Oregon Transfer degree from an Oregon community college.
WSU’s General Education requirements are designed to complement and support students’ courses of study in the major field or career area. They are also aimed at values apart from the career: realizing potentials in the individual, preparation for membership in one’s community, and citizenship. WSU faculty have identified the following specific learning goals for students, which are infused into the program and curriculum:

1. Reason critically;
2. Conduct self-directed or independent learning projects;
3. Understand the roles of normative views and values, including ethics and aesthetics;
4. Communicate conclusions, interpretations, and implications clearly, concisely and effectively, both orally and in writing;
5. Acquire and assimilate knowledge in a variety of modes and contexts and recognize diverse disciplinary viewpoints and methods;
6. Understand the historical development of human knowledge and cultures, including both Western and non-Western civilizations.

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

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

### The Structure of the General Education Program

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

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

**Tier II:** 22 semester credit hours
- Communication Proficiency [W], [C] — 3
- Arts and Humanities¹ [H], [G] — 3
- Social Sciences² [S], [K] — 3
- Arts and Humanities/Social Sciences³ [H], [G], [S], [K] — 3
- Intercultural Studies [I], [G], [K] — 3
- Sciences³ [B], [P] — 7

**Tier III:** 3 semester credit hours
- American Diversity course [D] — 3
- Total hours — 40

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

### The Tiers in the General Education Program

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

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

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

**Tier III** provides the final component of sequential study in general education. Tier III courses are 400-level and have as a general prerequisite 60 hours of course work; there may be additional prerequisites for specific courses. Tier III courses represent an opportunity for students to integrate portions of their previous academic experience or to pursue interests at a more advanced level. They are intended to engage students in significant writing and research projects outside of their majors.

### General Education and Graduation Requirements

Students are required to earn a minimum of 120 credits, with a grade point average of 2.0 or better. A minimum of 40 credits must be taken at the 300-400-level. Other specific requirements are listed below. Please note: Honors students complete Honors Requirements in place of General Education Requirements.

#### 1. American Diversity [D]
- The American Diversity requirement will be met by passing a designated [D] course which also meet a GER requirement in another area at the same time. Note: This requirement is in effect for students beginning post-secondary enrollment starting fall 2000.

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

#### 3. Communication Proficiency [C]
- 6 hours including at least 3 in written communication [W] at Tier I, and 3 of [W] or [C] at Tier II.
- Prior to enrollment in freshman writing courses, all students must take a Writing Placement Examination for the purpose of placement in appropriate writing courses. These placements are mandatory. The Writing Placement Examination is administered during summer New Student Orientation, at the beginning of fall semester, and prior to spring registration. Examination results will place students in the core writing course, Engl 101, Introductory Writing (or equivalent), or in Engl 101 plus 1 hour of Engl 102, Writing Tutorial. Students whose native language is not English may be placed in Engl 105, Composition for ESL Students. In some instances, students may be exempted from Engl 101 on the basis of their performance in the Placement Examination. Questions should be directed to the WSU Writing Lab, Avery Hall, (509) 335-4072.

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4. Mathematics Proficiency [N] — This requirement can be satisfied by passing a designated course or courses in mathematics (see below), through satisfactory performance on an Advanced Placement examination, or by passing a calculus course beyond Math 171.

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

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

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

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

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

10. Tier III course — 3 hours of upper-division work. Tier III courses are 400-level and function as summations of the General Education curriculum. Please note the following:
   1. Tier III courses for General Education credit may not be taken within a student’s own major.
   2. Students may take Tier III courses only after completion of the required Tier I and II courses and after earning approximately 60 total hours.
   3. Students may select a course fitting their own interests and previous academic experience.

Total hours of General Education: 40

Courses Satisfying General Education Requirements

AMERICAN DIVERSITY

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

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>AMT 417</td>
<td>[T] Social and Psychological Aspects of Dress</td>
</tr>
<tr>
<td>Anth/W St 214</td>
<td>[S] Gender and Culture in America</td>
</tr>
<tr>
<td>CAC 111</td>
<td>[S] Introduction to Asian/Pacific American Studies</td>
</tr>
<tr>
<td>CAC 131</td>
<td>[S] Introduction to Black Studies</td>
</tr>
<tr>
<td>CAC/W St 235/Hist 205</td>
<td>[H] African American History</td>
</tr>
<tr>
<td>CAC/Engl 220</td>
<td>[H] Introduction to Multicultural Literature</td>
</tr>
<tr>
<td>CAC 254</td>
<td>[S] Comparative Latin/o/a Cultures</td>
</tr>
<tr>
<td>CAC/Hist/W St 255</td>
<td>[S] Chicana/o History</td>
</tr>
<tr>
<td>CAC 302</td>
<td>[S] Social Psychology of Prejudice</td>
</tr>
<tr>
<td>CAC 336</td>
<td>[H] African American Folklore</td>
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<tr>
<td>CAC 337</td>
<td>[S] Black Social Psychology</td>
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<tr>
<td>CAC 338</td>
<td>[H] African American Cinema</td>
</tr>
<tr>
<td>CAC/W St 372/Anth 312</td>
<td>[S] Native American Women in Traditional and Contemporary Societies</td>
</tr>
<tr>
<td>CAC 453</td>
<td>[T] Health Issues for Chicanos/as</td>
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<td>CAC 475/Hist 408</td>
<td>[T] Indians of the Northwest</td>
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<tr>
<td>Com 471/CAC 404</td>
<td>[T] Stereotypes and The Media</td>
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<tr>
<td>Hist 150</td>
<td>[S] Peoples of the United States</td>
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<tr>
<td>Hist 314/CAC 304</td>
<td>[H] American Roots: Immigration, Migration, and Ethnic Identity</td>
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<td>Hist 321</td>
<td>[H] U.S. Popular Culture, 1800-1930</td>
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<td>[H] U.S. Popular Culture Since 1930</td>
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<td>[H] History of Women in the American West</td>
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<td>[H] Philosophy and Feminism</td>
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<td>Psych 309</td>
<td>[S] Cultural Diversity in Organizations</td>
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<td>SHS 250</td>
<td>[S] Perspectives on Disability</td>
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<td>[T] Disability and Society</td>
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<td>Soc 101</td>
<td>[S] Introduction to Sociology</td>
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<td>Soc/W St 150</td>
<td>[S] Marital and Sexual Life Styles</td>
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<td>Soc 340</td>
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<td>Soc/W St 351</td>
<td>[S] The Family</td>
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<td>[S] Juvenile Delinquency</td>
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<td>[S] Sociology of Gender</td>
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<tr>
<td>W St/Soc 302</td>
<td>[S] Contemporary Masculinity and Men's Issues</td>
</tr>
<tr>
<td>W St/Soc 484</td>
<td>[S] Lesbian and Gay Studies</td>
</tr>
</tbody>
</table>

General Rules

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

Transfer Students who have completed an approved Associate of Arts (AA) or Associate of Science (AS) degree at a Washington community college or an Associate of Arts—Oregon Transfer Degree from an Oregon community college, including a course pattern which approximates the General Education Requirements for Graduation of Washington State University, as determined by the WSU Office of Admissions, will be considered to have fulfilled the lower-division General Education Requirements. These students will still be responsible for meeting the other requirements for graduation, including those in the college and major department. The University Writing Portfolio and the upper-division Tier III course are not lower-division requirements and therefore cannot be satisfied by the approved AA or AS degrees. Please note that other kinds of degrees from community colleges, or degrees from states other than Washington and Oregon, do not automatically fulfill General Education Requirements.

Total hours of General Education: 40
WORLD CIVILIZATIONS

Tier I

GenEd 110 World Civilizations I
GenEd 111 World Civilizations II

COMMUNICATION PROFICIENCY

Tier I

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

Tier II

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

Phil 102 Writing and Reasoning

C COMMUNICATION PROFICIENCY

Tier II

ComSt 102 Public Speaking: Theory, Models, and Practice
ComSt 235 Principles of Group Communication
ComSt 302 Advanced Public Speaking
ComSt 324 Argumentation

H D 205 Communication in Human Relations

MATHEMATICS PROFICIENCY

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

Tier II Arts and Humanities [H]

Archi D/LA 202 The Built Environment
Arch 220 Architectural History I
Arch 221 Architectural History II

CAC/Engl 220 [D] Introduction to Multicultural Literature
CAC 235/Hist 205/W St 235 [D] African American History
CAC 336 [D] African American Folklore
CAC 338 [D] African American Cinema

Engl 108 Introduction to Literature
Engl 199 English Composition and Literature Honors
Engl 209 Readings in English Literature
Engl 210 Readings in American Literature
Engl/Am St/Hist/W St 216 American Culture
Engl 261 Literary Masterpieces
Engl 305 Shakespeare
Engl 306 Shakespeare
Engl 308/W St 306 Introduction to Literary Criticism
Engl/W St 309 Women Writers
Engl/Hum 335 The Bible as Literature
Engl 366 The English Novel to 1900
Engl 368 The American Novel to 1900

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

Fren 315 French Civilization and Culture
Fren 320 Topics in French Literature to 1700
Fren 322 Survey of French Literature after 1700

Ger 315 Germanic Civilization

Hist 101 Classical and Christian Europe
Hist 102 Modern Europe
Hist 314/CAC 304 [D] American Roots: Immigration, Migration, and Ethnic Identity
Hist 321 [D] U.S. Popular Culture, 1800-1930
Hist 322 [D] U.S. Popular Culture Since 1930
Hist 340 Ancient Greece
Hist 341 Rome: Republic and Empire
Hist 342 History of England to 1485
Hist 343 History of England Since 1485
Hist/CAC/W St 398 [D] History of Women in the American West

Hum 101 Humanities in the Ancient World
Hum 103 Mythology
Hum 198 Humanities in the Ancient World: Honors
Hum 302 Humanities in the Middle Ages and Renaissance
Hum 303 Reason, Romanticism, and Revolution
Hum 304 Humanities in the Modern World
Hum 340 American Foundings

Mus 153 Musical Style in Composition
Mus 160 Survey of Music Literature
Mus 362 History of Jazz

The General Education Program
**Tier II Arts and Humanities [H] (continued)**

- Phil 101: Introduction to Philosophy
- Phil 198: Philosophy Honors
- Phil 201: Elementary Logic
- Phil 207: Philosophy of Religion
- Phil 220: Aesthetics
- Phil 260: Introduction to Ethics
- Phil 290: History of Ancient and Medieval Philosophy
- Phil 305: History of Modern Philosophy
- Phil 310: Nineteenth-century Philosophy
- Phil/W St 312: Philosophy and Feminism
- Phil 350: Philosophy of Science
- Phil 365: Biomedical Ethics
- Phil 370: Environmental Ethics
- Rus 323: Masterpieces of Russian Literature in Translation
- Rus 360: Russian Film
- Scand 323: Masterpieces of Scandinavian Literature in Translation
- Span 315: Hispanic Civilization
- Theat 160: Introduction to Theatre
- Theat 365: Theatre History I: Beginnings to 1700
- Theat 366: Theatre History II: 1700 to 1900
- Theat 367: Musical Theatre

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

- Anth 201: Art and Society
- CAC 151: Introduction to Chicano Studies
- CAC 171: Introduction to Native American Studies
- CAC 313/Engl 311: Asian Pacific/American Literature
- CAC 331/Engl 321: African American Literature
- CAC 353/Engl 345: Chicano/Chicana Literature
- CAC 373/Engl 341: Native American Literature
- Engl 222: World Literature in English
- F A 301: The Art of Africa, Native America, and the Pacific
- F A/Asia 302: The Arts of Asia
- GenEd 200: Studying World Civilizations Abroad
- Hist/Asia 273: Foundations of Islamic Civilization
- Hist/Asia 370: Civilization of Classical India
- Hist/Asia 373: Chinese Civilization
- Hist/Asia 374: Japanese Civilization
- Mus 163: World Music
- Mus 265/CAC 271: Native Music of North America
- Mus/W St 363: Women and Music
- Phil/Asia 314: Philosophies and Religions of India
- Phil/Asia 315: Philosophies and Religions of China and Japan
- Rus 317: Contemporary Russian Culture and Society
- Span 316: Hispanic American Culture
- Span 361: Latin American Film
- Theat 145: Contemporary World Theatre

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

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

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

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

- Ag Ec 201: Economics in Agriculture
- Ag Ec/Hist 320: American Agriculture and Rural Life
- Anth 101: General Anthropology
- Anth 198: Anthropology Honors
- Anth/W St 214: Gender and Culture in America
- Anth 330: Origins of Culture and Civilization
- Anth/For L 350: Speech, Thought and Culture
- CAC 111: Introduction to Asian/Pacific American Studies
- CAC 131: Introduction to Black Studies
- CAC 254: Comparative Latino/a Cultures
- CAC/Hist/W St 255: Chicana/o History
- CAC 302: Social Psychology of Prejudice
- CAC 335/Hist 313: Civil Rights Movement in America
- CAC 337: Black Social Psychology
- CAC/W St 372/Anth 312: Native American Women in Traditional and Contemporary Societies
- Com 101: Mass Communications and Society
- Econ 101: Fundamentals of Microeconomics
- Econ 102: Fundamentals of Macroeconomics
- Econ 198: Economics Honors
- Ger 317: Contemporary German Culture and Society
- H D 101: Human Development Across the Lifespan
- Hist 110: American History to 1877
- Hist 111: American History Since 1877
- Hist 150: Peoples of the United States
- Hist 198: History Honors
- Hist/W St 298: History of Women in American Society
- Hist 325: Food in the United States
- Hist/W St 350: European Women’s History, 1400-1800
- Hist/W St 380: History of Medicine
- Hist 381: Science in Western Civilization Through Newton
- Hist 382: Science in Western Civilization from Newton to Einstein
- PharP/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 309: Cultural Diversity in Organizations
- Psych/W St 324: Psychology of Women
- Psych/Soc 350: Social Psychology
- Psych 361: Principles of Developmental Psychology
- R S/H D 334: Principles of Community Development
- R S 335: Cross-National Perspectives on Community
- R S 336: Agriculture, Environment and Community
**Tier II Social Sciences [S] (continued)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>SHS 250</td>
<td>[D] Perspectives on Disability</td>
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<td>Soc 101</td>
<td>[D] Introduction to Sociology</td>
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<tr>
<td>Soc 102</td>
<td>Social Problems</td>
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<td>Soc/W St 150</td>
<td>[D] Marital and Sexual Life Styles</td>
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<td>Soc 198</td>
<td>Introduction to Sociology Honors</td>
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<td>Soc 315</td>
<td>Ecology of Human Societies</td>
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<tr>
<td>Soc 331</td>
<td>Population, Resources, and the Future</td>
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<tr>
<td>Soc 340</td>
<td>[D] Social Inequality</td>
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<td>Soc 341</td>
<td>Sociology of Religion</td>
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<td>Soc 345</td>
<td>[D] Sociology of Sport</td>
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<td>Soc/W St 351</td>
<td>[D] The Family</td>
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<tr>
<td>Soc 360</td>
<td>Theories of Deviance</td>
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<tr>
<td>Soc 362</td>
<td>[D] Juvenile Delinquency</td>
</tr>
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<td>Soc 373</td>
<td>[D] Media, Culture, and Society</td>
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<td>Soc/W St 384</td>
<td>[D] Sociology of Gender</td>
</tr>
<tr>
<td>W St 200</td>
<td>Introduction to Women Studies</td>
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<td>W St 204</td>
<td>Family Systems: Understanding Family Interactions</td>
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<tr>
<td>W St/CAC/Soc 300</td>
<td>Intersections of Race, Class and Gender</td>
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<td>W 80/Soc 302</td>
<td>[D] Contemporary Masculinity and Men’s Issues</td>
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**Tier II Intercultural Studies [I, G, K] (3 hours)**

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<tr>
<td>Anth 130</td>
<td>Great Discoveries in Archaeology</td>
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<tr>
<td>Anth 201</td>
<td>[G] Art and Society</td>
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<tr>
<td>Anth 203/CAC 212</td>
<td>[K] Peoples of the World</td>
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<tr>
<td>Anth 302</td>
<td>[K] Childhood and Culture</td>
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<tr>
<td>Anth/Asia/Hist 306</td>
<td>[K] Cultures and Peoples of the Middle East</td>
</tr>
<tr>
<td>Anth 307</td>
<td>[K] Contemporary Cultures and Peoples of Africa</td>
</tr>
<tr>
<td>Anth 309</td>
<td>[K] Cultural Ecology</td>
</tr>
<tr>
<td>Anth/W St 316</td>
<td>[K] Gender in Cross Cultural Perspective</td>
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<tr>
<td>Anth 320/CAC 377</td>
<td>[K] Native Peoples of North America</td>
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<tr>
<td>Anth 331/CAC 376</td>
<td>[K] America Before Columbus</td>
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<tr>
<td>CAC 101</td>
<td>Introduction to Comparative American Cultures</td>
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<td>CAC 151</td>
<td>[G] Introduction to Chicano Studies</td>
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<td>CAC 171</td>
<td>[G] Introduction to Native American Studies</td>
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<td>CAC 211/Hist 201</td>
<td>[K] Introduction to Asian American History</td>
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<tr>
<td>CAC 227</td>
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<td>CAC 313/Engl 311</td>
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<td>CAC 331/Engl 321</td>
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<td>CAC 373/Engl 341</td>
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<td>Crop/S/SoilS 360</td>
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<td>Engl 222</td>
<td>[G] World Literature in English</td>
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<td>F A 301</td>
<td>[G] The Art of Africa, Native America, and the Pacific</td>
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<td>F A/Asia 302</td>
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<td>Fren 316</td>
<td>French Civilization and the Francophone World</td>
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<td>[G] Studying World Civilizations Abroad</td>
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<tr>
<td>Hist 230</td>
<td>[K] Latin America, The Colonial Period</td>
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<td>Hist 231</td>
<td>[K] Latin America, The National Period</td>
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<td>Hist/Asia 270</td>
<td>[K] Introduction to South Asian Culture</td>
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<td>Hist/Asia 272</td>
<td>[K] Introduction to Middle Eastern History</td>
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<td>[K] Foundations of Islamic Civilization</td>
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<td>Hist/Asia 275/CAC 217</td>
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<td>Hist 331</td>
<td>[K] North American Indian History, Precontact to Present</td>
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<td>Hist/Asia 370</td>
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<td>Hist/Asia 373</td>
<td>[K] Chinese Civilization</td>
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<td>Mus 265/CAC 271</td>
<td>[G] Native Music of North America</td>
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<td>Rus 317</td>
<td>[G] Contemporary Russian Culture and Society</td>
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<td>Span 316</td>
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<td>Span 361</td>
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<td>[G] Contemporary World Theatre</td>
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<td>W St 220</td>
<td>[K] Women, Science, and Culture</td>
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<tr>
<td>W St 332/Anth 317</td>
<td>Global Feminisms</td>
</tr>
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</table>

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

Requirements in Intercultural Studies may be satisfied by courses (see below) which enhance 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.
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.

*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]**

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

**B BIOLOGICAL SCIENCES (Tier II)**

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

**P PHYSICAL SCIENCES (Tier II)**

- **Astr 135** Descriptive Astronomy
- **Astr/Phys 345** Principles of Astronomy
- **Astr 390 (L)** The Night Sky
- **Chem 101 (L)** Introduction to Chemistry
- **Chem 102 (L)** Chemistry Related to Life Sciences
- **Chem 105 (L)** Principles of Chemistry I
- **Chem 106 (L)** Principles of Chemistry II
- **Chem 115 (L)** Chemical Principles Honors I
- **Chem 116 (L)** Chemical Principles Honors II
- **Chem 350 (L)** Chemistry in Contemporary Society
- **Geol 101 (L)** Introduction to Geology
- **Geol 102 (L)** Physical Geology
- **Geol 180 (L)** Honors Geology
- **Geol 210 (L)** Evolution and Earth History
- **Geol 322** Geology of the Pacific Northwest
- **Geol 323 (L)** Geology of the Pacific Northwest
- **Geol 390** Living on the Edge: Global Climate Change and Earth History
- **Phys 101 (L)** General Physics
- **Phys 102 (L)** General Physics
- **Phys 201 (L)** Physics for Scientists and Engineers
- **Phys 202 (L)** Physics for Scientists and Engineers
- **Phys 205 (L)** Physics for Scientists and Engineers I - Honors
- **Phys 206 (L)** Physics for Scientists and Engineers II - Honors
- **Phys 380** Physics and Society

**TIER III COURSES**

**[T] (3 hours)**

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

Many of the Tier III courses employ an interdisciplinary approach to topical issues or other subject matter. Other courses may be grounded in the methodologies of the sciences, the social sciences, or the arts and humanities. **[D]** designates courses which also fulfill the American Diversity Requirement.

**TIER III COURSES GROUNDED IN SCIENTIFIC METHODOLOGIES**

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

- **Astr 450** The Search for Extraterrestrial Life
- **Biol 401** Plants and People (Prereq Biol 102, 104, or Bot 120)
- **C E 401** Global Climate Change
- **Entom 401** Invertebrates in Biological Thought (Prereq Biol 104; Rec Zool 150)
Tier III Courses Grounded in Scientific Methodologies (continued)

**FSHN 444** Applied Nutrition in Health Science  
(Prereq biol, chem, soc, or psych)

**GenCB 455** Origins of Life

**MSE 440** Materials: The Foundation of Society and Technology

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

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

TIER III COURSES USING SOCIAL SCIENCE METHODS

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

**AMT 417** [D] Social and Psychological Aspects of Dress

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

**Anth 405** Medical Anthropology

**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 453** [D] Health Issues for Chicanos/as

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

**CAC 470** Federal Native American Resource Settlement Models

**CAC 475/Hist 408** [D] Indians of the Northwest

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

**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)

**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 466** History of the Cold War, 1944-present

**Hist/Asia 470** Gandhi: India and the United States

**Hist/Asia 473** The Middle East and the West

**Hist 483** Technology and Social Change to 1950

**Hist 491** History of World Trade

**Hist 492** Cultural Appetites: Food in World History

**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** [D] Disability and Society

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

**Soc 430** Society and Technology

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

**Soc 442** Political Sociology

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

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

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

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

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

TIER III COURSES EMPLOYING THE METHODS OF THE ARTS  
AND HUMANITIES

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

**Am St 410** Cities in Fiction

**Am St/Engl 471** Cultural Politics Since World War II

**Am St/Engl 472** Ecological Issues and American Nature Writing

**Engl/W St 409** Women Writers in the American West

**Engl 415** Traditions of Comedy and Tragedy

**Engl 419** The Twentieth Century Novel

**For L 422** Twentieth-Century Issues in German and Latin American Film and Literature

**Hum 410** Love in the Arts

**Phil 430** Philosophy of Art

**Phil 435** East/West Philosophy of Architecture

**Phil 440** Mind of God and the Book of Nature: Science and Religion  
(Prereq completion of science GERs)

**Rus 430** St. Petersburg

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

Department of Aerospace Studies

Professor, Colonel C. Herbst, Major G. Foster, Captain J. Tinghitella, Captain B. Ladd.

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

Students may participate in either the four-year or two-year program. The four-year student completes the General Military Course (two years), four-week summer training (Aero 291), and the Professional Officer Course (two years). The two-year student attends a special six-week summer field training (Aero 292) and then completes the Professional Officer Course. The two-year program is designed for any student having at least two years left in the university, but who has no previous AFROTC or military service.

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

Professional Officer Course (POC). This sequence, beginning with Aero 311, consists of four 4-credit courses normally taken during the student’s last two years in the university. Entry into the POC is competitive. Students must normally complete field training the summer before they enter the POC. Four-year students compete for entry during their last year in the GMC. Other students should begin the application process early in the fall semester before they plan on attending field training.

Financial Aid and Scholarships. Air Force ROTC offers enrolled GMC students the opportunity to compete for three-and-one-half-, three-, two-and-one-half-, and two-year scholarships which pay tuition, fees, and a seminar book allowance, as well as a $200 per month stipend during fall and spring semesters. Two-year program applicants can compete for a two-year scholarship. All Air Force ROTC students contracted in the POC receive a $200 per month stipend. Contracted POC, not already awarded a scholarship, are eligible for a $1,500 per semester scholarship as long as they maintain minimum academic requirements and standards.

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

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

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

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

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

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

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

Aero 311 Directed Studies V 1-4 May be repeated for credit. By interview only.

Aero 321 Air Force Leadership and Management I 4 (3-2) Examines leadership, management, professional knowledge, Air Force personnel and evaluation systems, and leadership ethics. Leadership Laboratory is mandatory for AFROTC.

Aero 322 Air Force Leadership and Management II 4 (3-2) Examines leadership, management, professional knowledge, Air Force personnel and evaluation systems, and leadership ethics. Leadership Laboratory is mandatory for AFROTC.

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

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

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

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

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

Program in Aging

Interim Chair, G. Peterson.

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

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

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

3. To prepare students for graduate and professional training in gerontology;

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

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

Description of Courses

Aging

305 Gerontology 3 Same as H D 305.

363 Psychology of Aging 3 Same as Psych 363.

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

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

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

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

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

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

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

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

Employment Opportunities

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

Degree Program Requirements

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

The following schedules set forth the general requirements for the two Bachelor of Science degrees: Bachelor of Science in Agricultural Economics and Bachelor of Science in Agribusiness. Under the agricultural economics degree there are two options: agricultural production and resource management, and food and resource economics. General Education Requirements are met in the department requirements listed for all curricula. Students should consult their 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:

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<thead>
<tr>
<th>Freshman Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>Ag Ec 201 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Econ 102 [S] (GER)</td>
<td>3</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Tier I Science [Q] (GER)</td>
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<td>Second Semester</td>
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<td>Acctg 231</td>
<td>3</td>
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<tr>
<td>Acctg 210</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
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<tr>
<td>ComSt 102 [C], 235 [C], 302 [C], or 324 [C] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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AGRIBUSINESS DEGREE PROGRAM (120 HOURS) (FYDA)

The Bachelor of Science in Agribusiness degree has been developed for the student who wants to specialize in agribusiness management. Emphasis is placed on the principles of management, marketing, and finance as they apply to the agribusiness sector. The program requires in-depth inquiry into the various management, marketing, and financial decision-making tools. Enough flexibility exists to permit an integrated complement of courses.

Sophomore Year

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<tr>
<th>First Semester</th>
<th>Hours</th>
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<tr>
<td>Acctg 231</td>
<td>3</td>
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<tr>
<td>Ag Ec 340</td>
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<tr>
<td>Arts &amp; Humanities [H, G] (GER)</td>
<td>3</td>
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<tr>
<td>Physical Sciences (GER)</td>
<td>3 or 4</td>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H, G] or Social Sciences [S, K]</td>
<td>6</td>
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<tr>
<td>Business Elective</td>
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<td>Math 201</td>
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<td>Stat 212 [N] (GER)</td>
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Junior Year

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<th>First Semester</th>
<th>Hours</th>
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<tr>
<td>Ag Ec 370, 450 [M], or 453</td>
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<tr>
<td>Ag Ec 435 or B Law 210</td>
<td>3</td>
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<tr>
<td>Communication Skills Elective</td>
<td>3</td>
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<tr>
<td>Math 202 [N] (GER)</td>
<td>3</td>
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<tr>
<td>Mgt, Mktg, or I Bus Elective</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 360</td>
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<tr>
<td>Econ 302</td>
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<td>Technical/Career Elective</td>
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Senior Year

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<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 330</td>
<td>3</td>
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<tr>
<td>Ag Ec 460 [M]</td>
<td>3</td>
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<tr>
<td>Ag Ec Elective</td>
<td>3</td>
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<tr>
<td>Econ 320</td>
<td>3</td>
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<tr>
<td>Technical/Career Elective</td>
<td>3 or 4</td>
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<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 409 or 411</td>
<td>3 or 4</td>
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<tr>
<td>Ag Ec 370, 450 [M], or 453</td>
<td>3</td>
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<tr>
<td>Engl 402 [W] (GER)</td>
<td>3</td>
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<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
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AGRICULTURAL ECONOMICS

AGRICULTURAL ECONOMICS AND 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

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<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 340</td>
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<td>Arts &amp; Humanities [H, G] (GER)</td>
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<tr>
<td>Physical Sciences (GER)</td>
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<td>Semester</td>
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<td>First Semester</td>
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<td>Majority Year</td>
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**RESOURCES AND ENVIRONMENTAL ECONOMIES DEGREE PROGRAM**

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

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
<th>Courses</th>
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<tr>
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<td>Acctg 231</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></td>
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<td>Physical Sciences [P] (GER)</td>
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<td>Elective</td>
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<td>Second Semester</td>
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<td>Ag Ec 320, 490, or 490</td>
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<td>Communication Skills Elective</td>
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<td>Math 201</td>
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<td>Social Sciences [S, K] (GER)</td>
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<td>Stat 212 [N] (GER)</td>
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**Minor in Agricultural Economics or Agribusiness**

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

**Transfer Students**

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

**Preparation for Graduate Study**

Students who plan to do work in agricultural economics beyond the bachelor’s degree should consult their advisors as early as possible to develop study programs directed toward their goals.
435 Natural Resource Law 3 Rec Ag Ec 201. Analysis of federal and state courts resolution of real-world conflicts in land and water use. Cooperative course taught by WSU, open to UI students (Ag Ec 435).

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.

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

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 590.

510 Statistics for Economists 3 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 empirical analysis.

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

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

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.

599 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 multiracial, multilingual, and multicultural society, that is also part of a global system. Established in 1975, the American Studies program, like most American Studies programs, has its roots in History and English. Currently, we have in addition strong ties to the Department of Women’s Studies and the Department of Comparative American Cultures. We also draw faculty from Anthropology, Communications, Fine Arts, Environmental Science, Political Science, and Sociology. American Studies majors are encouraged to reinforce their studies with minors in one of these related fields, and the minor in American Studies may be especially appropriate for students with majors in one of these departments.

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

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

Degree Program Requirements

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GEUs as American Diversity courses also fulfill GER requirements in a major or minor area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GEUs.
The undergraduate major consists of a core curriculum of 30 hours (with some options available within the core) plus an additional 12-hour area of concentration which permits students to investigate particular aspects of American culture.

Core Requirements, in suggested order: Hist 110, 111, Am St/Engl/Hist 216, W St/CAC/Soc 300; Engl 380, 381, or 382; 300-400-level American history; 300-400-level CAC or W St; Am St/Engl 470, 471 or 472.

Areas of Concentration
A series of approved, linked courses in various departments have been established in the following interdisciplinary areas to satisfy the 12-hour requirement for an area of concentration:

1. Environment and Culture
2. Multicultural American West
3. Nationalisms and American Identities
4. Popular Culture, Film, and Mass Media
5. Science, Technology, and Culture
6. The Arts, Culture, and Social Change

The intention of the American studies faculty is to encourage students, with the approval of their advisors, to investigate areas not officially approved in the foregoing list. By designing their own programs and taking courses that will aid in their research, students can investigate the effects of agriculture, engineering, education, architecture, folklore, theatre, or mass communications, to name only a few, on American culture.

AMERICAN STUDIES DEGREE PROGRAM (120 HOURS) ✓FYDA

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
Elective 3

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

Sophomore Year
First Semester  Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biological Sciences [B] (GER) 4
Foreign Language or Elective1 4
Hist 110 3

Second Semester  Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) 3
Foreign Language or Elective1 4
Hist 111 3
Physical Sciences [P] (GER) 4

Junior Year
First Semester  Hours
Am St 216 3
Engl 380, 381, or 382 3
W St 300 3
Electives 6
Complete Writing Portfolio

Second Semester  Hours
Engl 380, 381, or 382 3
Major Concentration Area Elective2 6
Electives 6

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

Second Semester  Hours
300-400-level American Hist Elective 3
Major Concentration Area Electives2 6
One from: Am St 470, 471, or 472 3
Tier III Capstone (GER) 3

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

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

Preparation for Graduate Study
American Studies majors considering graduate work in this field should include college-level courses in at least one modern 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 American history, other, and humanities and social science areas may also apply to the graduate Program in American Studies at WSU; a guide to the MA and Ph.D program is available through the office of the Director of American Studies.

Description of Courses

American Studies
Am St
216 [H] American Culture 3 Same as Engl 216.
410 [T] Cities in Fiction 3 Prereq completion of one Tier I and three Tier II courses. Exploration of the city as an active agent in the fictional works of North American authors.
424 History of American Popular Culture 3 Same as Hist 424. Credit not granted for both Am St 424 and 524.
470 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 Prereq completion of one Tier I and three Tier II courses. Representation of nature in American fiction and nonfiction; role of culture in shaping environmental problems and solutions.

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

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

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

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

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

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

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

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

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 agen-
cies. Continued education leading toward graduate or professional degrees is available for students from the animal sciences program. Employers seek out graduates in animal sciences because of their practical and technical knowledge of animal care and production.

Students in animal sciences take a wide variety of agricultural and non-agricultural courses, receiving in-depth training in the biology of farm and companion animals. The curriculum is designed to provide students with the scientific, practical, and people skills to make them productive members of the food production, animal care and related industries. Prior to their junior year, students select an option to coincide with their interests. These options have required courses and electives which allow program specialization.

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

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

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

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

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

**Degree Program Requirements**

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

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

**INDUSTRY DEGREE PROGRAM (121 HOURS)  ✔FYDA**

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**Freshman Year**

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**Sophomore Year**

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**Second Semester**

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**Junior Year**

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**Senior Year**

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

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**PRODUCTION MANAGEMENT DEGREE PROGRAM (121 HOURS)  ✔FYDA**

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**Sophomore Year**

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**Junior Year**

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**Senior Year**

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**Second Semester**

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

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

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</table>

**Joint Program in Animal Sciences and Veterinary Medicine**

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

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

**Degree Program Requirements**

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

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<tr>
<th>Year</th>
<th>First Semester</th>
<th>Hours</th>
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<tr>
<td>Fourth-Seventh Years</td>
<td>Hours</td>
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<td>Those students finishing all required classes would complete only the DVM curriculum from this point on, with the exception of V MS/A S 414. Students who still need either A S 406 or 408 would enroll in one of those in lieu of V MS/A S 414. If two 400-level animal production courses (A S 466, 472, 474, 476, or 478) were not completed, then students would enroll in one of them. Students will receive the BS in Animal Sciences upon successful completion of at least 120 credit hours and the final two 400-level A S classes. Most students will meet these requirements after one year of the DVM program. Successful completion of the College of Veterinary Medicine program will earn the Doctor of Veterinary Medicine.</td>
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</tbody>
</table>

**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

101 Introductory Animal Science 3 (2-3) Types and breeds of livestock, terminology, methods, management systems, techniques of animal and poultry production and consumer impact. Credit not granted for both A S 101 and 103. Cooperative course taught jointly by WSU and UI (A VS 109).

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

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

172 Dairy Cattle Management Laboratory 1 (0-3) Management practices associated with a dairy enterprise. S, F grading. Cooperative course taught by UI (A VS 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 (A VS 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 (A VS 176), open to WSU students.

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

180 Animal Sciences Orientation 1 Animal sciences as a profession; career opportunities, curriculum, advising, 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 (A VS 204).

213 Applied Animal Nutrition 3 Prereq one semester Chem; one semester Biol. 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 (A VS 213).

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 (A VS 263).

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 of horse, 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 (A VS 272).

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

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

314 Principles of Nutrition 3 Prereq Biol 104; Chem 102 or 106; Chem 240. Digestion, absorption, metabolism, and function of nutrients. Cooperative course taught jointly by WSU and UI (A VS 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 (A VS 330).

345 Introduction to Animal Growth and Development 3 Prereq A S 101, Biol 103. Animal structure, composition, whole body and cellular growth, prenatal and postnatal growth; emphasis on skeletal muscle, bone and adipose tissue. Cooperative course taught by WSU, open to UI students (A VS 315).

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

350 Reproduction of Farm Animals 3 Prereq Biol 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 (A VS 452).

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


366 Equine Science and Management 3 Operational management of a horse stable, promotion, marketing, liability issues, insurance and business needs, and fiscal transactions with equine business. Cooperative course taught by WSU, open to UI students (A VS 366).

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

369 Principles 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 Careers in Animal Science 1 Issues and preparation for careers in animal sciences.

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 (A VS 431).

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

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

443 Case Studies in Animal Science 1 May be repeated for credit; cumulative maximum 3 hours. Readings and discussions of cases of disease in animal science. Credit not granted for both A S 443 and 444.

444 Physiology of Disease 3 Introduction to the mechanisms of disease in domestic animals. Cooperative course taught by WSU, open to UI students (A VS 315).

451 Endocrine Physiology 3 Prereq BC/BP 364, Biol 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 (A VS 451).

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

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 (A VS 218).


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


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

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

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

488 [M] Perspectives in Biotechnology 3 Graduate-level course taught jointly by WSU and UI (AVS 488).

504 Special Topics 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 504.

509 Seminar in Animal Physiology 1 May be repeated for credit. Current developments in animal physiology. Cooperative course taught jointly by WSU and UI (AVS 509).

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 Endocrine Physiology 3 Graduate-level counterpart of A S 451; additional requirements. Credit not granted for both A S 451 and 550. Cooperative course taught jointly by WSU and UI (AVS 551).

554 Special Problems V I-4 May be repeated for credit. S, F grading.

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

557 Laboratory in Embryo Transfer 1 (0-3) Prereq c/l 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).

563 Advanced Dairy Management 2 (1-3) Graduate-level counterpart of A S 473; additional requirements. Credit not granted for both A S 473 and 563.

553 Mineral and Vitamin Metabolism 4 Prereq A S 406 or 408; BC/BP 364. Absorption, excretion, metabolism, dietary requirements and interactions of minerals and vitamins in animals and humans. Cooperative course taught by WSU, open to UI students (AVS 510).

513 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 512).

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.

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

508 Advanced Nutrient Metabolism 2 Prereq A S 406 or 408; 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).

591 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).

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

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

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**Department of Anthropology**

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

The curriculum includes courses in the four major subfields of anthropology: archaeology, cultural/social anthropology, linguistic anthropology, and physical anthropology. These courses will familiarize students with current issues in human evolution, linguistics, the prehistoric development of culture, and cultural theory. Undergraduate majors are required to gain a background in all four of these major subfields. Graduate students may specialize in archaeology or cultural anthropology. The program in archaeology emphasizes the prehistory of western North America as well as ecological archaeology, past environments, quantitative methods, modeling and simulation, and lithic analysis, and includes courses taught by faculty with specialties in geoarchaeology, quaternary vegetation and climate, and zooarchaeology. The department also conducts summer archaeological field schools in the Pacific Northwest. The program in cultural anthropology emphasizes psychological anthropology, gender and kinship issues, medical anthropology, social scale and inequality, applications of Darwinian theory, and global political ecology. Faculty research is based in North and South America, Polynesia, Sub-Saharan Africa, and South Asia.

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

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

**Degree Program Requirements**

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

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

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

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

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**ANTHROPOLOGY DEGREE PROGRAM**

**120 HOURS**

resenter Year

First Semester

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<th>Course</th>
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<td>Anth 203</td>
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(FAYDA)
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

Anth


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.

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

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

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

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

300 Field Methods V 2-8 Prerequisite 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 Contempoary Arab cultures in a historical perspective within the framework of Western-Middle Eastern relations.

307 [K] Contemporary Cultures and Peoples of Africa 3 Introduction to family, social, political, economic and religious institutions of African cultures in context of African social issues.

309 [K] Cultural Ecology 3 Major findings of ecological anthropology relating to problems of population, resources, and environment in small-scale cultures.

312 [S][I] Native American Women in Traditional and Contemporary Societies 3 Same as CAC 372.

316 [K] Gender in Cross Cultural Perspective 3 Prerequisite Anth 101, Psych 105, Soc 101, or W St 200; sophomore standing. Cross-cultural examination of the status and roles of women and men, the institution of marriage, and symbols of gender valuation.

317 [I] Global Feminisms 3 Same as W St 332.


327 Contemporary Native Peoples of the Americas 3 Contemporary cultures of Native American communities emphasizing North America.

330 [S] Origins of Culture and Civilization 3 Prerequisite 3 hours Anth. Prehistoric roots of culture from the beginnings of mankind to the rise of the first civilizations in Africa and Eurasia.

331 [K] America Before Columbus 3 Prerequisite 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 Prerequisite Anth 230, 331, or 370. Prehistory of Washington state; for majors and nonmajors.


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

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

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

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


404 [K] The Self in Culture 3 Prerequisite 100, 200, and 300-level (one of each) in Anth, Hist, Psych, Literature, or Soc; completion of one Tier I and three Tier II courses. Survey of anthropological theories of self; focus on self in Western/non-Western cultures, human development, power, historical context.

405 [M] [K] Medical Anthropology 3 Prerequisite 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 Prerequisite 3 credits Anthrop, 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. Prerequisite 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 Prerequisite 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).

467 Forensic Anthropology 4 (3-3) Prereq Anth 466. Determining age, sex, stature, population affinities, personal identifying characteristics, and evidence of trauma for human skeletal material for criminal and human rights cases. Credit not granted for both 467 and 567.


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

495 Ecuador Internship/Independent Study V 3-10 Prereq Anth 494, 3 credits in Spanish; by interview only. Individually designed internships with development-related Ecuadorian non-governmental organizations or independent field projects supervised by Ecuadorian anthropologists. Taught in Ecuador.

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

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

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

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

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

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

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

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

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

528 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, exploratory data analysis, inferential statistics, and use of SAS in anthropological research with emphasis on archaeology.

539 Prehistory of the Upland Southwest 3 Prehistory of upland portions of American Southwest; emphasis on Anasazi and Mogollon traditions and relationships to historic Pueblos.

540 Prehistory of Northwest Coast 3 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; acculturation 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 research 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, 550. Elaboration, recording techniques and analysis of sociocultural and linguistic field data.

Department of Apparel, Merchandising, and Interior Design

Associate Professor and Chair, C. Salusso; Professor, J. Asher Thompson; Associate Professors, C. Bicknell, R. Krikac; Assistant Professors, N. Brown, J. Cho-Che, J. Jacob, M. Melcher, J. Turpin; Instructors, P. Fischer, L. Follette.

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

Exciting and challenging careers are virtually unlimited for students with a degree in Apparel, Merchandising, and Textiles. The textile and apparel industry is global, massive, multi-faceted and in close competition with California for level of productivity and profit. The apparel and textiles industry is the fifth largest industry in the state of Washington. Graduates are prepared for careers in the textile and apparel industry through coursework designed to develop both professional and personal expertise. Curriculum options are designed to:

- Mentor textile and apparel industry issues and practices encompassing historic and futuristic global, Technological, and economic trends, challenges, and opportunities.
- Develop understanding of the societal, psychological, and cultural factors that influence consumer response to apparel and textile products.
- Provide opportunities for students to practice methods and skills required for developing consumer products, merchandising those products, analyzing consumer uses and mediating consumer responses to textile and apparel products.
- Develop analytical, evaluative, communication, teamwork and leadership skills necessary to succeed in today’s work environment.

Areas of Study

All apparel, merchandising, and textile majors complete core courses that introduce fundamental concepts and methods. Students then develop an area of expertise by selecting an option plus a minor or combination of courses reflective of career interests and goals. All students are encouraged to complete an internship in the apparel, merchandising, and textiles industry. Opportunities exist within the apparel, merchandising and textile complex throughout the Washington, across the U.S. and through our active study abroad program. Internships provide a competitive edge and yield higher level positions upon graduation and significantly better entry salaries.

Interior Textiles Option

Offers a crossover between Apparel and Interior Design coursework supplemented by fine art and business. Careers relate to the home products industry, textile design and marketing, and materials aspects of design.

Merchandising Option

Includes courses designed to allow students to develop competence in the planning, buying, and selling of merchandise in either manufacturing or retail organizations. Curriculum includes a minor in Business Administration.

Product Development Option

Focuses on the interaction between design and merchandising and depth in apparel design/product development. Students typically complete a minor in computer aided aspects of fine art and/or business promotion.

Internships

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

Degree Program Requirements

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

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

MERCHANDISING DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester

AMT 108 3
ComSt 102 [C] or H D 205 [C] (GER) recommended 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Soc 101 [S] or Psych 105 [S] (GER) recommended 3

Second Semester

Econ 101 [S] or 102 [S] (GER) 3
F A 103 3
GenEd 111 [A] (GER) 3
Merchandising Elective1 3
Stat 212 [N] (GER) recommended 3

Sophomore Year

First Semester

Arts & Humanities [H,G] (GER) 3
AMT 215 4
AMT 220 3
Econ 101 [S] or 102 [S] (GER) 3
FSHN 130 [B] (GER) recommended 3

Second Semester

Acctg 230 3
AMT 208 3
AMT 216 3
Biological Sciences [B] (GER)2 3 or 4
Merchandising Elective1 3

Junior Year

First Semester

AMT 314 [M] 3
Intercultural [L,G,K] (GER) 3
Merchandising Elective1 3
Mktg 360 3
Physical Sciences [P] (GER)2 3 or 4
Complete Writing Portfolio

Second Semester

AMT 318 3
AMT 420 [M] 3
Merchandising Electives1 9

Senior Year

First Semester

AMT 417 [M] 3
Merchandising Elective1 3
Mgt 301 3
Mktg 470 3
Tier III Capstone (GER) 3

Second Semester

AMT 413 [M] 3
AMT 490 or AMT/I D Electives1 9
Merchandising Elective1 2

1 Merchandising Electives: Mgt and Mktg courses are recommended or up to 22 credits of general electives.

2 For a total of 7 credits of Biological and Physical Science electives.

3 AMT/I D Electives: AMT 218, 311, 316, 320, 412, 419, 428, 491, 492, 495, 498, 499; I D 101, 102, 211, 311, 498; apparel or interior design transfer courses as approved by the department.

PRODUCT DEVELOPMENT DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester

AMT 108 3
ComSt 102 [C] or H D 205 [C] (GER) recommended 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Soc 101 [S] or Psych 105 [S] (GER) recommended 3

Second Semester

F A 103 3
GenEd 111 [A] (GER) 3
Product Development Electives1 7
Stat 212 [N] (GER) recommended 3

Sophomore Year

First Semester

AMT 215 4
AMT 220 3
Econ 101 [S] or 102 [S] (GER) 3
F A 110 3
FSHN 130 [B] (GER) recommended 3

Second Semester

AMT 208 3
AMT 216 3
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER)2 3 or 4
Intercultural [L,G,K] (GER) 3

Junior Year

First Semester

AMT 311 3
AMT 314 [M] 3
AMT 417 [M] 3
AMT 492 3
Physical Sciences [P] (GER)2 3 or 4
Complete Writing Portfolio

Second Semester

AMT 316 3
AMT 318 3
AMT 420 [M] 3
Mktg 360 3
Product Development Elective1 3

Senior Year

First Semester

AMT 490 or AMT/I D Electives1 7
Mgt 301 3
Product Development Elective1 2
Tier III Capstone (GER) 3

Second Semester

AMT 412 3
AMT 413 [M] 3
Product Development Electives1 6

1 Product Development Electives: F A 111; 303 or 304; 313, 331, 332, 380; Theat 163, 264, 368; or up to 18 credits of general electives.
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
- Stat 212 [N] (GER) recommended 3

Second Semester
- Econ 101 [S] or 102 [S] (GER) 3
- GenEd 111 [A] (GER) 3
- I D 102 3
- Soc 101 [S] or Psych 105 [S] (GER) recommended 3

Sophomore Year
First Semester
- AMT 215 4
- AMT 220 3
- Biological Sciences [B] (GER) recommended 3 or 4
- ComSt 102 [C] or H D 205 [C] (GER) recommended 3
- I D 200 3

Second Semester
- AMT 208 3
- AMT 216 3
- Arts & Humanities [H,G] (GER) 3
- Interior Textiles Elective 3
- Physical Sciences [P] (GER) recommended 3 or 4

Junior Year
First Semester
- AMT 314 [M] 3
- AMT 492 3
- AMT/I D Elective 3
- Intercultural [I,G,K] (GER) 3
- Mgt 301 3
- Complete Writing Portfolio

Second Semester
- AMT 318 3
- AMT 420 [M] 3
- Interior Textiles Electives 6
- Mkrg 360 3

Senior Year
First Semester
- AMT 417 [M] 3
- I D 311 3
- Interior Textiles Electives 6
- Tier III Capstone (GER) 3

Second Semester
- AMT 412 3
- AMT 413 [M] 3
- AMT 490 or AMT/I D Elective 4
- Interior Textiles 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

The successful completion of a portfolio review is required to become a certified major in interior design. The review is set up as an interview process between each student and a faculty panel. During the interview, students are expected to present completed projects and explain, defend, and justify their design solutions to the faculty. Students wishing to certify into the interior design program must complete a minimum of 45 semester hours including the following six courses: Arch 101, 103, 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. As graduates, students’ ability to take the initiative and to make critical judgments of their own designs, as well as others, and to operate within a team context contributes to their future success as professionals.

Degree Program Requirements

INTERIOR DESIGN (120 HOURS)

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

The interior design program offers a balanced program in interior design with exposure to art, architecture, and humanities. The fourth year is taught at WSU Spokane, and students participate in an interdisciplinary design studio experience. This is an integrated studio with participation from interior design, architecture, construction management, and landscape architecture.

Freshman Year
First Semester
- Arch 101 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- I D 101 3
- Math Proficiency [N] (GER) 3

Second Semester
- Arch 103 3
- FSHN [B] (GER) 3
- GenEd 111 [A] (GER) 3
- I D 102 3
- Tier I Science [Q] (GER) 3

Sophomore Year
First Semester
- AMT 215 3
- Arts & Humanities [H,G] (GER) 3
- ComSt [C] (GER) 3
- Biological Sciences [B] 3 or 4
- Biological Sciences [P] (GER) 3 or 4

Second Semester
- AMT 208 3
- AMT 216 3
- I D 203 3
- I D 205 3
- Tier I Science [Q] (GER) 3

Junior Year
First Semester
- AMT 314 [M] 3
- AMT 492 3
- AMT/I D Elective 3
- Intercultural [I,G,K] (GER) 3
- Mgt 301 3
- Complete Writing Portfolio

Second Semester
- AMT 318 3
- AMT 420 [M] 3
- I D 311 3
- Interior Textiles Electives 6
- Mkrg 360 3

For a total of 7 credits of Biological and Physical Science electives.

I D 321, 498; apparel or interior design transfer courses as 419, 428, 491, 492, 495, 498, 499; I D 102, 211, 311, 498; apparel or interior design transfer courses as approved by the department.

3 AMT/I D Electives: AMT 218, 311, 316, 320, 412, 419, 428, 491, 492, 495, 498, 499; I D 102, 211, 311, 498; apparel or interior design transfer courses as approved by the department.

2 For a total of 6 credits of general electives.

3 AMT/I D Electives: AMT 218, 311, 316, 320, 412, 419, 428, 491, 492, 495, 498, 499; I D 102, 211, 311, 498; apparel or interior design transfer courses as approved by the department.

1 For a total of 7 credits of Biological and Physical Science electives.

2 Interior Textile Electives: Arch 456, F A 103, 110, 331, 332, 433, 434, Mkrg 461, 467, 470, 477, 478, or 6 credits of approved electives, or up to 18 credits general electives.

3 AMT/I D Electives: AMT 218, 311, 316, 320, 412, 419, 428, 491, 492, 495, 498, 499; I D 102, 211, 311, 498; apparel or interior design transfer courses as approved by the department.

1 For a total of 7 credits of Biological and Physical Science electives.
Section 1

Introduction to 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.

208 (418) Visual Merchandising and Promotion 3
Examination of fashion promotion components of visual display, store layout, fashion show, and fashion forecasting. Cooperative course jointly taught by WSU and UI (FCS WS 208).


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

218 Apparel Product Analysis 1 (3-2-3) Analysis of garments and textile products, product performance, quality control, mass production principles, and consumer value. Cooperative course taught by WSU and UI (FCS 224).

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

311 Pattern Making 3 (0-6) Prereq AMT 216 or instructor permission. Flat pattern and drafting as pattern making techniques for designing fashion apparel. Cooperative course taught jointly by WSU and UI (FCS 324).

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

316 Draping 3 (0-6) Prereq AMT 216 or by permission. Draping as a pattern making technique for designing fashion apparel.

318 Merchandising Mathematics 3 Prereq AMT 314, Mktg 360, or by permission. Overview of apparel retailing, merchandise planning and buying, application of planning and buying principles, preparation for professional experience. Cooperative course taught jointly by WSU and UI (FCS 429).

320 Textiles Design 3 Prereq AMT 108, 215. Textile design with emphasis upon weaving, dying, surface design, or graphics. Cooperative course taught by UI (Art 214), open to WSU students.

412 Fashion Line Development 3 (0-6) Prereq AMT 311, 316. Development of original fashion lines for exhibition to audience. Cooperative course taught jointly by WSU and UI (FCS 424).

413 [M] International Trade in Textiles and Apparel 3 Prereq Mktg 360. Economic/social conditions influencing apparel trade and consumption; comparison of production, distribution, and consumption of apparel in the global economy.

417 [T] [ID] [M] Social and Psychological Aspects of Dress 3 Prereq 6 hours social science; completion of one Tier I and three Tier II courses. Students engage in a multidisciplinary framework in considering the social importance of the body and dress. Cooperative course taught by WSU, open to UI students (HEC 417).

419 Apparel, Merchandising, and Textiles Field Trip V 1-3 May be repeated for credit; cumulative maximum 4 hours. Prereq certified majors or instructor's permission. Field trips to experience the textile and apparel industry from the perspective of professionals within a wide range of careers.

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

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

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

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

492 Sketching and Graphic Communication 3 (1-4) Prereq FA 103. 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 Critical Perspectives on Appearance 3 Prereq graduate standing. Exploration of appearance issues, theory, and research from the perspectives of social science, feminist theory, postmodern and poststructural discourses.

518 Visual Promotion 3 Graduate-level counterpart of AMT 418; additional requirements. Credit not granted for both AMT 418 and 518.

519 Research Methods 2 or 3 Prereq AMT 594, graduate standing. Analysis and understanding of research methods, exploration of thesis topic and literature review development as applicable to the fields of textiles, apparel, and interior design.

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

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

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

596 Advanced Instructional Practicum 3 Prereq Univ 590 or 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

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.

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


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

218 Apparel Product Analysis 1 (3-2-3) Analysis of garments and textile products, product performance, quality control, mass production principles, and consumer value. Cooperative course taught by WSU and UI (FCS 224).

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

311 Pattern Making 3 (0-6) Prereq AMT 216 or instructor permission. Flat pattern and drafting as pattern making techniques for designing fashion apparel. Cooperative course taught jointly by WSU and UI (FCS 324).

314 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.

316 Draping 3 (0-6) Prereq AMT 216 or by permission. Draping as a pattern making technique for designing fashion apparel.

318 Merchandising Mathematics 3 Prereq AMT 314, Mktg 360, or by permission. Overview of apparel retailing, merchandise planning and buying, application of planning and buying principles, preparation for professional experience. Cooperative course taught jointly by WSU and UI (FCS 429).

320 Textiles Design 3 Prereq AMT 108, 215. Textile design with emphasis upon weaving, dying, surface design, or graphics. Cooperative course taught by UI (Art 214), open to WSU students.

412 Fashion Line Development 3 (0-6) Prereq AMT 311, 316. Development of original fashion lines for exhibition to audience. Cooperative course taught jointly by WSU and UI (FCS 424).

413 [M] International Trade in Textiles and Apparel 3 Prereq Mktg 360. Economic/social conditions influencing apparel trade and consumption; comparison of production, distribution, and consumption of apparel in the global economy.

417 Social and Psychological Aspects of Dress 3 Prereq 6 hours social science; completion of one Tier I and three Tier II courses. Students engage in a multidisciplinary framework in considering the social importance of the body and dress. Cooperative course taught by WSU, open to UI students (HEC 417).

419 Apparel, Merchandising, and Textiles Field Trip V 1-3 May be repeated for credit; cumulative maximum 4 hours. Prereq certified majors or instructor's permission. Field trips to experience the textile and apparel industry from the perspective of professionals within a wide range of careers.

420 History of Fashion Design 3 Overview of fashion design and social history from mid-1800s to present.

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

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

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

492 Sketching and Graphic Communication 3 (1-4) Prereq FA 103. 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.
School of Architecture and Construction Management


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

The School of Architecture and Construction Management also offers a postprofessional course of study leading to a Master of Science in Architecture which emphasizes design related to the environment, technology and culture.

Most states require that an individual intending to become an architect hold an accredited degree. There are two types of degrees that are accredited by the National Architectural Accrediting Board (NAAB): (1) the Bachelor of Architecture, which requires a minimum of five years of study, and (2) the Master of Architecture, which requires a minimum of three years of study following an unrelated bachelor's degree or two years following a related pre-professional bachelor's degree. These professional degrees are structured to educate those who aspire to registration and licensure to practice as architects.

The four-year, pre-professional degree, where offered, is not accredited by NAAB. The preprofessional degree is useful to those wishing a foundation in the field of architecture, preparation for either continued education in a professional degree program or for employment options in fields related to architecture.

Architects are educated to perform professionally in a wide range of design and construction-related areas and assume important roles in the creation of a better built environment. They may work as independent practitioners, for large corporate firms or for governmental organizations. Architects are required to possess a high level of intuitive, analytical, and technical skills, combined with a deep understanding of human values and needs.

The architecture curriculum is planned so that foreign study and other off-campus programs can be incorporated in the fourth and fifth years. Options include a semester in Europe and a year of study in Spokane at WSU Spokane. In Spokane, students will be studying interdisciplinary issues with construction management, interior design and landscape architecture students. Foreign studies options are available to Pullman and Spokane students.

The construction manager is expected to understand a wide variety of structures that make up the built environment. This awareness includes properties of materials and construction systems and how they are utilized to produce buildings. The student in the program is encouraged to develop an inquisitive and inventive mind in order to deal with new construction methods and management techniques. It is also important that the graduate in construction management be knowledgeable in the field of business. Courses offered in a variety of departments are required to assure this breadth of understanding. Construction management students spend their fifth year of study in Spokane at the WSU branch campus.

The School of Architecture and Construction Management is a member of the Association of Collegiate Schools of Architecture and the Associated Schools of Construction. Student chapters of the American Institute of Architects and the Associated General Contractors provide linkages with their professional counterparts. The Bachelor of Architecture degree program is accredited by the National Architectural Accrediting Board. The Bachelor of Science in Construction Management degree program is accredited by the American Council for Construction Education.

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)

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

The 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 during the previous spring semester. To be considered, a student must have completed at least 26 semester credit hours of architectural program requirements, including the following courses, or their equivalents from other institutions: Arch 101, 103, 202, Engl 101, GenEd 110 or 111; Math 171 or 206 or Phys 101 or 201. A grade of C or better must be achieved in Arch 101 and 103. Selection is based on the student’s g.p.a. in the 26+ semester credit hours of required course work. If students do not complete Arch 101, 103, 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>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arch 201</td>
</tr>
<tr>
<td>Arch 207</td>
</tr>
<tr>
<td>Arch 220</td>
</tr>
<tr>
<td>Arch 330</td>
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<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
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</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 203</td>
</tr>
<tr>
<td>Arch 209</td>
</tr>
<tr>
<td>Arch 331</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
</tr>
<tr>
<td>Social [S,K] Sciences (GER)</td>
</tr>
</tbody>
</table>

Third-Year Admissions and Certification

Students not currently enrolled in architectural design courses at WSU must also fulfill GER requirements. This course adds no credit hours to the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

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

Third-Year Admissions and Certification

Third-year, 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 courses which must be included are all the first-year courses listed above plus Arch 201, 203, 207, 209, 220, 330, 331, physics, math and a physical science GER. The remainder of the credits will be made up of GER, electives, and fine arts courses required for graduation. The screening is done at the end of the WSU spring semester. Most of the 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 for their studies. In the event that there are not enough requests to fill positions at either location, a selection process will be implemented to fill remaining positions. In the third year, acceptance letter students will be notified as to whether they will spend their fourth or fifth year in Pullman or Spokane. By accepting admission to the third year, students also accept the conditions of their place of study during the fourth or fifth year.

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.

Junior Year

First Semester

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Arch 301</td>
</tr>
<tr>
<td>Arch 307</td>
</tr>
<tr>
<td>Arch 324</td>
</tr>
<tr>
<td>Arch 351</td>
</tr>
<tr>
<td>Arch 353</td>
</tr>
<tr>
<td>Arch 432</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arch 303</td>
</tr>
<tr>
<td>Arch 309</td>
</tr>
<tr>
<td>Arch 352</td>
</tr>
<tr>
<td>Arch 354</td>
</tr>
<tr>
<td>Arch 423 [M]</td>
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<tr>
<td>Arch 433</td>
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</tbody>
</table>

Senior Year

First Semester

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Arch 401</td>
</tr>
<tr>
<td>Arch 407</td>
</tr>
<tr>
<td>Arch 434</td>
</tr>
<tr>
<td>Arch 461</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
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</tbody>
</table>

Second Semester

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

Fifth Year

First Semester

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

Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arch 413</td>
</tr>
<tr>
<td>Arch 473</td>
</tr>
<tr>
<td>Arch Emphasis Electives</td>
</tr>
</tbody>
</table>

NOTE: Students offered positions in the second-year courses or third-year program must promptly notify the school of their acceptance of the position or the next alternate will be offered the position.

Students that are admitted must be registered for the fall semester and attend the first day of classes or lose their position.
Management is for those students who wish to work in the profession of construction management or in a management capacity in other facets of the construction industry.

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

PRECONSTRUCTION MANAGEMENT

Freshman Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 101 or M E 103</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>Geol 101 [P] (GER)</td>
<td>4</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>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Econ 101 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Math 171 [N] or 206 [N] (GER)</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

Sophomore Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 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>
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</thead>
<tbody>
<tr>
<td>Arch 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 the Tier II course. Honors students complete Honors Requirements in place of GERs.

Construction Management is a five-year program structured into two years of preconstruction management, two years of construction management, and one year of focused specialization. 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 from the school’s approved list are required for graduation, and should include one additional [M] course, for a total of two.

BACHELOR OF SCIENCE IN ARCHITECTURAL STUDIES (120 HOURS) ✔FYDA

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

The Bachelor of Science in Architectural 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) ✔FYDA (FIVE YEAR AGREEMENT)

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

Construction management is a five-year program structured into two years of preconstruction management, two years of construction management, and one year of focused specialization. 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...
School of Architecture and Construction Management

Description of Courses

Architectural Design I 3 (0-6) Prereq Arch 103, c// in Arch 107. Introduction to architectural design focusing on cultural/symbolic issues.

Architectural Design II 3 (0-6) Prereq Arch 201, c// in Arch 207. Introduction to architectural design as influenced by building technology, building systems and craft.

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

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

Architectural History I 1 Historic development of world architecture from prehistory to late medieval; social, technical and scientific influences.

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

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

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

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

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

Renaissance to Baroque Architecture 2 Western architecture from the Renaissance to Baroque to pioneers of modern architecture.

Materials and Construction I 2 Wood and masonry materials and construction systems; timber frame and bearing wall construction; other uses of wood and masonry.

Materials and Construction II 2 Prereq Arch 330. Continuation of Arch 330. Concrete and metal materials and construction systems; foundation, framing and roof systems.

Materials and Construction III 3 Prereq major in Arch or Cst M. Theory and application of various construction systems and material applications.

Computers in Architecture 2 (1-3) Prereq certif major in Arch or Cst M. Introduction to computer, terminology, and software applications, applicable to the field of architecture.

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.

Architectural Structures II 3 Prereq Arch 351. Continuation of Arch 351.

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

Structures Studio II 1 (0-2) Prereq Arch 352 or c//. Continuation of Arch 352.

Reading Examination V 1-3 Prereq major in Arch or Cst M. Examination of summer reading from lists prepared by the school.

Topics - Study Abroad 3 Special topics in architecture taught in NSCA's study abroad programs.

Architectural Design V 5 (0-10) Prereq Arch 303; c// in Arch 407. Advanced architectural design focusing on technology, systems and crafts of buildings.

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

Design Theory V 2 Prereq c// in Arch 401. Advanced design theory relating to systems, technology and crafts of buildings.

Design Theory VI 2 Prereq c// in Arch 403. Advanced design theory relating to social and environmental issues which influence housing design.

Architectural Design VII 6 (0-12) Prereq Arch 403. Comprehensive building design incorporating programming, Space planning, interiors, site planning and development.

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.

Programming and Decision Theory 3 Process of data collection, analysis and synthesis including cost management, organization, preparation and presentation of a program.

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.

Historic Preservation 2 Prereq major in Arch or Cst M. Theory and practice of architectural and urban conservation; description, evaluation and survey; restoration, rehabilitation, adaptive re-use; historic districts; benefits and incentives.

Architectural Theory I 2 Architectural criticism and theory as viewed from contemporary and historical precedents.

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

Site and Landscape Design 3 (1-4) Prereq Arch 203. Exploration of issues and development of skills relative to site and landscape design.

Environmental Control of Buildings I 3 Mechanical systems for buildings; building heating, ventilating, and air conditioning systems, heat flow concepts.

Environmental Control of Buildings II 3 Prereq Arch 432. Water supply, drainage, electrical and lighting systems for buildings.

Acoustics 1 Prereq major in Arch or Cst M. Sound theory, control, acoustics, and reinforcement systems as applied to architectural problems.

Contemporary Furniture Design 3 (1-4) Prereq Arch 103. Investigation of issues related to the design and fabrication of furniture; students design and fabricate projects in the school shop.

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.

Lighting Design 3 Prereq Arch 432. Engineering and aesthetics of lighting design for buildings; case studies, field trip, studio design exercises.

Theory of Urban Design and Development 3 Prereq major in Arch, Cst M, business or public administration. History, principles and theories of the physical design and development of cities.

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.

Computer-aided Design I 2 (1-2) Prereq basic computer course. Science and art of architectural computer-aided design for design discipline students.

Computer-aided Design II 2 (1-2) Prereq basic computer course. Continuation of Arch 451.

Field Sketching/Journal Keeping 3 (2-2) Prereq junior standing. Field-sketching/journal-keeping strategies to facilitate investigation and comprehension of the built environment.

Architectural Structures 3 Prereq Arch 352. Wind and seismic loads on architectural structures; high-rise structure systems; reinforced concrete and masonry structures.

Architectural Structures IV 3 Prereq Arch 352. Deflection theory; classical and computer analysis for statically indeterminate architectural structures.

Construction Communications/Codes 2 Prereq major in Arch. Codes; specifications, project manuals, and contract documents.

Professional Practice 2 Prereq Arch 472. Architect licensing process; techniques for and rationale of marketing architectural services; office organization and business methods applied to architecture.

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.

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).

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.

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.

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.
Construction Practice Management

M Construction Management Process
M Theory of Urban Design and Development

[42x160]2 (1-3) Prereq

Cst M

Construction Management

Methods and Procedures of Construction I
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
Methods and procedures for masonry construction, steel construction, wood and timber construction, high-rise construction; equipment, labor, and safety requirements.

Estimating I
Cost estimating related to building general construction work; methods and techniques applicable to quantity survey, pricing detailed estimates, and bid preparation.

Estimating II
Computerized construction cost estimating and cost management; personal computer software applications spreadsheet, file management, database, and custom-type programs.

Seminars in Urban and Regional Planning
Variable credit. S, F grading.

Special Problems
May be repeated for credit. S, F grading.

Research Methods
Research methods in architecture and urban design; experimental systems and design process.

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

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.

Computer Animation
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.

Advanced Architectural Studio/Laboratory
(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.

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

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

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

Description of Courses

Construction Management

Cst M

Introduction to Construction 2
Prereq major in Cst M. Construction industry overview; reading plans and specifications; analysis of the Business Roundtable’s Construction Industry Cost Effectiveness project.

[M] Theory of Urban Design and Development 3
Same as Arch 442.

[M] Construction Management Process 3
Design/construction process and project delivery systems/approaches; analysis of construction management: the construction management process.

Construction Practice Management 3
Business/management practices for a construction firm; building construction project management.

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. Cooperative course taught by WSU, open to UI students (Cst M 455).

Methods and Procedures of Construction I
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
Methods and procedures for masonry construction, steel construction, wood and timber construction, high-rise construction; equipment, labor, and safety requirements.

Estimating I
Cost estimating related to building general construction work; methods and techniques applicable to quantity survey, pricing detailed estimates, and bid preparation.

Estimating II
Computerized construction cost estimating and cost management; personal computer software applications spreadsheet, file management, database, and custom-type programs.

Seminars in Construction Management
May be repeated for credit; cumulative maximum 4 hours. Advanced study in construction practice management.

Seminars in Architectural Structures
May be repeated for credit; cumulative maximum 4 hours. Prereq Arch 301, 351 or c//. Advanced study in architectural structures systems.

Special Problems
May be repeated for credit. S, F grading.

Research Methods
2 Research methods in architecture and design disciplines; theory and methodology of research including historical survey, experimental systems and design process.

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

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.

Computer Animation
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.

Advanced Architectural Studio/Laboratory
(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.

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

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

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

Construction Management

Cst M

Construction Management Process 2
Prereq major in Cst M. Construction industry overview; reading plans and specifications; analysis of the Business Roundtable’s Construction Industry Cost Effectiveness project.

[M] Theory of Urban Design and Development 3
Same as Arch 442.

[M] Construction Management Process 3
Design/construction process and project delivery systems/approaches; analysis of construction management: the construction management process.

Construction Practice Management 3
Business/management practices for a construction firm; building construction project management.

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. Cooperative course taught by WSU, open to UI students (Cst M 455).

Methods and Procedures of Construction I
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
Methods and procedures for masonry construction, steel construction, wood and timber construction, high-rise construction; equipment, labor, and safety requirements.

Estimating I
Cost estimating related to building general construction work; methods and techniques applicable to quantity survey, pricing detailed estimates, and bid preparation.

Estimating II
Computerized construction cost estimating and cost management; personal computer software applications spreadsheet, file management, database, and custom-type programs.

Seminars in Construction Management
May be repeated for credit; cumulative maximum 4 hours. Advanced study in construction practice management.

Seminars in Architectural Structures
May be repeated for credit; cumulative maximum 4 hours. Prereq Arch 301, 351 or c//. Advanced study in architectural structures systems.

Special Problems
May be repeated for credit. S, F grading.

Research Methods
Research methods in architecture and design disciplines; theory and methodology of research including historical survey, experimental systems and design process.

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

History and Theory of Design Issues in Architecture
Advanced study of history and theory of architecture relating to environmental, cultural and technological design issues.

Computer Animation
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.

Advanced Architectural Studio/Laboratory
(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.

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

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

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

Description of Courses

Construction Management

Cst M

Introduction to Construction 2
Prereq major in Cst M. Construction industry overview; reading plans and specifications; analysis of the Business Roundtable’s Construction Industry Cost Effectiveness project.

[M] Theory of Urban Design and Development 3
Same as Arch 442.

[M] Construction Management Process 3
Design/construction process and project delivery systems/approaches; analysis of construction management: the construction management process.

Construction Practice Management 3
Business/management practices for a construction firm; building construction project management.

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. Cooperative course taught by WSU, open to UI students (Cst M 455).

Methods and Procedures of Construction I
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
Methods and procedures for masonry construction, steel construction, wood and timber construction, high-rise construction; equipment, labor, and safety requirements.

Estimating I
Cost estimating related to building general construction work; methods and techniques applicable to quantity survey, pricing detailed estimates, and bid preparation.

Estimating II
Computerized construction cost estimating and cost management; personal computer software applications spreadsheet, file management, database, and custom-type programs.

Seminars in Construction Management
May be repeated for credit; cumulative maximum 4 hours. Advanced study in construction practice management.

Seminars in Architectural Structures
May be repeated for credit; cumulative maximum 4 hours. Prereq Arch 301, 351 or c//. Advanced study in architectural structures systems.

Special Problems
May be repeated for credit. S, F grading.

Research Methods
Research methods in architecture and design disciplines; theory and methodology of research including historical survey, experimental systems and design process.

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May be repeated for credit; cumulative maximum 6 hours. Topics related to areas of emphasis in the program and student specialization.

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Computer Animation
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.

Advanced Architectural Studio/Laboratory
(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.

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May be repeated for credit. Prereq graduate student in Arch. Placement in an approved industrial, professional, or governmental situation for specialized or general experience.

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

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

Description of Courses

Construction Management

Cst M

Introduction to Construction 2
Prereq major in Cst M. Construction industry overview; reading plans and specifications; analysis of the Business Roundtable’s Construction Industry Cost Effectiveness project.

[M] Theory of Urban Design and Development 3
Same as Arch 442.

[M] Construction Management Process 3
Design/construction process and project delivery systems/approaches; analysis of construction management: the construction management process.

Construction Practice Management 3
Business/management practices for a construction firm; building construction project management.
South Asia: Asia 270, 272, 273, 275, 314 [M], 370, 470 [M], Asia electives.

Middle East: Asia 270, 272, 273, 275, 306, 472 [M], Asia electives.

Comprehensive: Asia 270, 272, 273, 275, 315 [M], 370, 373, 374, 470 [M], 476.

Students should consult their advisor to determine when courses are offered. 

3 Or relevant 300-400-level courses not mentioned which may be counted toward a major or minor if approved by the Director of the Asia Program.

MINOR:


All courses are crosslisted in the Asia Program.

Description of Courses

Astronomy

Astr 135 [P] Descriptive Astronomy 3 Physical characteristics and motions of the bodies of the solar system, stars, nebulae, and galaxies. Credit not granted for both Astr 345 and 135.

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 345 and 345.


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.

BIOCHEMISTRY AND BIOPHYSICS

See School of Molecular Biosciences.

School of Biological Sciences

Professor and Director, G. Thorgaard; Professor and Associate Director of Graduate Program, R. Alan Black; Professor and Associate Director of Undergraduate Program, H. Hosick; Professors, G. Edwards, V. Franceschi, K. Kardong, M. Ku, M. Laskowski, R. Mack, C. Omoto, C. Robbins, P. Schroeder, D. Soltis, P. Soltis, E. Uribe, G. Young; Associate Professors, R. Gomulkiewicz, L. Hufford, J. Mallatt, D. Miller, D. Moffett, S. Moffett, H. Schwabl, W. Turner, P. Verrell; Assistant Professors, J. Bishop, P. Carter, S. Hacker, R. Lee, M. Morgan; Adjunct Faculty, K. Brown, C. Davitt, J. Hallett, T. Ram; Professor Emeriti, J. Crane, L. Kirschen, A. Koch, J. Larson.

The School of Biological Sciences offers training in cellular, organismal, population and environmental biology, with an emphasis on plants and animals. The school offers Bachelor of Science programs in Biology and Zoology, Master of Science programs in Biology, Botany, and Zoology, and Ph.D. programs in Botany and Zoology. The school also offers or coordinates undergraduate minors in Zoology, Biology, and Ecology.

Facilities

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

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

Undergraduate Programs

A total of 120 credit hours are required for the Bachelor of Science degree in Biology. Of these credit hours, a minimum of 40 must be 300-400-level, and a minimum of 40 must be in biological sciences. Two of the biology courses must satisfy the "Writing in the Major" [M] requirement. Additionally, students must have two years of one foreign language in high school or take one year in college of a modern foreign language before graduation. Students must also meet the General Education Requirements. The introductory biological sciences courses provide background in the concepts common to life sciences and an overview of the diversity of animals, plants, and microorganisms. Honors students complete Honors Requirements in place of General Education Requirements. Advanced biological sciences courses probe specific areas in depth.

Four options are available for the Bachelor of Science degree in Biology: Biology Education, Botany, General Biology, and Prephysical Therapy (Prehealth). The Biological Education option is particularly suitable for students who would like to teach Biology at the high school level. The Botany option is available for students with a special interest in plants and is particularly suitable for those who would like to pursue graduate studies. The General Biology option provides very appropriate, broad training in the life sciences, particularly for students seeking to continue in professional or graduate school. The Prephysical Therapy/Prehealth option prepares students specifically for health-related careers.

The flexible curriculum leading to a Zoology degree meets the needs of students with various interests and goals. The General Zoology option provides a broad, solid foundation in zoology. It is aimed especially at students desiring a well-rounded background for further professional studies, such as in graduate or veterinary school. Students aspiring to enter medical or dental school should find the Premedical/Preental option to be particularly appropriate. Another option is the course program in Ecology. This program provides the graduate with a broadly-based ecological understanding applicable to such fields as environmental and wildlife biology. The option in animal care prepares students for careers involving animal care and maintenance in research institutions, zoos, aquaria, and clinics.
An undergraduate preparation in either Biology or Zoology provides a student with the basis for pursuing vocational opportunities in ecology, laboratory research and technology, human health, animal health and welfare, and a variety of other biological specializations.

Graduate Programs
At the graduate level, the school awards Masters of Science degrees in Biology, Botany, and Zoology, and doctoral degrees in Botany and Zoology. Faculty interests and research programs are diverse, ranging from cellular and developmental biology, through various aspects of organismal biology to ecology and evolutionary biology. A list of specific faculty interests can be obtained from our website of by writing to the school.

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

BIOLOGY

FIRST YEAR REQUIREMENTS
The first year requirements are common to all biology degree programs:

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

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

BIology EDUCATION DEGREE PROGRAM (137 HOURS)

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

Second Semester
- Arts & Humanities [H,G] (GER) 3
- BC/BP 364 4
- GenCB 301 4
- Phys 102 [P] (GER) 4
- Social Sciences [S,K] (GER) 3

Junior Year
First Semester
- Biology Elective 3

Second Semester
- Arts & Humanities [H,G] (GER) 3
- Biologic Elective 3
- Communication Proficiency [C,W] (GER) 3
- Phys 101 [P] (GER) 4

Senior Year
First Semester
- Biology Elective 3

Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Micro 101 or 301 4
- Phys 102 [P] (GER) 4
- Zool 251 4

Prephysical Therapy (prehealth) Degree Program (120 Hours) ☑FYDA

Sophomore Year
First Semester
- Arts & Humanities [H,G] (GER) 3
- Chem 240 4
- ComSt 102 [C] (GER) 3
- Phys 101 [P] (GER) 4
- Psych 105 [S] (GER) 3
- Soc 101 [S] (GER) 3

Second Semester
- Arts & Humanities [H,G] (GER) 3
- Micro 101 or 301 4
- Phys 102 [P] (GER) 4
- Zool 251 4

Junior Year
First Semester
- Biology Elective 3

Second Semester
- Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) 3
- Bot 320 3
- Bot 332 4
- Intercultural [I,G,K] (GER) 3
- Electives 2 or 3

Senior Year
First Semester
- Biology Elective 3

Second Semester
- Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) 3

GENERAL BIOLOGY DEGREE PROGRAM (120 HOURS) ☑FYDA

Sophomore Year
First Semester
- Arts & Humanities [H,G] (GER) 3
- Chem 240 4

Graduate Programs
At the graduate level, the school awards Masters of Science degrees in Biology, Botany, and Zoology, and doctoral degrees in Botany and Zoology. Faculty interests and research programs are diverse, ranging from cellular and developmental biology, through various aspects of organismal biology to ecology and evolutionary biology. A list of specific faculty interests can be obtained from our website of by writing to the school.

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

BIOLOGY

FIRST YEAR REQUIREMENTS
The first year requirements are common to all biology degree programs:

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

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

BIology EDUCATION DEGREE PROGRAM (137 HOURS)

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

Second Semester
- Arts & Humanities [H,G] (GER) 3
- BC/BP 364 4
- GenCB 301 4
- Phys 102 [P] (GER) 4
- Social Sciences [S,K] (GER) 3

Junior Year
First Semester
- Biology Elective 3

Second Semester
- Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) 3
- Bot 320 3
- Bot 332 4
- Intercultural [I,G,K] (GER) 3
- Electives 2 or 3

Senior Year
First Semester
- Biology Elective 3

Second Semester
- Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) 3

PREPHYSICAL THERAPY (PREHEALTH) DEGREE PROGRAM (120 HOURS) ☑FYDA

Sophomore Year
First Semester
- Arts & Humanities [H,G] (GER) 3
- Chem 240 4
- ComSt 102 [C] (GER) 3
- Phys 101 [P] (GER) 4
- Psych 105 [S] (GER) 3
- Soc 101 [S] (GER) 3

Second Semester
- Arts & Humanities [H,G] (GER) 3
- Micro 101 or 301 4
- Phys 102 [P] (GER) 4
- Zool 251 4

Junior Year
First Semester
- Biology Elective 3

Second Semester
- Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) 3

Senior Year
First Semester
- Biology Elective 3

Second Semester
- Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) 3

GENERAL BIOLOGY DEGREE PROGRAM (120 HOURS) ☑FYDA

Sophomore Year
First Semester
- Arts & Humanities [H,G] (GER) 3
- Chem 240 4
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 Biol 372; a maximum of 2 hours of 499 credits. Additional hours from Microbiology, Biology, Botany, and Genetics and Cell Biology, 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 in Botany or Zoology

Students with undergraduate majors in such fields as microbiology, biology, botany, zoology, and plant or animal sciences in the College of Agriculture and Home Economics may be prepared for graduate study in biology. Graduate Record Examination scores from the general aptitude and advanced biology sections are required.

ZOOLOGY

Candidates for the Bachelor of Science in Zoology must fulfill the university and the College of Sciences requirements for graduation as described elsewhere in this catalog. The math and science components of those requirements are fulfilled 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.

ZOOLOGY 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: Biol 103 and 104; Biol 372 and 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 322, 412, 423, 428, 430 [M]; two from Entom 343 and 344; 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

- Biol 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

- Biol 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) 3
- 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 4

Junior Year

First Semester

- Arts & Humanities [H,G] (GER) 3
- Program Option Course 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
- Biol 372 [M] 4
- GenCB 301 4
- Phys 102 [P] (GER) 4
- Social Sciences [S,K] (GER) 3

Senior Year

First Semester

- Arts & Humanities, Intercultural, or Social Sciences [H,G,I,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 4 or 5
- Tier III Capstone (GER) 3
- Zool 350 or 353 4

1 Premedical and preprofessional 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.

2 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.

3 Consult the list of courses in the course-program options below or see advisor for other options.

4 Students selecting the General Zoology Option or the Ecology Option should take Biol 372.

5 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 preveterinary.)
Preprofessional/Preclinical 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 334 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
First Semester
Biol 103 [B] (GER) 3
Chem 105 [P] (GER) 3
GenEd 110 [A] (GER) 3
Math 140 [N] or 171 [N] (GER) 3
Second Semester
Biol 104 [B] (GER) 3
Chem 106 [P] (GER) 3
Communication Proficiency [C,W] (GER) 3
Engl 110 [W] (GER) 3
GenEd 111 [A] (GER) 3

 Sophomore Year
First Semester
Arts & Humanities [H,G] (GER) 3
Chem 240 or 340 & 341 3
Phys 101 [P] (GER) 3
Social Sciences [S,K] (GER) 3
Second Semester
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Bc/Bp 364 4
GenCB 301 4
Intercultural [J,G,K] (GER) 3
Phys 102 [P] (GER) 3
 tier III Capstone (GER) 3
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
First Semester
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Program Option Courses or Electives 6-8
Zool 320, 322, or 324 4
Zool 393 [M] 2
Complete Writing Portfolio
Second Semester
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Biol 372 [M] or Zool 330 3 or 4
Program Option Course 3 or 4
Zool 320, 322, or 324 4

Senior Year
First Semester
Program Option Courses or Electives 7 or 8
Zool 350 or 353; 352 & 452; or 450 & 452 4 or 5
Zool 405 3
Second Semester
Program Option Courses or Electives 7-9
Tier III Capstone (GER) 3
Zool 350 or 353; 352 & 452; or 450 & 452 4 or 5
1 Pre-Veterinary core curriculum.
2 Math 107 may be needed before enrolling in calculus, depending on math placement score.

Premedical and Preclinical Studies
Washington State University has no certified major or degree specifically designated as premedicne or predentistry. The above described Premedical/Preclinical 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: Biol 103, 104; math through calculus; chemistry through organic (Chem 240); Phys 101, 102; a course in genetics; part of the non-science university requirements; and a year of foreign language if two years were not previously completed in high school.

Description of Courses
Biological Science
Biol 101 (Bio S) [B] Direction in Biological Sciences 3 Understanding biology as a science and its effect on issues within society. Credit not granted for more than one of Biol 101, 102, 103.
102 (Bio S) [B] General Biology 4 (3-3) Not open to students who have taken a college-level course in general biology or botany. Nature of living things, methods, and function of diverse organisms. Credit not granted for Biol 102 and 101, 103 or 105.
103 (Bio S) [B] Introductory Biology 4 (3-3) Prereq one semester Chem or cll. First semester of a one-year sequence. Recommended for pre-professional students. The nature of life, structure, function, genetics, growth, and development. Credit not granted for Biol 103 and 101, 102, or 105.
104 (Bio S) [B] Introductory Biology 4 (3-3) Prereq Biol 101 or 102 with a grade of A or B may be substituted; two semesters Chem or cll. Continuation of Biol 103. Biology of organisms; plants, animals, bacteria, ecology, and evolution.
105 (Bio S) [B] Biological Science Laboratory 1 (0-3) Prereq college-level nonlaboratory general biology course. Elements of structure and function of organisms. For non-majors in the biological sciences. Credit not granted for more than one of Biol 102, 103, 105.
106 (Bio S) [B] Biological Science Laboratory 1 (0-3) Prereq college-level nonlaboratory general biology course. Elements of structure and function of organisms. For non-majors in the biological sciences. Credit not granted for more than one of Biol 102, 103, 105.
150 (GenCB) [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.
201 (Bio S) [B] Contemporary Biology 1 Prereq Biol 101, 102, 103, Bot 120, or Micro 101. Bio logical information that provides a framework for understanding life processes; impact of biological information on human affairs.
298 (Bio S) [B] Biological Science Honors 4 (3-3) Open only to students in the Honors College.
301 General Genetics 4 Same as GenCB 301.
372 (Bio S) [M] General Ecology 4 (3-3) Prereq Biol 104, one semester Chem. Relationship of organisms with physical and biotic components of their environment; at the population, community, and ecosystem level.
401 (Bio S) [T] Plants and People 3 Prereq Biol 102, 104, or Bot 120; completion of one Tier I and three Tier II courses. Relationships between plants and people, especially cultural and economic applications of plants.
430 (Bio S) Methods of Teaching Science 3 (2-3) Prereq T & L 303; 12 hours science. Methods, philosophy, and structure of science; application in teaching middle and secondary school science courses.
452 (GenCB, Zool) [M] Cell Biology Laboratory 2 (1-3) or 3 (1-6) Prereq cell biology or physiology. Experiments and techniques in cell biology and physiology.
465 (Bio S) Field Stream Ecology 2 Prereq general ecology. Ecological roles of immature insects in different size streams; pattern changes along the stream continuum; other ecological characteristics.
474 (Bio S) [M] Human Ecology 3 Prereq Biol 104. Biological basis of interdisciplinary human ecology; applicability of ecological principles to Homo sapiens; emergence of humans as the ecological dominant.
495 (Bio S) Internship in Biology V 2-4 May be repeated for credit; cumulative maximum 8 hours. Prereq major in Biol. By interview only. Experience in work related to specific career interests. S, F grading.
### School of Biological Sciences

### Bio (S) [M] Senior Thesis 3 Prereq senior standing, 4 research hours. Experimental/literature research leading to written thesis and oral examination.

### Bio (S) Special Problems V 1–4 May be repeated for credit. S, F grading.

### GenCB 511 Introduction to Population Genetics 3 Prereq GenCB 301. Survey of basic population and quantitative genetics. Cooperative course taught by WSU, open to UI students (For 511/Gen 505).

### GenCB, Bot, Zool Conservation Genetics 2 Prereq GenCB 301. Genetic studies and approaches relevant to efforts to conserve threatened and endangered populations of organisms.

### GenCB, Bot, Zool Quantitative Genetics 2 Prereq Biol 511. Fundamentals of quantitative genetics; evolutionary quantitative genetics.

### GenCB 512 Molecular Population Genetics and Evolution 2 Prereq Biol 511. Evolutionary change of molecular sequences; genetic distance and phylogeny; genomic evolution.

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

### Bio (S) Special Projects or Independent Study Variable credit. S, F grading.

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

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

### Botany

#### Bot

1. **[B] Introduction to Botany** 4 (3-3) A survey of the plant kingdom; structure and function of vascular plants.

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

3. **Plant Biotechnology** 3 Prereq Bot 120, GenCB 301. Introduction to the genetic engineering of plants.

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

5. **Principles of Organic Evolution** 3 Same as Zool 405. Credit not granted for both Bot 405 and 505.

6. **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.

7. **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.

8. **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.

9. **General Plant Pathology** 3 Same as PI P 429.

10. **Principles of Plant Systematics** 3 Prereq Bot 332. Systematic theory: history and current views; approaches of phylogeny reconstruction and classification. Credit not granted for both Bot 430 and 530.

11. **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.

12. **Evolutionary Ecology of Populations** 3 Same as Zool 448. Credit not granted for both Bot 448 and 548.

13. **Plant Ecophysiology** 3 Prereq Bot 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.

14. **Community Ecology** 3 Prereq Bot 104. Assembly, essential properties, levels of interactions, succession, and stability of natural communities; emphasizes an experimental approach to community investigation. Credit not granted for both Bot 462 and 562.

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

16. **Special Problems** V 1–4 May be repeated for credit. S, F grading.

17. **Seminar** 1 May be repeated for credit. Prereq 20 hours Bot. S, F grading.


19. **Principles of Organic Evolution** 3 Graduate-level counterpart of Bot 405; additional requirements. Credit not granted for both Bot 405 and 505.

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

21. **Plant Anatomy** 4 (2-6) Graduate-level counterpart of Bot 410; additional requirements. Credit not granted for both Bot 410 and 510.

22. **Plant Cell Biology** 3 Function of the plant cell with emphasis on current research; topics include membrane biology, protein targeting, and molecular signaling.

23. **Molecular Mechanisms of Plant Development** Prereq Bot 320. Physiology of growth; metabolism during development and reproduction.

24. **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 bio-molecules.

25. **Seminar in Plant Physiology** 1 May be repeated for credit. Same as CropS 515.

26. **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.

27. **Stress Physiology of Plants** 3 Graduate-level counterpart of Bot 417; additional requirements. Credit not granted for both Bot 417 and 517.


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

30. **Principles of Plant Systematics** 3 Graduate-level counterpart of Bot 430; additional requirements. Credit not granted for both Bot 430 and 530.


32. **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.

33. **Evolutionary Ecology** 3 Same as Zool 548. Credit not granted for both Bot 448 and 548.

34. **Plant Ecophysiology** 3 Graduate-level counterpart of Bot 460; additional requirements. Credit not granted for both Bot 460 and 560.

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

36. **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).

37. **Advanced Topics in Botany** V 1–4 May be repeated for credit. Recent research in plant science.

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


40. **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.

### Electron Microscopy

#### E Mic

1. **Microtechnique** 4 (2-6) Same as Bot 406. Credit not granted for both E Mic 406 and 506.

2. **Microtechnique** 4 (2-6) Same as Bot 506. Credit not granted for both E Mic 406 and 506.

3. **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.

4. **Special Projects in Electron Microscopy** 2 (0-6) or 3 (0-9) May be repeated for credit. By interview only. Practical training in one or more areas of electron microscopy; TEM, SEM, ultramicroscopy, specimen processing, darkroom procedures and light microscopy.

5. **Special Topics in Electron Microscopy** 1 May be repeated for credit; cumulative maximum 4 hours. S, F grading.

### Zoology

#### Zool

1. **[B] Animal Natural History** 3 Identification, life history, habitat relations, ecology, behavior, and conservation of animals commonly found in the Pacific Northwest.


3. **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.

4. **General Zoology Laboratory** 1 (0-3) Invertebrate and vertebrate animals; structural features, adaptation, diversity and systematic relationships,
251 Introductory Human Physiology 4 (3-3) Rec one semester Chem. Basic physiological processes in humans from the cellular to the organismal level.


314 Fish Ecology 3 Prereq Biol 103, 104. Examination of physical, chemical, and biological factors that affect fish populations and communities, with emphasis on environmental stressors. Cooperative course taught by UI (Fish 314), open to WSU students.

315 Gross and Microanatomy 4 (3-3) Prereq one semester Biol. 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 Biol 104. Evolution of vertebrates and their organ systems; correlation of structural modification with function.


331 Current Debates on the Environment 1 Prereq Biol 104. Physiology of non-vertebrates and their organs; effects of structural modification with function.

350 Comparative Physiology 4 (3-3) Prereq Biol 104. Analysis of systems and integrative physiology with an emphasis on evolutionary adaptation among mammalian and non-mammalian vertebrates.

352 Cell Physiology 3 Prereq Biol 104, organic chem; Rec c/l in Zool 452. Function and control at the cell-tissue level.

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

359 [M] Seminar I 2 Literature investigation, oral presentation and written reports of selected topics in zoology.

394 Medicine as a Career 1 Prereq junior standing, by interview only. Current issues in medicine, ethical, financial, and personal aspects of medical practice.

395 Seminar II I 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 Biol 102, 103, or 298; junior standing; completion of one Tier I and two Tier II courses. Biological basis of body function, role of medical technology in health care of women, impact of social and cultural perspectives of female role.

410 Marine Ecology 3 Prereq 6 hours of physical and/or biological science. Marine environments: their ecology, role in human development, and hazards to their well being.

411 Limnology 4 Prereq general ecology. Physical, chemical, and biological features of lakes and streams. Field trips required. Cooperative course taught by UI (Fish 415), open to WSU students.

412 Biology and Management of Fishes 3 (2-3) Prereq Biol 104. Evolution, identification, life history, and management of important fish species.

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


421 Vertebrate Histology and Organology 4 (2-6) Prereq Biol 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 non-game wildlife in relation to current land-use practices. Cooperative course taught by UI (WIF 445), open to WSU students.


451 Comparative Vertebrate Reproduction 3 Prereq Biol 104. Physiology of major events in reproductive cycles of vertebrates, emphasizing mammals. Credit not granted for both Zool 451 and 551. Cooperative course taught by UI (Zool 411), open to WSU students.

460 Environmental Physiology 3 Prereq Zool 350 or 353. Individual and evolutionary adaptations to changing environments with emphasis on recent literature. Credit not granted for both Zool 460 and 560.

480 [M] Writing in Biology 2 Discussion and practice in relating thinking and writing; popular and professional communication in biology.

486 Marine Invertebrate Communities 1 (0-3) Prereq Biol 104. One-week field trip to Shannon Point Laboratory to gain first-hand experience with several marine habitats. Cooperative course taught jointly by WSU and UI (Zool 486).

490 Topics in Zoology V 1-3 May be repeated for credit; cumulative maximum 6 hours.


497 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Academic traineeship in laboratory teaching and tutoring.

498 Career Experience Internship V 1-4 May be repeated for credit; cumulative maximum 4 hours. By interview only. Experience in work related to specific career area. S, F grading.

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

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

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

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

512 Aquatic Pollution Ecology 3 Prereq Zool 411 or by interview only. Principles and working examples of the ecology of polluted aquatic streams and lake habitats. Two-one day field trips. Cooperative course taught by UI (Fish 512), 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 513), open to WSU students.

516 Fish Genetics 2 Same as GenCB 516.

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

526 Population Analysis 1 Same as NATRS 526.

529 Principles of Population Dynamics 1 Same as NATRS 529.

530 General and Comparative Neurophysiology 4 Same as Neuro 530.

535 Biogeography 2 Prereq 300-400 level course at organismal level. Principles underlying patterns of plant and animal distribution in space and time.

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

543 Predator-Prey Dynamics 1 Same as Entom 543.

548 Evolutionary Ecology 3 Rec Biol 372; Zool 405. Evolutionary dynamics of natural populations and the co-evolution of species. Cooperative course taught by WSU, open to UI students (WLF 548).

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

552 Comparative Physiology 3 Prereq general physiology course. Adaptations of excretion, respiration, circulation, and metabolism in vertebrate and invertebrate animals.
BIOLOGICAL 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 engineering methods, they design processes and devices that meet specific needs and yet make 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 graduates for engineering practice or 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 early introduction to biological systems engineering, including design, and continues to expand that understanding and design experience throughout the four years of study. Students gain computer experience from the first semester and build capabilities for biological system analysis in each subsequent year. The BSysE 110, 115, 210, 310, 411, 420 course sequence provides a central core in analysis and design that is coupled to the engineering, biological, chemical and physical sciences, communications, societal awareness, professionalism and ethics. This program attracts exceptionally well-qualified students and prepares graduates through close interactions, with other students and faculty. This curriculum is unique in that it yields a professional engineering baccalaureate degree that can satisfy pre-veterinary and pre-medical requirements.

Students are offered flexibility in selection of an area of emphasis within biological systems engineering. Areas of emphasis currently available are (1) water, soil and environmental engineering; (2) food engineering; and (3) human/animal systems engineering. Other emphasis areas may be defined to fit a student’s interest (e.g., bio-material processing, plant and animal environmental systems). Advanced engineering design electives build on the background in biological systems engineering design and related technical biological science electives to provide depth in the selected area of emphasis.

The Bachelor of Science degree in Biological Systems Engineering is accredited by the Accreditation Board for Engineering and Technology. Enrollment in the 300-400-level curriculum is restricted to certified majors. Requirements for certification are available from the department.

The Department of Biological Systems Engineering also participates in the College of Engineering and Architecture’s programs leading to the degrees of Master of Science in Engineering and Doctor of Philosophy (Engineering Science).

Degree Program Requirements

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

The Bachelor of Science degree in Biological Systems Engineering requires a minimum of 128 semester hours. At least 45 of the total hours required for the bachelor’s degree in this program must be 300-400-level courses.

BIOLOGICAL SYSTEMS ENGINEERING DEGREE PROGRAM (128 HOURS) ✉ FYDA

Freshman Year

First Semester

BSysE 110 4
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 4
GenEd 110 [A] (GER) 1
Math 171 [N] (GER) 4

Second Semester

Biol 103 [B] (GER) 4
BSysE 115 1
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 1
Math 172 4

Sophomore Year

First Semester

Biol 104 [B] (GER) 4
BSysE 210 3
C E 211 3
Cpt 520 2
Math 273 2
Phys 201 [P] (GER) 4

Second Semester

BSysE 215 1
C E 212 3
Chem 240, or 340 and 341 4 or 5
Econ 101 [S] or 102 [S] (GER) 3
Math 315 3
Technical Biological Science Elective 3

Junior Year

First Semester

BSysE 320 4
Ch E 301 or M E 301 3
Ch E 310 3
E E 304 2
Phys 202 [P] (GER) 4
Complete Writing Portfolio

Second Semester

BC/BP 364 or Soils 421 3
BSysE 310 3
C E 315 or Ch E 332 3
Engineering Design Elective 3
Technical Biological Science or Engineering Elective 3

Senior Year

First Semester

Arts & Humanities [H,G] (GER) 3
Department of Biological Systems Engineering

BSysE 410 3
BSysE 441 3
Engineering Design Elective 3
Technical Biological Science Elective 3

Second Semester

BSysE 411 3
Engl 402 [W] (GER) 3
Engineering Design Elective 3
Intercultural [I.G.K] (GER) 3
Tier III Capstone [H, G, S.K] (GER) 3

1 Select from approved list of Technical Biological Science Electives.
2 Select from approved lists of Technical Biological Science Electives or of Engineering Electives.
3 Select from approved list of Engineering Design Electives.

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 design of living systems; social factors influencing design; computer-based engineering tools.

115 Computation and Visualization for Engineers 1 (0-3) Computer tools for computation and visualization in engineering; use of software for CAD, project management, and engineering computation.

120 Innovation in Design 2 Same as M E 120.

210 Biological Systems Analysis and Design 3 (2-3) Prereq Biol 103, Chem 105; Cpt S 153 or 203. Application of computer-assisted tools for the engineering analysis and design of biological systems.

215 (398) Professional Preparation for Biological Systems Engineering 1 May be repeated for credit; cumulative maximum 3 hours. Preparation for professional, ethical, and social issues and for career development in biological engineering profession. S, F grading.

310 Biological Dynamics for System Design 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).

320 [M] Mechanics of Biomaterials 4 (3-3) Prereq BSysE 210, C E 211. Composition of biological materials, mechanical and thermal properties, chemical and biological changes. Cooperative course taught by WSU, open to UI students (BSyE 386).

339 Perspectives in Biomedical Engineering 1 May be repeated for credit; cumulative maximum 3 hours. Prereq BSysE 210 or c/f. 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 (AE 353). Credit not granted for both BSysE 351 and 353.

352 Introduction to Soil and Water Engineering 3 (2-3) Prereq BSysE 351, C E 315, SoilS 201. Fundamentals of soil and water engineering; agricultural hydrology and hydraulics, erosion control, and water quality. Cooperative course taught by UI (Age 352), open to WSU students.

353 Hydrology 3 Prereq one semester of calculus. Analysis of precipitation and runoff events; principles of climatology, evaporation, infiltration, and snowmelt. Credit not granted for both BSysE 351 and 353. Cooperative course taught by UI (Age 351), open to WSU students.

362 Agricultural Power and Machinery 3 (2-3) Prereq M E 301 or c/f. 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 UI students (AE and FST 372).

380 Electric Power and Controls 3 (2-3) Prereq E E 304. Design and on-farm use of electric equipment and systems; design of electronic control systems for agricultural applications. Cooperative course taught by UI (Age 462), open to WSU students.

410 (311) [M] Project Design I 3 Prereq BSysE 310, 320. Part I of capstone engineering design project; customer needs, design requirements, conceptual design, business plan, project proposal, and presentation.

411 Project Design II 3 (1-6) Prereq BSysE 311 or c/f. 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, EE 489 or M E 481; Zoology 353. Interactions between cells, organs, and whole organisms: physiological and engineering design structures, especially in protheses.

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 waste, 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/f. Materials handling and processing, psycho-metrics, 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 BSysE 474 and 574. Cooperative course taught by UI (Age 474), open to WSU students.

482 Food Process Engineering Design 3 Prereq BSysE 481 or Ch E 330. Design of food processing systems; design and simulation of sterilization and pasteurization processes in foods. Credit not granted for both BSysE 482 and 582. Cooperative course taught by WSU, open to UI students (AE and FST 582).

483 Food Separation Processes Design 3 Prereq BSysE 482. Design of food separation unit operations including concentration, dehydration, and membrane processes. Credit not granted for both BSysE 483 and 583. Cooperative course taught by WSU, open to UI students (BSyE 483).

484 Thermal Processing of Foods 3 (2-3) Prereq Ch E 332 or M E 404. Principles and practices of food preservation methods based on application of heat.

486 Food Rheology 3 (2-3) Prereq BSysE 481. Principles and applications on the rheology of foods, including fundamental and empirical equations; viscoselasticity; normal forces, time dependency and instrumentation. Credit not granted for both BSysE 486 and 586. Cooperative course taught by WSU, open to UI students (BSyE 486).

487 Food Plant Design 3 Prereq BSysE 482. Preliminary design of food processing plants, including engineering principles, equipment selection, economic analysis, and regulatory aspects. Cooperative course taught by WSU, open to UI students (BSyE 487).

488 Food Powders 3 Engineering principles applied to handling and processing of food powders, including particle size distribution, morphology, physical properties, agglomeration, attrition, segregation. Credit not granted for both BSysE 488 and 588. Cooperative course taught by WSU, open to UI students (BSyE 488).

491 Advanced Topics V 1-3 May be repeated for credit; cumulative maximum 8 hours. Prereq junior standing.

495 Internship in Biological Systems Engineering V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq sophomore standing. Prior approval of supervisor and advisor required. Work experience related to academic learning. S, F grading.

496 Conservation Engineering 3 (2-3) Prereq BSysE 452. Predicting occurrence and disposition of water on agricultural watersheds; hydrologic modeling; erosion processes; control structures and methods; construction practices. Credit not granted for both BSysE 496 and 596. Cooperative course taught by WSU, open to UI students (Age 496).

499 Special Problems V 1-4 May be repeated for credit. S, F grading.
584 Thermal Processing of Foods 3 (2-3) Prereq Ch E 332 or M E 404; graduate standing. Principles and practices of food preservation methods based on application of heat.

586 Food Rheology 3 (2-3) Graduate-level counterpart of BSysE 486; additional requirements. Credit not granted for both BSysE 486 and 586. Cooperative course taught by WSU, open to UI students (BSYE 586).

587 Food Plant Design 3 Graduate-level counterpart of BSysE 487; additional requirements. Credit not granted for both BSysE 487 and 587. Cooperative course taught by WSU, open to UI students (BSYE 588).

589 Advanced Theory of Irrigation Water Requirement 3 Energy balance and consumptive use of water; influence on farm and project irrigation system design criteria, management, and efficiencies. Cooperative course taught by WSU, open to UI students (AgE 593).

592 Advanced Theory and Design of Irrigation Systems 3 (2-3) Prereq BSysE 453 or 590. Design and development of irrigation water application systems. Cooperative course taught by WSU, open to UI students (AgE 595).

593 Drainage Engineering 3 (2-3) Prereq BSysE 352 or 453. Engineering principles applied to surface and sub-surface drainage problems; investigation, design, materials, and construction of drainage systems. Cooperative course taught by WSU, open to UI students (AgE 596).

596 Graduate Seminar 1 May be repeated for credit. Required of all graduate students in biological systems engineering. S, F grading.

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

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

800 Doctoral Research, Dissertation, and/or Examination Variable credit. (For PhD in engineering science only.) S, F grading.

Agricultural Technology and Management

The Department of Biological Systems Engineering prepares students in the Agricultural Technology and Management Program 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

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

The Bachelor of Science degree in Agricultural Technology and Management requires a minimum of 122 credit hours for graduation. Of these, at least 40 hours including 12 hours of Ag electives must be courses numbered 300 or above.

Agricultural Technology and Management Degree Program (122 Hours)
Agricultural Technology and Management

Second Semester  
300-400-level Ag or Business Elective\(^1\) 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  
300-400-level Ag Ec or Business Elective\(^1\) 3
300-400-level Ag or Business Elective\(^1\) 3
300-400-level Elective 3
AgTM 315 3
Intercultural [I,G,K] (GER) 3

Second Semester  
300-400-level Ag or Business Elective\(^1\) 3
300-400-level AgTM Elective 3
AgTM 433 [M] 3
Elective 2
Tier III Capstone (GER) 3

\(^1\) Students must complete one of the following sequences: Ag Ec 350/450, 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  For freshmen. Basic skills for analyzing, solving, and presenting problems in modern agriculture. 201 Metal Fabrication  (1-6) Theory, applications, and practices of welding, machining, and associated techniques in fabricating with metals. 203 Agricultural Structures  (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 (AgTM 203). 210 Small Engines  (1-3) Repair, adjustment, protective maintenance, operation, and safety of small gasoline engines. Cooperative course taught by UI (AgTM 210), open to WSU students. 305 Agricultural Machinary Systems  (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 (AgTM 305). 306 Agricultural Structures and Environmental Systems  (2-3) Planning farm buildings, construction materials, beam and column design, insulation and ventilation for environmental control. Cooperative course taught by UI (AgTM 306), open to WSU students. 312 Engines and Tractors  (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 (AgTM 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  (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  (2-3-3) System component selection; layout, installation, operation of irrigation systems for turf and landscape plantings; basic system hydraulics; efficient water use. 402 Methods, Materials, and Machines for Teaching Ag Mechanics  (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  (1-3) May be repeated for credit; cumulative maximum 2 hours. Teaching techniques for laboratory projects in agricultural mechanics. 409 Agricultural Tractors and Power Units  (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 (AgTM 409), open to WSU students. 413 Human and Machinery Risk Management  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  (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  (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  (3-2-3) 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  (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  (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  
Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to the total GERS as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERS.

The Department of 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 field.

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 scientists, a total of 15 hours in soils is required. SoilS 201, 301, 413, 421, and 451 are recommended.

Freshman Year  
First Semester  
Ag Elective 3
Ag Requirements\(^1\) 3
Chem 101 [P] (GER) 4
Engl 101 [W] (GER) 4
H D 205 [C] (GER) 3


**Agricultural Education**

**317 Secondary School Practicum** May be repeated for credit; cumulative maximum 6 hours. Prereq T & L 301. Ag Ed classroom experience prior to student teaching to provide observation, reflection, and limited teaching responsibilities.

**342 Methods of Teaching Agriculture** 3 Prereq T & L 303 and admitted to College of Education. Methods and strategies for teaching agricultural science.

**345 Agriculture Curriculum Development and Theory** 2 (1-3) Prereq certified Ag Ed major, admission to program. Planning and developing of an agricultural science curriculum to meet the specific needs of a given community.

**401 Adult Programs and Development** 3 Organizing and conducting adult programs in agriculture, management, program planning, learning styles, resources; strategies for formal and non-formal adult programs.

**407 Directed Teaching, Agriculture and Home Economics** V 4-16 Prereq Ag Ed 342 or 442, 471. Supervised teaching in public schools for agricultural education or home economics education majors. S, F grading.

**440 [M] Principles of Vocational Education** 2 or 3 Prereq 9 hours in Educ. Local, state, and national vocational technical educational legislation, policies, programs, and organizations.

**442 Program Planning in Agricultural Education** 2 Prereq Ag Ed 342. Organization and management of a total vocational agricultural program.

**470 Directed Work Experience** V 1-3 May be repeated for credit; cumulative maximum 6 hours. Job analysis and description; weekly work experience reports and analysis coordinated with problems related to the student’s employment in an approved occupation.

**471 Student Organizations in Agricultural Education** 2 Prereq certified College of Education major. Role of FFA in student organizations; role of advisor; principles of leadership; characteristics of successful FFA chapters. Course equivalent to OSU’s Ag 421/521.

**477 Agricultural Science in K-12 Classrooms** 1 Developing selected agricultural and science curriculum for K-12; special methods, materials and exercises.

**490 Advanced Ag Ed School Practicum** 2 (0-6) Prereq Ag Ed 345, admission to College of Education. Advanced Ag Ed classroom experience prior to student teaching to provide additional observation, reflection; application of theory and limited teaching responsibilities. S, F grading.

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

**498 Cooperative Education Internship** V 2-12 Prereq undergraduate student. Off-campus cooperative education internship with business, industry, or government unit. S, F grading.

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

**504 Special Topics in Vocational Education** V 1-3 Special topics in agricultural education or agriculture that provide advanced training for teachers of agriculture.

**508 Foundations of Vocational Education** 2 Historical, philosophical, social, political and economic factors that influence education in vocational environments.
511 Seminar in Vocational Education 1 or 2 Prereq graduate standing. Seminar addressing new and emerging legislation and educational programs in vocational education.

536 Microcomputers in the Vocational Classroom 3 (2-3) Implications and applications of microcomputers for experienced classroom teachers.

597 Cooperative Education Programs 3 Program principles and design; teacher coordination procedures and responsibilities; classroom and on-the-job instruction; public relations; teacher administrative responsibilities.

598 Internship V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 12 hours. Supervised experience in continuing, extension, and/or vocational educational environments.

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

Description of Courses

General Agriculture

501 Agriculture Master's Practicum V 2-3 Prereq admission to graduate program, advisor approval. Individually designed to provide practical participation/experience under professional supervision in areas related to student's specialization.

502 Graduate Seminar 3 Prereq admission to graduate program. Presentations and discussions of contemporary issues, trends, and recent research and development by graduate students, faculty, and visiting scholars.

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

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

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

598 Graduate Seminar V 1-3 Prereq admission to graduate program. Discussion of contemporary agricultural issues, trends, legislation, and recent research and international development by graduate students, faculty, and visiting scholars. 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.

Degree Program Requirements

AGRICULTURAL COMMUNICATIONS--BROADCAST AND PRINT MEDIA DEGREE PROGRAMS

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

A major in agricultural communications is offered in cooperation with the School of Communication. Students declaring this major must complete the requirements of the general agriculture curriculum and earn a minimum of 30 hours in the School of Communication, including any communications courses used to satisfy general agriculture requirements. Those electing this major should make known that decision as early as possible in their academic career.

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

FIRST AND SECOND YEAR REQUIREMENTS

Requirements for the first two years are common to both degree programs:

Freshman Year

First Semester Hours
Ag Elective 1
Ag Requirement 1
Biol 103 [B] (GER) 3
Com 101 3
Engl 101 [W] (GER) 3
H D 205 [C] (GER) 3

Second Semester Hours
Ag Elective 1
Ag Requirement 1
Biol 104 [B] (GER) 4
GenEd 110 [A] (GER) 3
Psych 105 [S] (GER) 3

Sophomore Year

First Semester Hours
Ag Ec 201 [S] (GER) 3
Ag Elective 1
Chem 101 [P] (GER) 3
Engl 201 [W] (GER) 3
Stat 212 [N] (GER) 4

Second Semester Hours
300-400-level Ag Requirement 1
Ag Elective 1
Ag Requirement 1
Com 245 3
GenEd 111 [A] (GER) 3

BROADCAST MEDIA DEGREE PROGRAM (131 HOURS) ✔FYDA

Junior Year

First Semester Hours
300-400-level Ag Requirement 1
Ag Elective 1
Arts & Humanities [H,G] (GER) 3
Com 295 3
Complete Writing Portfolio

Second Semester Hours
Com Elective 1
P R 312 3
Tier III Capstone (GER) 3

PRINT MEDIA DEGREE PROGRAM (131 HOURS) ✔FYDA

Junior Year

First Semester Hours
300-400-level Ag Requirement 1
Com 253 3
Com 409 3
Intercultural [I, G, K] (GER) 3
P R 313 [M] 3

Second Semester Hours
Com Elective 1
P R 412 3
Tier III Capstone (GER) 3

Senior Year

First Semester Hours
300-400-level Ag Requirement 1
Com 253 3
Com 409 3
Intercultural [I, G, K] (GER) 3
P R 313 [M] 3

Second Semester Hours
Com Elective 1
P R 412 3
Tier III Capstone (GER) 3

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.

BROADCAST MEDIA DEGREE PROGRAM

First Semester Hours
300-400-level Ag Requirement 1
Ag Elective 1
Arts & Humanities [H,G] (GER) 3
Com 295 3
Complete Writing Portfolio

Second Semester Hours
300-400-level Ag Requirement 1
Communication Elective 3
P R 312 3

BOTANY

See School of Biological Sciences.
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. Epley, Bri nnon Chair of Investment Management J. Kling; Associate Professors, L. Han, M. McNamara, R. Sias, H. Turtle, Alvin J. Wolff Professor of Real Estate, M. Woltosen; Assistant Professors, V. Armstrong, K. Bell er, F. Kerins, D. Whidbee.

DEPARTMENT OF MANAGEMENT AND DECISION SCIENCES


DEPARTMENT OF MARKETING

Professor and Department Chair, D. Muehling; Professors, J. Cote, Maughmer Professor of Freedom Philosophy, R. Markin, J. McCullough, D. Stem, P. Tansuhaj, U. Unmesh; Associate Professors, P. Henderson, J. Johnson, E. Spangenberg; Assistant Professors, J. Giese, R. Grewal, James and Diana Huber Chair of Entrepreneurial Studies, J. Rose, D. Sprott.

CENTER FOR ENTREPRENEURIAL STUDIES

Assistant Professor and Director, James and Diana Huber Chair of Entrepreneurial Studies J. Rose; Professor, Maughmer Professor of Freedom Philosophy, R. Markin.

INTERNATIONAL BUSINESS INSTITUTE

Professor and Director J. McCullough; Professor, R. August, P. Tansuhaj; Assistant Professor, James and Diana Huber Chair of Entrepreneurial Studies, J. Rose, P. Wye th.

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 Accounting, Master of Business Administration, Master of Technology Management, and Doctor of Philosophy. Please refer to page 22 of this catalog for campus specific degree offerings.

The College of Business and Economics is in cooperation with the Division of Humanities and Social Sciences, offers a joint Bachelor of Liberal Arts and a Master of Business Administration (4 & 1) Program. Students selected for this program complete a BA in liberal arts with a business core and receive guaranteed admission into the MBA Program in Business Administration, allowing them to finish the MBA in one year. Admission to the program is highly selective. For further information, students should contact the Director of Graduate Programs in Business.

The International Business Institute (IBI) was established to coordinate international activities in the College of Business and Economics. The IBI draws faculty, staff, and students together to achieve excellence in the internationalization of business education, research, and service. It administers the international business curriculum and advises all international business majors. The IBI aims at encouraging the business and economics faculty, staff, and students to be involved in interesting and exciting activities in the global business of the new millennium.

The WSU Center of Entrepreneurial Studies and the Entrepreneurial Studies Program are designed to provide education in the critical skills essential for business creation and innovation. Included in the mission is the desire to promote research directed toward the understanding of these processes and to develop practical solutions to the management problems of small and medium-sized businesses. It is intended to build the human resources necessary to stimulate, develop, and promote a climate for accelerated business development and expansion in the Washington State region. The Entrepreneurial Studies Program offers the Bachelor of Arts degree with either a Business and Economics or a Management specialization. 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.

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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 Accctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Mgt 101, or MIS 250; a 2.0 cumulative g.p.a. and a 2.0 business g.p.a.

Business Administration (BA) Major Certification Requirements. To be eligible for certification as a business administration major, a student must have earned at least 60 semester hours of credit, including all of the following courses: Accctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Engl 101, Math 201, 202, MIS 250, and meet the current college/departmental g.p.a. requirements of a cumulative g.p.a. of at least 2.5. All students are eligible to petition for the consideration of alternative criteria. A 2.0 cumulative business g.p.a. is required for graduation.

General Program Requirements

General course requirements, core courses, and fields of specialization are presented below. Requirements vary depending upon the field of specialization selected. For a detailed description of degree requirements (with changes approved since publication of the latest catalog), see current degree requirements for BA majors, available in the College of Business and Economics.

All students majoring in business administration must see their advisor and have a degree audit upon completion of 45 hours of credit. By the completion of 60 hours of credit, all students must have completed English, Math and 100-200-level CBE core courses. These required courses are Acctg 230, 231; B Law 210; Dec S 215; Econ 101, 102; Engl 101; Math 201; Math 202; MIS 250. Enrollment in 300-level CBE business courses is restricted to those students who have met these requirements and have certified as BA or MA majors.

All students majoring in business administration must see their advisor and have a degree audit upon completion of 45 hours of credit. By the completion of 60 hours of credit, all students must have completed English, Math and 100-200-level CBE core courses. These required courses are Acctg 230, 231; B Law 210; Dec S 215; Econ 101, 102; Engl 101; Math 201; Math 202; MIS 250. Enrollment in 300-level CBE business courses is restricted to those students who have met these requirements and have certified as BA or MA majors.

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All students majoring in business administration must see their advisor and have a degree audit upon completion of 45 hours of credit. By the completion of 60 hours of credit, all students must have completed English, Math and 100-200-level CBE core courses. These required courses are Acctg 230, 231; B Law 210; Dec S 215; Econ 101, 102; Engl 101; Math 201; Math 202; MIS 250. Enrollment in 300-level CBE business courses is restricted to those students who have met these requirements and have certified as BA or MA majors.

Degree Program Requirements

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

All students are eligible to petition for the consideration of alternative criteria. A 2.0 cumulative business g.p.a. is required for graduation.

Accounting Degree Program (120 Hours)

The objectives of the Bachelor of Arts in Business Administration with a major in accounting are to provide
knowledge about practical and conceptual accounting, basic accounting information systems, and the use of accounting information for managerial decision-making purposes. This provides preparation for careers in private, governmental, and non-profit accounting. It also provides a foundation to enter the Master of Accounting program for those interested in a professional career in public accounting or consulting.

### Freshman Year

- **First Semester**
  - Arts & Humanities [H,G] (GER) 3
  - Econ 101 [S] or Econ 102 [S] (GER) 3
  - Engl 101 [W] (GER) 3
  - GenEd 110 [A] (GER) 3
  - Tier I Science [Q] (GER) 3

- **Second Semester**
  - Biological Sciences [B] (GER) 3
  - Econ 101 [S] or Econ 102 [S] (GER) 3
  - Intercultural [I,G,K] (GER) 3
  - Math 201 3
  - MIS 250 3

### Sophomore Year

- **First Semester**
  - Acctg 230 3
  - Econ 301, 320, or 340 3
  - GenEd 111 [A] (GER) 3
  - Math 202 [N] (GER) 3
  - Physical Sciences [P] (GER) 3

- **Second Semester**
  - Acctg 231 3
  - B Law 210 3
  - ComSt 102 [C] (GER) 3
  - Dec S 215 4
  - Pol S Elective 3

### Junior Year

- **First Semester**
  - Acctg 330 3
  - Acctg 335 or 338 3
  - Fin 325 3
  - MIS 350 3
  - Mkgt 360 3
  - Complete Writing Portfolio

- **Second Semester**
  - Acctg 331 3
  - Acctg 335 or 338 3
  - Engl 402 [W] or 403 [W] (GER) 3
  - Mgt 301 3

### Senior Year

- **First Semester**
  - Acctg 433 [M] 3
  - One of Acctg 434, 435, 439 [M], MIS 372, 375, 448, or 472 3
  - Soc or Psych [S,K] (GER) 3
  - Tier III Capstone (GER) 3
  - Elective 3

- **Second Semester**
  - Acctg or General Elective 3
  - Acctg 438 [M] 3
  - Mgt 491 or 492 3
  - One of Acctg 434, 435, 439 [M], MIS 372, 375, 448, or 472 3
  - Elective 3

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### ACCOUNTING AND INFORMATION SYSTEMS DEGREE PROGRAM (120 HOURS)

The objectives of the Bachelor of Arts in Business Administration with a major in accounting and information systems are to provide knowledge about practical and conceptual accounting, management information systems, and the use of accounting information for managerial decision-making purposes. This provides preparation for careers in accounting, such as private, governmental, and non-profit accounting and information systems, such as information technology, consulting in public accounting and management consulting firms, and in-house systems/analysts/implementers in business firms.

### 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
  - GenEd 111 [A] (GER) 3
  - Math 201 3
  - MIS 250 3

### Sophomore Year

- **First Semester**
  - Acctg 230 3
  - Intercultural [I,G,K] 3
  - Math 202 [N] (GER) 3
  - MIS 153 3
  - Physical Sciences [P] (GER) 3

- **Second Semester**
  - Acctg 231 3
  - B Law 210 3
  - Dec S 215 4
  - MIS 271 3
  - Oral Com [C] (GER) 3

### Junior Year

- **First Semester**
  - Acctg 330 3
  - Fin 325 3
  - MIS 350 3
  - MIS 372 3
  - Mkgt 360 3
  - Complete Writing Portfolio

- **Second Semester**
  - Acctg 331 3
  - Acctg 335 or 338 3
  - Dec S 340 3
  - Mgt 301 3
  - Soc or Psych [S,K] (GER) 3

### Senior Year

- **First Semester**
  - Acctg 335 or 338 3
  - Econ 301, 320, or 340 3
  - MIS 472 3
  - Tier III Capstone (GER) 3

- **Second Semester**
  - Acctg 438 [M] 3

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1 For a total of 7 hours of Biological and Physical Sciences.
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<th>Second Semester</th>
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<td>400-level Business or Econ Elective</td>
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<td>400-level Business or Econ Elective</td>
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<td>Mgt 491 or 492</td>
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<td>Mgt 491 or 492</td>
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<td>300-400-level Option Requirements</td>
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<td>Mktg 460 [M]</td>
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<td>Pol S Elective</td>
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<td>300-400-level Option Requirements</td>
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<td>Electives</td>
<td>6</td>
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</tbody>
</table>

For a total of 7 hours of Biological and Physical Sciences.

**BUSINESS ECONOMICS DEGREE PROGRAM (120 HOURS)**

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**

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<tr>
<th>First Semester</th>
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</thead>
<tbody>
<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
<td>3</td>
<td>Arts &amp; Humanities [H, G] (GER)</td>
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<td>Accctg 230</td>
<td>3</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>Biological Sciences [B] (GER)</td>
<td>3 or 4</td>
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**Sophomore Year**

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**BUSINESS LAW DEGREE PROGRAM (120 HOURS)**

Preparation for careers in consulates, embassies and the State Department, in criminal justice administration, court administration, public utility administration, labor union administration, and government agency administration; also private business dealing with the foregoing.

**Freshman Year**

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**Junior Year**

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**Senior Year**

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## ENTRPRENEURSHIP DEGREE PROGRAM (120 HOURS) ✔FYDA

The entrepreneurship major has been developed for students interested in venture management, new venture startups, and small business and the management of family firms.

### Freshman Year

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| Complete Writing Portfolio | |

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## FINANCE DEGREE PROGRAM (120 HOURS) ✔FYDA

Preparation for careers in financial departments of businesses, commercial and investment banks, governmental financial agencies, and other financial institutions.

### Freshman Year

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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acctg 231</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Dec S 215</td>
<td>4</td>
<td></td>
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<tr>
<td>MIS 250</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Oral Com [C] (GER)</td>
<td>3</td>
<td></td>
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<tr>
<td>Soc or Psych [S,K] (GER)</td>
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### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
<th>Courses</th>
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<tbody>
<tr>
<td>Acctg 330</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Engl 402 [W] or 403 [W] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fin 325</td>
<td>3</td>
<td></td>
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<tr>
<td>Mgt 301</td>
<td>3</td>
<td></td>
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<tr>
<td>MIS 350</td>
<td>3</td>
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</tbody>
</table>

| Complete Writing Portfolio | |

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec S 340</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Econ 301</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fin 421</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Finance A Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mktg 360</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

## GENERAL BUSINESS DEGREE PROGRAM (120 HOURS) ✔FYDA

Preparation for careers in business for the student who does not wish to specialize in any of the other options.

### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Tier I Science [Q] (GER)</td>
<td>3</td>
<td></td>
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<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Sciences [P] (GER)</td>
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<td></td>
</tr>
<tr>
<td>Econ 101 [S] or Econ 102 [S] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Math 201</td>
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### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td>Acctg 230</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>B Law 210</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Dec S 215</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Oral Com [C] (GER)</td>
<td>3</td>
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<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
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<tbody>
<tr>
<td>Acctg 231</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Dec S 215</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MIS 250</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Oral Com [C] (GER)</td>
<td>3</td>
<td></td>
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</table>

### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td>Acctg 330</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mgt 301</td>
<td>3</td>
<td></td>
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<tr>
<td>MIS 350</td>
<td>3</td>
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</tbody>
</table>

| Complete Writing Portfolio | |

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec S 340</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Econ 301</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fin 421</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Finance A Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mktg 360</td>
<td>3</td>
<td></td>
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</tbody>
</table>
Elective 3
Mgt 455 3
Three of: 400-level business elective; Dec S 412 [M], 418; Econ 450; MIS 375; Psych 412 9
Elective 3

Second Semester
Hours
300-400-level Elective 3
Mgt 491 or 492 3
Pol S Elective 3
Tier III Capstone (GER) 3
Elective 3

1 For a total of 7 hours of Biological and Physical Sciences.

INTERNATIONAL BUSINESS DEGREE PROGRAM (122 HOURS)

Preparation for careers with multinational corporations, governmental and intergovernmental agencies both domestic and international.

Students must complete the following Foreign Study Curriculum except for students studying at WSU who reside outside the US and who attended at least one year of secondary school in a foreign country. One year of foreign language is required except for non-native speakers of English from outside the US who may substitute satisfactory TOEFL scores. 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
Hours
Arts and 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
Hours
Biological Sciences [B] (GER) 1 3 or 4
Econ 101 [S] or Econ 102 [S] (GER) 3
Intercultural [I,G,K] (GER) 3
Math 201 3
MIS 250 3

Sophomore Year
First Semester
Hours
Acctg 230 3
GenEd 111 [A] (GER) 3
Math 202 [N] (GER) 3
Physical Sciences [P] (GER) 3 3 or 4
Elective 3

Second Semester
Hours
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
Hours
Engl 402 [W] or 403 [W] (GER) 3
Fin 325 3
Mgt 301 3
MIS 350 3
Mktg 360 3
Complete Writing Portfolio

Second Semester
Hours
Dec S 340 3
Econ 350 3
Mgt 401 [M] 3
Mgt 450 3
Elective 3

Second Semester
Hours
300-400-level Elective 3
Dec S 340 3
Engl 402 [W] or 403 [W] (GER) 3
Fin 325 3

1 For a total of 7 hours of Biological and Physical Sciences.

MANAGEMENT DEGREE PROGRAM (120 HOURS)

Students may emphasize preparation for one of three careers in this major: (1) careers as production executives in manufacturing and enterprises and for other administrative positions in business and government for which production training is useful and desirable; (2) careers for which an understanding of international business is desirable; and (3) careers in management which require an understanding of people in organizations as well as the production function.

Freshman Year
First Semester
Hours
Arts and 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
Hours
Biological Sciences [B] (GER) 1 3 or 4
Econ 101 [S] or Econ 102 [S] (GER) 3
GenEd 111 [A] (GER) 3
Intercultural [I,G,K] (GER) 3
Math 201 3

Sophomore Year
First Semester
Hours
Acctg 230 3
Math 202 [N] (GER) 3
MIS 250 3
Physical Sciences [P] (GER) 3 3 or 4
Pol S Elective 3

Second Semester
Hours
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
Hours
Fin 325 3
I Bus 380 [M] 3
Mgt 301 3
MIS 350 3
Mktg 360 3
Complete Writing Portfolio

Second Semester
Hours
300-400-level Elective 3
Dec S 340 3
Engl 402 [W] or 403 [W] (GER) 3
Fin 325 3

1 For a total of 7 hours of Biological and Physical Sciences.

2 Group A Electives are: I Bus 415, 416 [M], 435, 453, 481, 482 [M], 492 (may not be used under both International Business and Business core), 496, 498; one of Econ 416, 472, or I Bus 470. No more than 3 hours of 498 may be used.

3 Study Abroad coursework must be approved by I Bus director before it is taken and include the second semester of the foreign language requirement.

MANAGEMENT DEGREE PROGRAM (120 HOURS)

Students may emphasize preparation for one of three careers in this major: (1) careers as production executives in manufacturing and enterprises and for other administrative positions in business and government for which production training is useful and desirable; (2) careers for which an understanding of international business is desirable; and (3) careers in management which require an understanding of people in organizations as well as the production function.

Freshman Year
First Semester
Hours
Arts and 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
Hours
Biological Sciences [B] (GER) 1 3 or 4
Econ 101 [S] or Econ 102 [S] (GER) 3
GenEd 111 [A] (GER) 3
Intercultural [I,G,K] (GER) 3
Math 201 3

Sophomore Year
First Semester
Hours
Acctg 230 3
Math 202 [N] (GER) 3
MIS 250 3
Physical Sciences [P] (GER) 3 3 or 4
Pol S Elective 3

Second Semester
Hours
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
Hours
Fin 325 3
I Bus 380 [M] 3
Mgt 301 3
MIS 350 3
Mktg 360 3
Complete Writing Portfolio

Second Semester
Hours
300-400-level Elective 3
Dec S 340 3
Engl 402 [W] or 403 [W] (GER) 3
Fin 325 3
### Management Information Systems Degree Program (120 Hours)

**Freshman Year**

**First Semester**
- MIS 350
- Mktg 360
- Complete Writing Portfolio

**Second Semester**
- MIS 350
- Mktg 360
- Complete Writing Portfolio

**Sophomore Year**

**First Semester**
- Engl 402 [W] or 403 [W] (GER)
- MIS 372 [M]
- MIS 374
- MIS 375

**Second Semester**
- Dec S 340
- Engl 402 [W] or 403 [W] (GER)
- MIS 372 [M]
- MIS 374
- MIS 375

**Junior Year**

**First Semester**
- Dec S 340
- Engl 402 [W] or 403 [W] (GER)
- Fin 325
- Mgt 301
- Mktg 360

**Second Semester**
- Engl 402 [W] or 403 [W] (GER)
- Fin 325
- Mgt 301
- Mktg 360

### 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)
- Econ 101 [S] or Econ 102 [S] (GER)
- Engl 101 [W] (GER)
- GenEd 110 [A] (GER)
- Tier I Science [Q] (GER)

**Second Semester**
- Biological Sciences [B] (GER)
- Econ 101 [S] or Econ 102 [S] (GER)
- Intercultural [I,G,K] (GER)
- Math 201
- MIS 250

**Sophomore Year**

**First Semester**
- Acctg 230
- Engl 202 [N] (GER)
- Eng 201 [S] or Econ 202 [S] (GER)
- Math 202 [N] (GER)
- MIS 271
- Physical Sciences [P] (GER)

**Second Semester**
- Acctg 231
- B Law 210
- Cpt S/MIS 153
- Dec S 215
- Oral Com [C] (GER)

**Junior Year**

**First Semester**
- Dec S 340
- Engl 402 [W] or 403 [W] (GER)
- Fin 325
- Mgt 301
- Mktg 360

**Second Semester**
- Engl 402 [W] or 403 [W] (GER)
- Fin 325
- Mgt 301
- Mktg 360

### Real Estate Degree Program (120 Hours) ✨FYDA

Preparation for careers in real estate administration, appraisal, brokerage, finance, management, marketing, production, selling, and title insurance.

**Freshman Year**

**First Semester**
- Arts & Humanities [H] (GER)
- Econ 101 [S] or Econ 102 [S] (GER)
- Engl 101 [W] (GER)
- GenEd 110 [A] (GER)
- Tier I Science [Q] (GER)

**Second Semester**
- Biological Sciences [B] (GER)
- Econ 101 [S] or Econ 102 [S] (GER)
- GenEd 111 [A] (GER)
- Intercultural [I,G,K] (GER)
- Math 201

**Sophomore Year**

**First Semester**
- Acctg 230
- B Law 210
- Math 202 [N] (GER)
- Soc or Psych [S,K] (GER)
- Elective

**Second Semester**
- Acctg 231
- Dec S 215
- MIS 250
- Oral Com [C] (GER)
- Physical Sciences [P] (GER)

**Junior Year**

**First Semester**
- Engl 402 [W] or 403 [W] (GER)
- Fin 325
- Mgt 301

**Second Semester**
- Engl 402 [W] or 403 [W] (GER)
- Fin 325
- Mgt 301
**Departments of Business**

- **MIS 350**  
  
- **R E 305**  
  
- **R E 306 or Elective**  
  
- Complete Writing Portfolio

**Second Semester**  
**Hours**  
300-400-level Elective  
3  
Dec S 340  
Mktg 360  
Pol S Elective  
R E 405 [M]

**Senior Year**

**First Semester**  
**Hours**  
B Law 414 [M]  
3  
Group A Elective  
3  
Group B Elective  
3  
R E 407  
3  
Elective  
3

**Second Semester**  
**Hours**  
Group A Elective  
3  
Mgt 491 or 492  
3  
R E 407  
3  
Tier III Capstone (GER)  
Elective  
2

**First Semester**  
**Hours**  
Engl 402 [W] or 403 [W] (GER)  
3  
Fin 325  
3  
Ins 320  
3  
Mktg 301  
3  
Mktg 360  
Complete Writing Portfolio

**Second Semester**  
**Hours**  
300-400-level Business Elective  
6  
Dec S 340  
3  
Ins 321  
3  
MIS 350  
3

**Junior Year**

**First Semester**  
**Hours**  
Engl 402 [W] or 403 [W] (GER)  
3  
Fin 325  
3  
Ins 320  
3  
Mktg 301  
3  
Mktg 360  
Complete Writing Portfolio

**Second Semester**  
**Hours**  
300-400-level Business Elective  
6  
Dec S 340  
3  
Ins 321  
3  
MIS 350  
3

**Senior Year**

**First Semester**  
**Hours**  
Mktg 491 or 492  
3  
Pol S Elective  
3  
Elective  
3

**Second Semester**  
**Hours**  
Fin 425 [M]  
3  
Mktg 491 or 492  
3  
Tier III Capstone (GER)  
Electives  
6

- For a total of 7 hours of Biological and Physical Sciences.

- Group A electives are: Arc 330, 331; B Law 410, 411; ES/EP/RP 444; Fin 421, 427 [M]; H A 381 [M], 491; Ins 322; Mgt 401 [M], 450; R E 406, 408.

**RISK MANAGEMENT & INSURANCE DEGREE PROGRAM (120 HOURS) ¶ FYDA**

Preparation for careers in insurance agencies, actuarial administration, claims, business risk management, investment, and underwriting.

**Freshman Year**

**First Semester**  
**Hours**  
Arts & Humanities [H, G] (GER)  
3  
Econ 101 [S] or Econ 102 [S] (GER)  
3  
Engl 101 [W] (GER)  
3  
GenEd 110 [A] (GER)  
3  
Tire I Science [Q] (GER)  
3

**Second Semester**  
**Hours**  
Biological Sciences [B] (GER)  
3 or 4  
Econ 101 [S] or Econ 102 [S] (GER)  
3  
GenEd 111 [A] (GER)  
3  
Intercultural [I, G, K] (GER)  
3  
Math 201  
3

**Sophomore Year**

**First Semester**  
**Hours**  
Acctg 230  
3  
B Law 210  
3  
Math 202 [N] (GER)  
3  
Oral Com [C] (GER)  
3  
Soc or Psych [S,K] (GER)  
3

**Second Semester**  
**Hours**  
300-400-level Elective  
3  
Acctg 231  
3  
Dec S 215  
4  
MIS 250  
3  
Oral Com [C] (GER)  
3  
Physical Sciences [P] (GER)  
3 or 4

**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; Engl 402 [W] or 403 [W]; Fin 325; Math 201, 202; Mgt 301; Mgt 491 or 492; MIS 250, 350; 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 250 before enrolling in 300- or 400-level business courses. Students should consult the CBE Business Advising Office for specific requirements.

**Finance**  
Acctg 231, Dec S 215, Fin 325, 421, 427 [M]: one of Fin 422, 425 [M], 426, 428 or 481.

**Human Resource/Personnel**  
Dec S 215, Econ 101, Mgt 301, 450, 455: one of Econ 350, 450, Mgt 401 [M], or 456 [M].

**International Business**  
I Bus 380 [M]; one of I Bus 435, 453, 496, or 498 (3 credits); two of the following pairs of courses: B Law 210, I Bus 415 or 416 [M]; I Bus 482; Mktg 360; Econ 102. I Bus 470; Fin 325, I Bus 481. Up to 9 hours of foreign study may be substituted for the above courses. Pre-approval is required.

**Management**  
Mgt 301, MIS 350: four of Mgt 315, 401 [M], 453, 483, 485, 487, 496, MIS 448.

**Management Information Systems**  

**Marketing**  
Mktg 360, 367: four of Mktg 368, 461 [M], 468, 470, 477, 478 [M], 482 [M], 490 [M], 495 [M], 496 (3 credits).

**Real Estate**  
R E 305, 306; Fin 409 or R E 409; three of: B Law 414, R E 405 [M], 406, 407, or 408.

**Risk Management and Insurance**  
B Law 210, Econ 102, Ins 320: three of Fin 425 [M], Ins 321, 322, or 420 [M].

**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 brochures. It should also be noted that courses taken at community colleges are not accepted as transferable equivalents to 300-400-level courses at WSU.
Description of Courses

Special Notice: Enrollment in 300-400-level business courses is restricted to students who have certified as B/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 Introduction to corporate financial reporting via the preparation and interpretation of financial statements.

Acctg 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.

Acctg 232 Intermediate Accounting I 3 Prereq Acctg 231; MIS 250. Theory underlying the determination of income; analysis of financial statements.


Acctg 238 Cost Accounting 3 Prereq Acctg 231; Dec S 215; Math 107 or 201; 202; MIS 250. Management uses of cost information; cost systems and systems design; cost analysis.

Acctg 330 (438) [M] Advanced Cost Accounting and Management 3 Prereq Acctg 338. Cost managerial accounting as it is used for decision making and strategic planning; emphasis on budgeting, product cost, and performance measurement.

Acctg 331 Advanced Accounting 3 Prereq Acctg 331. Partnership equities and extended forms of corporate ownership and entities.

Acctg 332 Accounting Theory 3 Prereq Acctg 331. Accounting theory and contemporary issues.


Acctg 334 Accounting for Public Organizations 3 Prereq Acctg 331. Conceptual and procedural auditing issues involving public sector organizations.

Acctg 335 Individual Income Taxes 3 Prereq Acctg 335. The study of individual income taxes from both compliance and planning perspectives. Credit not granted to those taking Acctg 335 prior to Fall 1999.

Acctg 336 International Accounting and Taxation 3 Prereq Acctg 231. Comparative accounting systems, foreign currency transactions, transfer pricing, taxation of foreign source income.


Acctg 340 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.

Acctg 349 Special Problems V 1-4 May be repeated for credit. S, F grading.

Acctg 350 Accounting Theory 3 Recent developments with respect to the determination of income and the valuation of assets.

Acctg 351 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.

523 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.

700 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, limited liability companies and corporations, securities regulation, secured transactions and bankruptcy law.

414 [M] Law of Real Estate 3 Prereq B Law 210. Legal principles and precedents as they apply to the real estate environment.

415 [M] Law of International Trade 3 Prereq B Law 210. Legal organization of the international community; international aspects of trade and development, economic cooperation, and technical, social, and cultural cooperation.

416 [M] Public International Law 3 Prereq B Law 210. Law governing states, international organizations, and nongovernmental organizations (including multinational enterprises); human rights law; environmental law; and dispute settlement.

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

510 Business Law I 3 The legal process, constitutional and administrative law; torts, crimes, sales, agency, and employment law.

511 Business Law II 3 Prereq B Law 210 or 510. Law of partnerships, corporations, securities regulations, negotiable instruments, secured transactions, property, insurance and bankruptcy; government regulation of businesses and professions.

Decision Sciences

Dec S 215 Statistics 4 (3-3) Prereq Math 201. Data presentation, probability, distributions, inferences, and linear regression as applied to business and economics.

340 Operations Management 3 Prereq Dec S 215. Management of production and service operations with an emphasis on quality management; planning and control of workflow; resource allocation, and utilization.

344 Principles of Optimization 3 Same as Math 364.


417 Simulation Methods 3 Same as Math 416.

418 Quality Improvement for Management 3 Prereq Dec S 215. Total quality management as used in industries: philosophy of Deming and others, control charts, process capability analysis, team tools.


451 Business Statistical Analyses 3 Prereq admission to MBA program. Advanced preparation for graduate-level business analyses, applied finite math and statistics principles.

498 Quantitative Methods Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization. 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.

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.

Entrepreneurship

EntrP 375 Electronic Commerce and the Internet 3 Same as MIS 375.

426 Entrepreneurial Finance 3 Same as Fin 426.

489 Entrepreneurial Management 3 Same as Mgt 489.

490 [M] Entrepreneurship 3 Same as Mktg 490.

492 Small Business Policy 3 Same as Mgt 492.

496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Course covers new or time-sensitive topics in entrepreneurship.

498 Entrepreneurship Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government, or nonprofit organization. S, F grading.

499 Special Problems V 1-4 May be repeated for credit. Individualized study for students with special interests or needs. S, F grading.

Finance

Fin 323 Personal Finance 3 For nonbusiness majors. Consumer credit, financial institutions, investments, mutual funds, insurance, social security, home ownership, taxes, estate planning.


409 Real Estate Finance 3 Same as RE 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.


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.


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 nonprofit organization. S, F grading.

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

502 Financial Management 3 Prereq Acctg 550; Econ 101. Financial management of the firm; capital budgeting, working capital management, capital acquisition, and dividend policy.

521 Interest Rates and Financial Markets 3 Prereq Fin 325. Real and nominal interest rates; bond pricing; term and risk structure of interest rates; investment and commercial banking; financial futures.


526 Problems in Financial Management 3 Prereq Fin 325. Application of financial principles to problems in financial management; credit policy, capital budgeting, leasing and mergers, cash management.

527 Investment Analysis 3 Prereq Fin 325. A decision-making approach to the problems of asset management for personal and business portfolio.

528 Portfolio Theory and Financial Engineering 3 Prereq Fin 325, 427, or 527. The theory of portfolio management and the use of derivative securities in portfolio risk management.

529 Financial Management for High Tech Firms 3 Prereq Fin 325. Application of finance principles to firms in high-tech industries; financing, risk management, capital investment, and mergers/acquisitions.

581 International Finance 3 Same as I Bus 581.

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.


498 Insurance 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.

520 Employee Benefits Risk Management 3 Social and group insurance and retirement plans in the context of employee benefits risk and insurance management.

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

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

International Business

I Bus 375 Aspects of Sustainable Development 3 Same as Econ 375.

380 [M] International Business 3 International political economy; business relationships between nations; corporations and economic institutions.

399 Foreign Study V 1-15 May be repeated for credit; cumulative maximum 15 hours. Prereq program approval required. Participation in approved programs of study at a foreign educational institution. S, F grading.

415 Law of International Trade 3 Same as B Law 415.

416 [M] Public International Law 3 Same as B Law 416.

417 Comparative Economic Systems 3 Same as Econ 416.

435 International Tourism 3 Same as H A 435.

436 International Accounting and Taxation 3 Same as Acctg 436.

453 Comparative International Management 3 Same as Mgt 453.

470 International Trade and Finance 3 Same as Econ 470.

471 The Economics of Regional Integration 3 Same as Econ 471.

472 Economic Development 3 Same as Econ 472.

481 International Finance 3 Prereq Fin 325; I Bus 380. Financial problems of multinational businesses; international financial environment, long-term capital commitment to an international venture, financial techniques for firm operation.

482 [M] International Marketing 3 Prereq I Bus 380; Mktg 360. Opportunities, characteristics, trends in foreign markets; alternative methods; strategies; organizational planning, control; problems of adapting American marketing concepts and methods.

492 Small Business Policy 3 Same as Mgt 492.

496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

498 International Business Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or non-profit organization. S, F grading.

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

580 International Business Management 3 Decision making in the international environment; political, cultural, and economic risk management.

581 International Finance 3 Prereq Fin 502, I Bus 380 or 580. Principles of international finance; financial management of multinational corporations; international investments.

582 International Marketing Management 3 Prereq Mktg 505. Principles of international marketing, marketing decision making in international environments, problems of adapting marketing programs to international markets.
595 Seminar in Research and Theory Development 3 Theory development and research on business in a global context.

596 Doctoral Topics 1 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Advanced topics in international business.

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

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

Management

Mgt

101 Introduction to Business 3 Introduction to the practice of business with explanations of business environments, strategy, organization, functional areas, terminology, processes, tasks and ethics.

301 Principles of Management and Organization 3 Principles of management and administration aimed at improving effectiveness of all types of organizations.

315 Women in Management and Leadership 3 Same as WSt 315.

401 [M] Leadership Skills for Managers 3 Prereq Mgt 301. Leadership, motivation, team building, group dynamics, interpersonal and group conflict, and job design.

450 Personnel and Human Resources Management 3 Prereq Dec S 215; Mgt 301. Policy and practice in human resource utilization, selecting, training, motivating, evaluating, and compensating employees; labor relations; EEO legislation.

453 Comparative International Management 3 Cross-cultural implications of management theories and approaches; the role of national culture in management theory and practice.

455 Staffing 3 Prereq Mgt 450 or c/. Selection issues; methods of forecasting, planning, recruitment, selection; analysis of psychometric properties of tests; techniques for assessing reliability and validity.

456 [M] Compensation Administration 3 Prereq Mgt 450 or c/. Theoretical, research, and applied issues related to the compensation of employees.


489 Entrepreneurial Management 3 Prereq Econ 101, 102, Fin 325, Mgt 301, MIS 350, Mktg 360. Philosophy and nature of entrepreneurship for all business organizations; analytical, financial and interpersonal entrepreneurial skills.

491 Business Strategy and Policy 3 Prereq Dec S 340, Fin 325, Mgt 301, MIS 350, Mktg 360. Overall management of the firm; top-level decision-making and planning.

492 Small Business Policy 3 Prereq Accctg 230, B Law 210, Fin 325, Mgt 301, Mktg 360. Application of management theory and principles to small firms; applied consulting experience with operating businesses.

496 Seminar 3 May be repeated for credit.

498 Management Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.

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

501 Management of Organizations 3 Leading, organizing, decision making, planning, controlling, conflict management, and behavior in work organizations.

582 Personnel and Human Resource Management 3 Prereq Mgt 501. Human resources and personnel administration; selection, training, compensation, performance appraisal, labor relations, health and safety, EEO legislation.

583 Organization Design 3 Development and design of contemporary systems of organization and management.

585 Graduate Seminar in Negotiations 3 Bargaining skills across a broad range of business settings; experiential work. Credit not granted for both Mgt 485 and 585.

586 Seminar in Management 3 May be repeated for credit; cumulative maximum 6 hours. Prereq admission to MBA program. Special topics in management, organization behavior, organization theory, human resource management and strategic management.

587 Business Ethics 3 Prereq Phil 260. The nature and sources of ethical conflicts and dilemmas in individuals and organizations confront in the business context. Credit not granted for both Mgt 487 and 587.

590 Strategy Formulation and Organizational Design 3 Relationship between the formulation of strategy and the selection of effective organizational structures and systems.

593 Managerial Leadership and Productivity 3 Organizational behavior and human motivation in the workplace; organization and leadership theories, studies, projects and models leading to improved productivity.

596 Doctoral Topics 3 May be repeated for credit; cumulative maximum 15 hours. Advanced topics in management.

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

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

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

Management Information Systems

MIS 153 BASIC Programming 2 Same as Cpt S 153.

250 (150) Managing Information Technology 3 (2-2) Comprehensive overview of the role of management information systems in business, principles and application of MIS, and hands-on computer labs.

271 Application of 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, core course; MIS technology fundamentals; applications to business functions and management practice.


374 (474) Telecommunications and Networking in Business 3 Prereq MIS 350. Data communications; infrastructure, and protocols; network topologies and management; business applications of communication technologies.

375 Electronic Commerce and the Internet 3 Prereq MIS 350. Capabilities of the Internet to support and enable electronic commerce; effective design and implementation; managerial issues.

425 Emerging Technologies II 3 May be repeated for credit; cumulative maximum 12 hours. Prereq MIS 350. Special and advanced topics in MIS.

426 Emerging Technologies II 3 May be repeated for credit; cumulative maximum 12 hours. Prereq MIS 350. Special and advanced topics in MIS.

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.

498 Management Information Systems Internship V 2-15 May be repeated for credit; cumulative maximum 15 hours. Cooperative educational internship with a business, government or nonprofit organization. S, F grading.

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

507 Computers and Systems for Managers 3 Data base concepts, management information systems, design of application programs, and computer concepts.

572 Database Management Systems 3 Prereq admission to MBA program. Database management, data modeling, 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 graduate standing. Advanced topics in management information systems.

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

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

Marketing

Mktg

327 Services/Nonprofit Marketing 3 Marketing applications in the service sector. Cooperative course taught by UI (Bus 327), open to WSU students.

360 Marketing 3 Functions, methods, and middlemen used in marketing the principal types of goods; price policies, cost of marketing; government regulation.
567 Consumer Behavior 3 Prereq Mktg 360. The investigation of social-structural-phenomena affecting consumer decision processes; learning theory and communication.

368 Marketing Research 3 Prereq Dec S 215; Mktg 360. Survey and experimental methods as they relate to marketing research.


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 selling plays in the marketing mix; problems in planning, organizing, evaluating and controlling the sales force.

482 [M] International Marketing 3 Same as I Bus 482.


495 [460] [M] Marketing Management 3 Prereq Mktg 360; 6 hours Mktg. Analysis of marketing policy; approaches to solutions of marketing problems.

496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

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.

509 Research Methodology 3 Prereq Dec S 215. Types of data needed and available, collection and analysis of data as they relate to decisional research.

561 Technology and New Product Marketing 3 Prereq Mktg 360. Introduction of new products that are based on new technology; exploration of actual products in the market.

565 Seminar in Marketing 3 May be repeated for credit; cumulative maximum 9 hours. Marketing structure and behavior from economic and behavioral perspectives; social evaluation and behavioral implications of marketing strategy.

567 Consumer Behavior Theory 3 Prereq Mktg 505. Theory in consumer and buyer behavior; conceptual and empirical research role of purchase and consumption behavior on society and marketing.

568 Doctoral Topics 3 May be repeated for credit; cumulative maximum 15 hours. Advanced topics in marketing.

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

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

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

Real Estate

R E

305 Real Estate 3 Prereq B Law 210, Econ 102. Relationships between location and value; patterns of urban land use; legal, financial, and organizational framework of the real estate business.


405 [M] Real Estate Valuation 3 Prereq Fin 325; R E 305. Principles and practices of real property valuation; factors affecting real property values and income; appraisal and location theory.

406 Real Estate Administration 3 Prereq R E 305. The case method of analyzing management policies, practices, and decision making in real estate 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.

408 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. S, F grading.

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

Degree Program Requirements

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

The Bachelor of Science degree in Chemical Engineering requires a total of 132 semester hours. At least 66 of the total hours required for this degree must be in 300-400-level courses.

CHEMICAL ENGINEERING DEGREE PROGRAM (138 HOURS) ✔FYDA

Freshman Year

First Semester Hours
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Intercultural [LG,K] (GER) 3
Math 171 [N] (GER) 4

Second Semester Hours
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
Math 172 4
Phys 201 [P] (GER) 4

Sophomore Year

First Semester Hours
Ch E 201 3
Ch E 298 1
Chem 340 3
Chem 341 2
Engl 402 [W] (GER) 3
Math 273 2
Phys 202 [P] (GER) 4

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
BC/BP 364 or Chem 342 3 or 4
Ch E 211 3
Ch E 298 1
Econ 101 [S] or Econ 102 [S] (GER) 3
Math 315 3

Junior Year

First Semester Hours
Ch E 301 3
Ch E 310 3
Ch E 398 1
Chem 331 3
E E 304 2

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. Thomson, B. J. Van Wie; Associate Professors, R. P. Cavaliere, C. S. Claiborn; 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 balance. 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 unrestricted 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.
Chemistry Elective\(^1\) 2
Math Elective\(^2\) 3
Complete Writing Portfolio

### Second Semester Hours

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<tr>
<th>Course</th>
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<tr>
<td>Ch E 321</td>
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<td>Ch E 332</td>
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<td>Ch E 334</td>
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<td>Chem 333</td>
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<td>Chem 336</td>
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<td>Ch E Elective(^4)</td>
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<td>Tier III Capstone [H,G,S,K] (GER)</td>
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\(^1\) Chem 220, 415, 421, 424, 425, 427, 480, 481, 482. If a student takes both Chem 342 and BC/BP 364, one can be used to satisfy the Chem elective.

\(^2\) Choose from: Math 375, 415, 430, 440, 441, 442, 443, or 444.

\(^3\) Must be approved by advisor prior to enrollment in the class. Course need not be taken from another engineering department if an engineering elective was taken from an engineering department other than Chemical Engineering.

\(^4\) Ch E 418, 435, 461, 465, 467, 475, 476, 481, 485, 487, 495 and 499. Of the total of 9 credits in chemical engineering electives, a cumulative total of only 3 credits is allowed in Ch E 495 and 499 combined.

\(^5\) Any course from an engineering department other than chemical engineering is acceptable with the exception of the following courses: BSysE 110, 120, 210, 310, 311, 339, 441; CE 120, 174, 301, 462, 463, 464, 471, 480; EE 110, 120, 380; MSE 110, 120, 309, 450; ME 103, 120, 125, 301, 313. Chemical engineering courses may be used to satisfy this requirement (but cannot be counted as a Chemical Engineering Elective as well) as long as a course from an engineering department other than Chemical Engineering is taken as a technical elective.

\(^6\) Biol 103, 104, or Micro 101.

### Certification

Specific requirements for certification in chemical engineering can be obtained from the departmental office although eligibility usually occurs at the middle of the sophomore year. Criteria for certification include overall g.p.a., grades earned in mathematics and physical 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.

### Description of Courses

#### Chemical Engineering

**Ch E**

- **Chemical Process Principles and Calculations**
  - Prereq: Chem 106; Math 172. Fundamental concepts of chemical engineering; problem-solving techniques and applications in stoichiometry, material balance, and energy balances, and phase equilibria.
  - 3 Same as M E 461.

- **Process Simulation**
  - Prereq: Math 172; Math 315 or c//. Computer solutions to problems in chemical engineering processing.
  - 2 May be repeated for credit; cumulative maximum 2 hours. S, F grading.

- **Chemical Engineering Thermodynamics**
  - 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.
  - 3 Introduction to Transport Processes
  - Prereq: Ch E 201; Math 315 or c//; major in Ch E. Fundamentals of the phenomena governing the transport of momentum, energy, and mass.
  - 3 Fluid Mechanics and Heat Transfer
  - Prereq: Ch E 201, 310. Ch E major. Design calculations, operations, and evaluation of equipment used in fluid flow, heat transfer, and evaporation.
  - 3 Chemical Engineering Separations
  - Prereq: Ch E 301. Design and evaluation of equipment used in continuous contacting.
  - 3 Materials Processing
  - Prereq: Ch E 334; Chem 105, 106; Ch E major. Processing of polymeric and ceramic materials; corrosion prevention and materials selection.
  - 4 [M] Chemical Engineering Lab I
  - 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.
  - 3 [M] Chemical Engineering Lab II
  - Prereq: Ch E 432. Laboratory experiments in heat and mass transfer; separations, other unit operations, kinetics, control; design calculations and report writing.
  - 3 Modern Separation Processes
  - Prereq: Ch E 301, 310, 332, 334; Ch E major. Design and operation of separation processes important to emerging technologies; bioseparations, supercritical extraction.
  - 4 Process Control
  - 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.
  - 4 Chemical Process Analysis and Design I
  - Prereq: Ch E 301, 321, 334. Chemical engineering design; computer tools; safety and environmental constraints; cost and equipment optimization.
  - Prereq: Ch E 450. Development, design, and economic evaluation of chemical and related processes as practiced in industry.
  - 4 Introduction to Nuclear Engineering
  - Prereq: M E 461.
  - 4 Integrated Envirochemical Engineering
  - Prereq: ChE 334. Application of chemical engineering principles in assessment and remediation of industrial problems in air pollution, water pollution, and solid and hazardous waste.
  - 4 Nuclear Fuel Cycle Economics
  - Prereq: M E 461. Basics of management of fuel for nuclear power plants; economics of power production; optimization strategies.
  - 4 Introduction to Biocatalytic Engineering
  - Prereq: Ch E 310, 332. Application of chemical engineering principles to the processing of biological and biochemical materials.
  - 4 Biomedical Engineering Principles
  - Prereq: Ch E 301, 310. The application of chemical engineering principles to biological processes in the human body.
  - 4 Special Topics in Chemical Engineering
  - Prereq: Ch E 301, 310. Chemical and physical nature of the interface including the molecular basis for interfacial forces and resulting macroscopic phenomena.
  - 4 Food Process Engineering Design
  - Prereq: BSysE 402.
  - 4 Chemical Engineering Internship
  - Prereq: Ch E 301, 310. Students work full time in engineering assignments in approved industries with prior approval of advisor and industrial supervisor. S, F grading.
  - 4 Cooperative Education Internship
  - Prereq: Ch E 201, 301, 310. Off-campus Cooperative Education Internship with business, industry, or government unit. S, F grading.
  - 4 Technical Seminar
  - Prereq: Ch E 435, 436. Laboratory experiments in heat and mass transfer; separations, other unit operations, kinetics, control; report writing.
  - 3 [M] Chemical Engineering Lab III
  - 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.
  - 3 Convective Heat Transfer
  - Prereq: M E 515.
523 Basic Concepts in Catalysis 3 (2-3) Preparation and characterization of supported heterogeneous catalysts, mechanistic interpretation of surface reactions and chemisorption, deactivation, and kinetics from lab experiments. Cooperative course taught by WSU, open to UI students (ChE 523).

525 Polymer Reaction Engineering 3 Prereq Ch E 321. Reaction engineering applied to polymerization reactions; effects on polymerization rate, molecular weight, and copolymer composition. Cooperative course taught by WSU, open to UI students (ChE 524).}

526 Microscopic Thermodynamics 3 Same as M E 526.

527 Macromolecular Thermodynamics 3 Same as M E 527.

529 Chemical Engineering Kinetics 3 Interpretation of kinetic data and design of nonideal chemical reactors; fundamentals of heterogeneous catalysis, catalyst preparation, characterization, and theory. Cooperative course taught jointly by WSU and UI (ChE 529).

541 Chemical Engineering Analysis 2 Mathematical analysis of chemical engineering operations and processes; mathematical modeling and computer solution techniques taught jointly by WSU and UI (ChE 541).

546 Mass Transfer Operations 3 Diffusional and equilibrium operations. Cooperative course taught jointly by WSU and UI (ChE 546).

551 Discrete Digital Control 3 (2-3) Prereq Ch E 441. Design and implementation of digital 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.

596 Research Methods and Presentation 1 Prereq graduate standing. Establish sound practices for graduate research and presentation of results; techniques used for performing through literature searching and establishing and testing research hypotheses.

597 Research Methods and Presentation II 2 Prereq graduate standing. Establishing sound practices for presentation of research programs and research results.

598 Research Seminar 1 May be repeated for credit. Seminar presentations on current topics in chemical engineering research. S, F grading.

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

700 Master’s Research, Thesis, and/or Examination 1 Prereq graduate standing. 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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**Department of Chemistry**

Professor and Department Chair: R. G. Youn; Professors: R. W. Brosser; G. A. Crosby; A. K. Dunker; R. H. Filby; H. H. Hill; K. W. Hips; J. K. Hurst; D. S. Matthewson; K. Mopper; R. D. Poshusta; R. C. Ronald; J. D. Satterlee; J. O. Schenk; S. E. Wheland, R. D. Willett; Associate Professors: K. L. Bray; J. P. Jones; K. D. McMichael; Assistant Professors: S. B. Clark; A. P. Garendering; K. A. Peterson; Adjunct Faculty: S. D. Colson; J. Cowin; J. N. S. Evans; J. Fretwell; T. Ichiye; C. Kang; Instructors: H. Place, B. Weisbbart; Preceptors: M. Finnegan; L. Henscheid; WSU/TC Coordinator: S. D. Metcalf.

Chemistry is the fundamental science of matter, the nature of substances, and the changes occurring in them. Chemical reactions are the basis of all life on Earth. Everything we are or do depends in one way or another on chemistry. A major in chemistry prepares you for a variety of careers in industry, education, ecology, and public service, or for graduate study and research in chemistry and many related fields.

The department has excellent facilities and special equipment for study and research at both the undergraduate and graduate level. There are active research programs in both traditional and emerging areas of chemistry. Students in chemistry at WSU are encouraged to take advantage of its excellent facilities and faculty by beginning research projects as early as possible. Research expands experience beyond the classroom into the realm of new knowledge. Typical areas for research are:

- Analytical chemistry, which focuses on the identification and measurement of chemical species wherever they are found. It involves the development and application of new methods of detection and measurement, the application of analytical methods in biological environments, and the use of nuclear and radiochemical techniques in a wide range of applications.
- Environmental chemistry, which applies knowledge of chemical interactions to the study of the environment, is fundamental to any efforts to protect and improve environmental integrity. It involves the analysis of any material found in the environment, whether as the result of human activity or as the result of natural processes. It involves the identification and measurement of chemical materials in rocks and minerals, natural waters, and in the atmosphere.
- Inorganic chemistry, which has as its center the study of the vast majority of the known elements, includes investigations into the mechanisms of electron transfer in complex materials. It is closely related to bioorganic chemistry which includes the study of metal containing proteins by advanced nuclear resonance techniques and investigations of the role of oxidizers in biological processes.
- Materials chemistry, which brings the knowledge and understanding of chemistry to the study of the structure and properties of materials. It involves the study of chemical reactions occurring at surfaces by both experimental and theoretical means. It includes important phenomena such as energy transfer in light absorbing and emitting materials and it extends to the synthesis of new and improved materials.
- Organic chemistry, which deals with the many compounds of carbon. It includes the study of compounds which include metals such as boron, iron, copper and lithium, and it has application to the synthesis of biologically important compounds such as unusual nucleic acids.
- Physical chemistry, which applies the methods and theories of physics to the study of chemical materials. It involves theoretical studies of chemical bonding using advanced computer methods and the investigation of the structures of solids and surfaces by a variety of instrumental methods including light absorption and emission, X-ray techniques, and surface characterization.

The department is on the approved list of the American Chemical Society.

The department offers courses of study leading to the degrees of Bachelor of Science in Chemistry, with options in materials chemistry and environmental chemistry, Master of Science in Chemistry, Master of Arts in Chemistry, and Doctor of Philosophy (Chemistry).

The Department of Chemistry offers a program leading to both a Bachelor of Science and Master of Science in Chemistry within a period of five years. Students wishing to enroll in the program must declare their intentions at the end of the junior year and begin research for the MS thesis while still undergraduates. The program is designed so that the BS degree will normally be awarded at the end of four years and the MS approximately 15 months later. In order to enter this program the student’s undergraduate record must show that the final transcript will satisfy the requirements for admission to the WSU Graduate School. Further information on this program can be obtained from the Department of Chemistry.

A student beginning undergraduate work will begin the study of chemistry with Chem 101, 105 or 115, depending on preparation. In order to take most courses in chemistry above the 100-level, the student must complete one of the following sequences: Chem 101, 105 and 106; 101, 102, and 106; 105 and 106; 115 and 116.

The Department of Chemistry provides major parts of the course work leading to degrees in the Department of Biochemistry and Biophysics and the Program in Materials Science. Students whose interests span chemistry and biology or chemistry and physics should see the section on the appropriate program in this catalog.

**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.

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**Degree Program Requirements**

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

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

A 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)  

**Freshman Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>Chem 105 [P] (GER) or 115&lt;sup&gt;1&lt;/sup&gt;</td>
<td>4</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<td>Second Semester</td>
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<tr>
<td>Biol 102 [B] or 103 [B] (GER)</td>
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<tr>
<td>Chem 106 [P] (GER) or 116&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>Math 172</td>
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<td>First Semester</td>
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<td>Phys 201 [P] (GER)</td>
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<td>Chem 342</td>
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<td>Cpt S 203</td>
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<td><strong>Junior Year</strong></td>
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<td>Chem 220</td>
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<td>Chem 331</td>
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<td>Chem 333</td>
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<td>Second Semester</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Phys 202 [P] (GER)</td>
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<td>First Semester</td>
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<tr>
<td>Chem 425</td>
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<td>Chem 426</td>
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<td>Second Semester</td>
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<tr>
<td>Chem 401&lt;sup&gt;1&lt;/sup&gt;</td>
<td>3</td>
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<tr>
<td>Chem 410 [M]</td>
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<tr>
<td>Chem 495</td>
<td>2</td>
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</tbody>
</table>

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**ENVIRONMENTAL CHEMISTRY OPTION**  
(125 HOURS)  

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**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
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<tr>
<td>First Semester</td>
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<tr>
<td>Biol 103 [B] (GER)</td>
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<td>Chem 105 [P] (GER) or 115</td>
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<td>Engl 101 [W] (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biol 104 [B] (GER)</td>
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<td>Chem 106 [P] (GER) or Chem 116</td>
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<td>ES/RP 101 [B] (GER)</td>
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<td>Math 140 [N] (GER)&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>Phys 101 [P] (GER)&lt;sup&gt;3&lt;/sup&gt;</td>
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<td>Chem 222</td>
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<tr>
<td><strong>Junior Year</strong></td>
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<td>First Semester</td>
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<td>Second Semester</td>
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<td>Chem 481 [M]</td>
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<td>ES/RP 335</td>
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<td>6</td>
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</tbody>
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**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>
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<tr>
<th>Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>Chem 105 [P] (GER) or 115</td>
<td>4</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 171 [N] (GER)</td>
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<td>Elective</td>
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<td>Second Semester</td>
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<tr>
<td>Biol 102 [B] or 103 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Chem 106 [P] (GER) or 116</td>
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<tr>
<td>Math 172</td>
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<td><strong>Sophomore Year</strong></td>
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<td>First Semester</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Chem 338</td>
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<td>Chem 398</td>
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<td>Science Electives&lt;sup&gt;4&lt;/sup&gt;</td>
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<td>Complete Writing Portfolio</td>
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<td>Second Semester</td>
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<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<td>Chem 481 [M]</td>
<td>3</td>
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<td>ES/RP 335</td>
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<td>Science Electives&lt;sup&gt;4&lt;/sup&gt;</td>
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</tbody>
</table>
Intercultural [I,G,K] (GER) 3
MSE 301 3
Phys 410 3
Complete Writing Portfolio

**Second Semester**  
**Hours**
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 6
Chem 332 3
Chem 334 [M] 1
Chem 499 2
MSE 302 3

**Senior Year**

**First Semester**  
**Hours**
Chem 425 2
Chem 426 2
Chem 499 2
Chem Electives\(^1\) 3
Engl 402 [W] (GER) 3
Tier III Capstone (GER) 3

**Second Semester**  
**Hours**
Chem 401 3
Chem 410 [M] 3
Chem 480 3
Chem 495 2
Chem Electives\(^2\) 4

\(^1\)Chemistry 340, 341, 342 may be substituted.
\(^2\)Recommended electives include Ch 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 and mathematics through calculus.

It is desirable that students interested in inorganic, analytical, organic, or physical chemistry present advanced courses in chemistry, computer science, mathematics, or physics; advanced biological science courses are important preparation for students who propose to undertake graduate study in the field of biochemistry.

**Biochemistry**

For course descriptions and schedule of studies in biochemistry, see School of Molecular Biosciences.

**Description of Courses**

**General and Inorganic Chemistry**

Chem 101 [P] Introduction to Chemistry 4 (3-3) Prereq math placement beyond Math 101 or c// in 101. Basic chemical concepts; atomic theory, periodicity, reaction stoichiometry, gases, solutions, acids, basis, pH, equilibrium, kinetics, energy, applications to life sciences.


Chem 105 [P] Principles of Chemistry I 4 (3-3) Prereq one year high school chemistry or Chem 101; Math 107 or c//. Stoichiometry, structure, gases, liquids, solids, solutions, thermodynamics, kinetics, equilibrium, volumetric, and gravimetric analysis. Credit not granted for both Chem 105 and 115.

Chem 106 [P] Principles of Chemistry II 4 (3-3) Prereq Chem 105 or 115 with a grade of C or better; Math 107 with a C or better or placement into Math 140 or higher. Acid-base, ionic, molecular, solubility, oxidation/reduction equilibria; kinetics, electrochemistry; systematic chemistry of the elements; coordination compounds. Credit not granted for both Chem 106 and 116.

Chem 115 [P] Chemical Principles Honors I 4 (3-3) Prereq permission of dept; two years high school chemistry or one year Chem and one year Phys; Math 140 or 171 or c//. Stoichiometry, bonding, structure, gases, liquids, solids, solutions, thermodynamics, chemical reactions, analysis, spreadsheets in chemistry. Credit not granted for both Chem 115 and 105.


Chem 332 or c// 3 (2-3) Chemical basis and molecular structure of everyday materials; polymers, medicines, etc.

Chem 401 3 (3-3) Prereq Chem 332 or c//. Properties of substances; periodic systems; oxidation-reduction and acid-base characteristics interpreted on the basis of atomic and molecular structure.

Chem 402 3 (1-6) Synthesis and characterization of organic and inorganic compounds and solid-state materials; modern synthetic technology, characterization methods, and laboratory techniques.

Chem 403 3 (2-3) Rec Chem 332. Periodic table survey, typical compounds and their reactivity; models and reactivity, acid-base, oxidation-reduction, and electronic structure contributions.

Chem 404 3 (2-3) Rec Chem 301. Transition metal chemistry.


Chem 501 3 Organometallic Chemistry 3 Prereq Chem 501. Structure, bonding, and reaction chemistry of organometallic compounds; applications to homogenous catalysis. Cooperative course taught by UI (Chem 506), open to WSU students.

Chem 502 3 Principles, complex ions and coordination compounds; theory of acids and bases; bonding theory, nonaqueous solvent; familiar elements; periodicity. Cooperative course taught by UI (Chem 564), open to WSU students.

Chem 503 3 Topics in Coordination Chemistry 3 Rec Chem 501. Coordination compounds; halogens; less familiar elements; cathrate, interstitial, nonstoichiometric compounds; chemical bonding; inorganic reaction mechanisms. Cooperative course taught by UI (Chem 565), open to WSU students.

Chem 504 3 Organometallic Chemistry II 3 Prereq Chem 480. Chemistry of natural and pollutant species on the aquatic environment, sediments and soils. Credit not granted for both Chem 480 and 481.


Chem 507 3 Environmental Chemistry II 3 Prereq Chem 481 or 581. Chemistry and reactions of natural and pollutant species on the aquatic environment, sediments and soils. Credit not granted for both Chem 482 and 582.

Chem 508 3 Topics in Inorganic Chemistry V 1-9 Rec Chem 501. Coordination compounds; halogens; less familiar elements; cathrate, interstitial, nonstoichiometric compounds; chemical bonding; inorganic reaction mechanisms. Cooperative course taught by UI (Chem 565), open to WSU students.


Chem 510 3 Analytical, Environmental, and Radiochemistry 3 Prereq Chem 106, or Chem 116; Rec c// in Chem 222. Theories of quantitative chemical analysis; statistical evaluation of data; chemical equilibrium; volumetric and gravimetric methodsof analysis; introduction to electrochemistry.

Chem 511 3 Quantitative Analysis Laboratory 2 (0-6) Prereq Chem 220 or c//. Application of classical methods in volumetric and gravimetric analysis; acid-base, redox and EDTA titrations; ion-exchange chromatography; introduction to spectroscopy.

Chem 512 3 Trace Element Analysis 2 Rec Chem 425. Techniques for the analysis of inorganic materials at trace levels. Credit not granted for both Chem 415 and 512.

Chem 513 3 Trace Organic Analysis 2 Rec Chem 425. Methods for the determination of trace amounts of organic compounds. Credit not granted for both Chem 416 and 516.

Chem 514 3 Radiochemistry and Radiotracers 2 Prereq Chem 331. Credit not granted for both Chem 421 and 521.

Chem 515 3 Radiochemistry Laboratory 1 (0-3) Prereq Chem 222, 331; Phys 202. Credit not granted for both Chem 422 and 522.

Chem 516 3 Activation Analysis 2 (1-3) Prereq Chem 331 or 421. Credit not granted for both Chem 424 and 524.

Chem 517 3 Quantitative Instrumental Analysis 2 Rec Chem 332 or c//, or Chem 336 or c//. Computer interfacing applicable to chemical instrumentation; principles and applications of modern chromatography, spectrophotometry and electrochemical techniques.

Chem 518 3 Quantitative Instrumental Analysis Laboratory 2 (0-6) Prereq Chem 425 or c//. Laboratory experience in modern analytical methods.


Chem 521 3 [M] Environmental Chemistry II 3 Prereq Chem 481 or 581. Chemistry and reactions of natural and pollutant species on the aquatic environment, sediments and soils. Credit not granted for both Chem 482 and 582.

Chem 522 3 Environmental Chemistry Project 2 (0-6) Prereq Chem 482. Laboratory projects in environmental chemistry or environmental analytical chemistry.

Chem 523 3 Bioanalysis 2 Rec Chem 220 or 425. Methods for the measurement of biological compounds.

515 Trace Element Analysis 2 Graduate-level counter- part of Chem 415; additional requirements. Credit not granted for both Chem 415 and 515.

516 Trace Organic Analysis 2 Graduate-level counter- part of Chem 416; additional requirements. Credit not granted for both Chem 416 and 516.

517 Chromatography 2 Prereq Chem 425.

518 Electrochemistry 2 Prereq Chem 425.

520 Advanced Analytical Chemistry 3 Prereq Chem 425. Statistics in chemical analysis; sampling; control of contamination and losses in analysis; electrochemical methods; separation in analysis; spectroscopic techniques.

521 Radiochemistry and Radiotracers 2 Graduate-level counterpart of Chem 421; additional requirements. Credit not granted for both Chem 421 and 521.

522 Radiochemistry Laboratory 1 (0-3) Graduate-level counterpart of Chem 422; additional requirements. Credit not granted for both Chem 422 and 522.

524 Activation Analysis 2 (1-3) Graduate-level counter- part of Chem 424; additional requirements. Credit not granted for both Chem 424 and 524.

527 Environmental Chemistry 2 Graduate-level counter- part of Chem 427; additional requirements. Credit not granted for both Chem 427 and 527.

529 Selected Topics in Analytical Chemistry V 1- 3 May be repeated for credit. Selected current developments. Cooperative course taught by WSU, open to UI students (Chem 525).

581 Environmental Chemistry I 3 Prereq graduate standing. Graduate-level counterpart of Chem 481; additional requirements. Credit not granted for both Chem 481 and 581.

582 Environmental Chemistry II 3 Prereq Chem 581. Graduate-level counterpart of Chem 482; additional requirements. Credit not granted for both Chem 482 and 582.

Physical Chemistry

Chem 331 Problem Solving in Physical Chemistry 1 Prereq Chem 106 or 116; Math 172. Quantitative methods of data analysis and chemical concept development; emphasis on multivariable, matrix, and computer methods.

332 Physical Chemistry 3 Prereq Math 172; Phys 202; c// in Chem 333. Concepts of physical chemistry; basic thermodynamics; free energy and entropy; phase equilibria; properties of solutions of electrolytes and non-electrolytes.

333 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//. Experiments selected to meet the individual needs of students in BC/BB, Biol, C.E., Chem, or MSE.


336 Classical Physical Chemistry 2 Prereq Chem 331. Concepts and applications of classical physical chemistry; transport and kinetic properties; electrochemistry; colloids; polymers and macromolecules;statistical mechanics.

338 Environmental Physical Chemistry 3 Prereq Chem 220, 222. Math 140. Physical chemistry for students in the environmental and biological sciences; emphasis on results and applications of physical chemical principles.


461 Atomic and Molecular Phenomena 3 Prereq Chem 332, Math 273. Basic concepts of atomic structure and spectroscopy; quantum mechanics of atomic phenomena. Credit not granted for both Chem 461 and 561.

480 Solid State Chemistry 3 Prereq Chem 332. Properties, bonding and synthesis of solid state material; crystalline and amorphous solids and coatings.

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 531. Quantum mechanics applied to chemical systems: states of atoms and molecules, transitions and spectra.

537 Advanced Topics in Physical Chemistry V 1-3 May be repeated for credit. Selected subjects; irreversible thermodynamics; chemical bonding; NMR; ligand field theory; x-ray diffraction; neutron diffraction. Cooperative course taught by WSU, open to UI students (Chem 537).

561 Atomic and Molecular Phenomena 3 Graduate- level counterpart of Chem 461; additional requirements. Credit not granted for both Chem 461 and 561.

564 Molecular Phenomena 3 Rec Chem 461 or 561, 509; Phys 450. Phenomena which yield information on structures, energy levels, and interactions of molecules in solid, liquid, and gaseous phases.

Organic Chemistry


340 Organic Chemistry 1 3 (2-2) Prereq Chem 106 or 116. Structure and function in organic chemistry; reaction mechanisms; molecular orbital theory, alkanes, alkenes, alkenes, and aromatics; problem solving skill development. Credit not granted for both Chem 340 and 240.

341 Organic Chemistry Laboratory 2 (0-6) Prereq Chem 340.

342 Organic Chemistry 3 Prereq Chem 340; Rec Chem 341 or c//. Continuation of Chem 340; carboxyl compounds, carboxyl derivatives, amines, carbohydrates, proteins, nucleic acids.

343 Organic Chemistry Laboratory 2 (0-6) Prereq Chem 342 or c//.

540 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 I-3 May be repeated for credit; cumulative maximum 3 hours. Rec Chem 542. 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 secondary chemistry teachers. Physical basis of general and biophysical chemistry.

455 Teaching Chemistry 1 Prereq junior or senior standing; more than 12 hours Chem. Teaching chemistry; workshop for prospective undergraduate teaching assistants focusing on tutorials and labs.

456 Lecture Demonstrations and Their Uses 1 (0-3) Prereq Chem 411, 413; for preselected teachers. Developments, methods and utilization of lecture demonstrations for secondary chemistry teachers.

505 Molecular Basis of Modern Materials and Devices 2 Prereq Chem 411; for preselected teachers. Atomic and molecular structure; the solid state; materials science; transition metals and coordination complexes.

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 (1- 6) For preselected teachers. Analytical methods and instruments, their fundamental basis and applications to educational and industrial practice.


585 Survey of Biophysical Chemistry 3 Prereq BC/BB 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 V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Chem 101, 105, 115, or c/+. Independent study in the theory and practice of modern chemistry; written report required. S, F grading.

391 Special Topics in Chemistry V 1-4 May be repeated for credit; cumulative maximum 6 hours. Prereq Chem 106 or equivalent and by permission. Focus on areas of current chemical research.

398 Undergraduate Seminar I 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 1-3 Prereq Chem 334 or c/+. May be repeated for credit. Introduction to research and advanced laboratory methods; practice in written and oral scientific communication.

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

550 Special Topics in Nuclear Processes and Radioactive Waste Management V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq permission of instructor. Fundamental chemistry of the nuclear industry, chemical processing and waste management.

555 Teaching Chemistry I Teaching chemistry; some workshops for new graduate teaching assistants in chemistry focusing on tutorials and labs.

590 Introduction to Research Topics I Presentation and description of research areas and projects of current interest to faculty.

591 Seminar in Inorganic Chemistry I May be repeated for credit. Presentation and discussion of topics in inorganic chemistry taken from research in progress or current literature.

592 Seminar in Analytical Chemistry I May be repeated for credit; cumulative maximum 6 hours. Presentation and discussion of topics in analytical chemistry taken from research in progress or current literature.

593 Seminar in Physical Chemistry I May be repeated for credit; cumulative maximum 6 hours. Presentation and discussion of topics in physical chemistry taken from research in progress or current literature.

594 Seminar in Organic Chemistry I May be repeated for credit; cumulative maximum 6 hours. Presentation and discussion of topics in organic chemistry taken from research in progress or current literature.

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

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

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

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

Department of Civil and Environmental Engineering


Civil engineers plan, design, construct, and operate the physical works and facilities essential to modern life. Civil Engineers are responsible not only for creating the facilities required by a modern civilization, but also are committed to the conservation and preservation of the environment. Examples of these facilities include bridges, highways, buildings, airports, flood control structures, purification plants for drinking water, waste treatment and disposal facilities, offshore structures, tunnels, irrigation systems, space satellites, and launching facilities.

The program leading to the Bachelor of Science degree in Civil Engineering is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

The mission of the undergraduate program of the Department of Civil and Environmental Engineering is to provide a broad and comprehensive education that prepares our students to be successful in professional practice and advanced studies. The objectives of our undergraduate program are as follows: 1) to educate and equip a new generation of civil and environmental engineers to meet future challenges and needs of our profession; 2) to foster an environment that stimulates learning, provides excellence in instruction, and provides leadership in the development of new teaching methods; 3) to promote interdisciplinary education and integration of new technology and research within the undergraduate experience; 4) to provide our students with a high quality education in basic principles and practical applications; and 5) to instill a sense of social and ethical responsibility among our graduates. Courses can be selected to provide in-depth studies in environmental, geotechnical, hydraulic, structural, and/or transportation engineering.

Design and planning are essential in the civil engineering profession. Accordingly, these activities are introduced in early C E courses. As students advance, they face open-ended assignments with alternative solutions, feasibility studies, safety considerations, economics, social and environmental impacts and other concerns that test their creative ability. All students complete a senior design class in which much of earlier course work is applied. Effective Spring 2000, all seniors will be required to take the Fundamentals of Engineering (FE) exam prior to graduation. Two purposes of this exam are (1) it is a required step in becoming a professional engineer and (2) it serves as an assessment tool for meeting the department's objectives.

Because of the ever-increasing knowledge required to practice at high levels of competence in the specialized branches of civil engineering, an educational preparation of five or more years of college study is becoming more important. By an appropriate choice of electives the undergraduate curriculum may be integrated with a graduate program to provide a continuous schedule of studies leading to both the bachelor’s and master’s degrees.

The department offers courses of study leading to the degrees of Bachelor of Science in Civil Engineering, Master of Science in Civil Engineering, Master of Science in Environmental Engineering, and Doctor of Philosophy (Civil Engineering). The department participates in interdepartmental programs leading to the degrees of Master of Science in Environmental Science, and Master of Regional Planning.

Degree Program Requirements

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

All students completing the schedule of studies below earn a Bachelor of Science degree in Civil Engineering. At least 50 of the total hours required for this degree must be in 300-400-level courses. None of the courses listed below may be taken on a pass, fail basis.

CIVIL ENGINEERING DEGREE PROGRAM (129 HOURS)  ✔ FYDA

Freshman Year

First Semester

C E 120 2
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 1
Math 171 [N] (GER) 4

Second Semester

Biol 103 [B] Micro 101 [B] (GER) 4
ComSt 102 [C] (GER) 3
GenEd 111 [A] (GER) 3
M E 103 3
Math 172 4

Sophomore Year

First Semester

C E 211 3
Cpt S 203 2
Econ 101[S] or Econ 102 [S] (GER) 3
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4

Second Semester

C E 212 3
C E 215 3
Statistics/Numerical Methods 2
Chem 106 [P], Geol 102 [P], or Phys 202 [P] (GER) 4
M E 320 1
Math 315 3

Junior Year

First Semester

C E 301 3
C E 315 3
C E 317 [M] 4
C E 330 3
C E 341 3
E E 304 or M E 301 2
Complete Writing Portfolio

Second Semester

C E 322 3
C E 351 3
C E 463 4
Engl 402 [W] (GER) 3
Intercultural [I,G,K] (GER) 3

94
Senior 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>C E Electives^4</td>
<td>9</td>
</tr>
<tr>
<td>C E Laboratory</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>C E 465 [M]</td>
<td>3</td>
</tr>
<tr>
<td>C E 480 [M]</td>
<td>1</td>
</tr>
<tr>
<td>C E Elective^4</td>
<td>9</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

The Alternate Senior Year Environmental Engineering Emphasis

The alternate senior year schedule shown below is offered to those students interested in studying in 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

<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>C E 415^3</td>
<td>3</td>
</tr>
<tr>
<td>C E 463</td>
<td>3</td>
</tr>
<tr>
<td>C E Elective^4</td>
<td>3</td>
</tr>
<tr>
<td>C E Elective (Rec C E 446 or 471)^4</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C E 408^5</td>
<td>3</td>
</tr>
<tr>
<td>C E 442</td>
<td>3</td>
</tr>
<tr>
<td>C E 465 [M]</td>
<td>3</td>
</tr>
<tr>
<td>C E 480 [M]</td>
<td>1</td>
</tr>
<tr>
<td>C E Elective^4</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

^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.

Strongly recommended for an Environmental Engineering emphasis.

^3 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).

Certification

Certification into the department is the formal acceptance of the student by the department to pursue a professional academic program in that department.

Students who will be completing at least 45 semester hours of course work at the end of the semester including C E 211, Math 171, 172, and Phys 201 or equivalents are eligible to apply for certification into the Department of Civil and Environmental Engineering. The number of students certified into the department depends upon the available resources and facilities. The best qualified students, based on cumulative g.p.a. and grades in the prerequisite courses listed above, will be certified into the department until the carrying capacity is reached. Preference will be given to applications received before April 15 for the fall semester and November 15 for the spring semester.

Transfer Students

Students who are planning to transfer to civil engineering at Washington State University from other institutions should coordinate their program with the department chairperson to establish an integrated program leading to the bachelor’s degree. Inquiries concerning specific questions are welcome. A strong preparation in mathematics and physics is necessary prior to transfer to minimize the time required to complete the degree requirements. The requirements for direct entry into the Department of Civil and Environmental Engineering upon transfer are the same as listed above for certification. Applications from transfer students will be handled by the Admissions Office.

Preparation for Graduate Study

As preparation for academic work toward an advanced degree in civil engineering or environmental engineering, a student should have completed substantially the equivalent of the above schedule of studies.

Description of Courses


Civil Engineering

C E 120 Innovation in Design 2 Same as M E 120.
317 Introduction to Meteorology and the Atmospheric Environment 3 Introduction to meteorology, the atmospheric processes; weather, air pollution, and environmental topics.
318 Statics 3 Prereq Math 172 or c//; Phys 201 or c//. Engineering mechanics concepts; force systems; static equilibrium; centroids, centers of gravity; shear and moment diagrams; friction; moments of inertia. Cooperative course taught jointly by WSU and UI (Engr 210).
215 Mechanics of Materials 3 Prereq C E 211. Concepts of stress, strain, and their relationships; axial loads, torsion and bending; combined stress; properties of materials; columns, repeated loadings. Cooperative course taught jointly by WSU and UI (Engr 230).
216 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//. Structure, index properties, and classification of soils; compaction; effective stress; seepage; consolidation and shear strength.
322 Transportation Engineering 3 Prereq C E 260 or c//. 301. Transportation engineering; demand and performance functions; geometric design; capacity and control of transport modes.
330 Introduction to Structural Engineering 3 Prereq C E 215; Math 220. Introduction to structural analysis and design; statically determinate systems; deflections; structural loads; design philosophies.
341 Introduction to Environmental Engineering 3 Prereq Bio 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 infrastructures, principles of open channel flow, and introduction to surface and ground water hydrology.
400 Highway Materials Engineering 3 (2-3) Prereq senior standing. Basic properties and mix designs of aggregates, asphalt, concrete and recycled materials; quality assurance, quality control.
401 [T] Global Climate Change 3 Prereq completion of one Tier I and three Tier II courses. Basic atmospheric processes; atmospheric change and climate change; global warming; impacts on society and science policy.
403 Environmental Geology 3 Same as Geol 403.
405 Geophysics 4 (3-3) Same as Geol 405.
408 Air Pollution Control Engineering 3 Prereq senior in Engr or Ph S. Measurement and control of air pollution; engineering design calculations; equipment and process. Cooperative course taught jointly by WSU and UI (Ch E 575). Credit not granted for both C E 408 and 508.
410 Experimental Methods in Geotechnical Engineering 3 1-6 Prereq C E 317. Experimental methods of evaluating geotechnical engineering properties including shear strength, stress/strain behavior, time-dependent behavior, and permeability. Credit not granted for both C E 410 and 510.
414 Structural Design Laboratory 3 1-6 Prereq C E 431, 433 or c//. 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 315. Experiments related to fluid flow principles and their application to hydraulic engineering.
418 Hazardous Waste Engineering 3 or 4 Prereq C E 341 or graduate standing. Hazardous waste properties, chemodynamics, and health effects; introduction to risk assessment and hazardous waste remediation. Cooperative course taught by WSU, open to UI students (CE 435). Credit not granted for both C E 418 and 518.
419 Hazardous Waste Treatment 3 Prereq C E 418. Principles of operation and application of processes in design of technologies used in hazardous waste treatment and remediation. Credit not granted for both C E 419 and 519.
425 Soil and Site Improvement 3 Prereq C E 317. Compaction theory and methods; deep densification of soils; advanced consolidation theory, preloading, vertical drains, chemical stabilization, grouting; design with geosynthetics. Credit not granted for both C E 425 and 525. Cooperative course taught by WSU, open to UI students (CE 567).
430 Analysis of Indeterminate Structures 3 Prereq C E 330. Classical and matrix-stiffness methods for the analysis of trusses, beams, and frames; computer applications.
431 Structural Steel Design 3 Prereq C E 330. Design of steel structures by 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 reinforced concrete structures; flexure; shear; bond; serviceability requirements; design of beams, columns, and slabs.

Department of Civil and Environmental Engineering
434 Prestressed Concrete Design 3 Prereq C E 433. Behavior, analysis, and design of pretensioned and post-tensioned prestressed concrete structures; flexure, shear, bond, anchorage zone design; prestress losses. Credit not granted for both C E 434 and 534. Cooperative course taught by WSU, open to UI students (CE 435).

435 Foundations 3 Prereq C E 317. Site investigation; bearing capacity, settlement and design of shallow foundations, piles and piers; design of retaining walls. Cooperative course taught by WSU, open to UI students (CE 461).

436 Design of Timber Structures 3 Prereq C E 330. Engineering properties of wood products; analysis and design connection details, durability and moisture effects; lumber, plywood, 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 facilities associated with gravity controlled and pressurized flow. Cooperative course taught jointly by WSU and UI (CE 422).

451 Open Channel Flow 3 Prereq C E 315. Steady, non-uniform flow; controls and transitions in fixed-bed channels. Credit not granted for both C E 451 and 551.

460 Advanced Hydrology 3 Prereq C E 351. Components of the hydrologic cycle; conceptual models; watershed characteristics; probability/statistics in data analysis; hydrographs; computer models; and design applications. Credit not granted for both C E 460 and 560.

462 Engineering Law and Contracts 2 Development of law, courts, and ethics; law on contracts, agency, sales, property, and patterns; specifications; preparation of contract documents. Cooperative course taught by UI (CE 484), open to WSU students.

463 Engineering Administration 3 Engineering economy; annual cost, present worth, rate of return, and benefit-cost ratio in engineering decision making; basic contract law. Cooperative course taught jointly by WSU and UI (CE 386).

464 Construction Management 3 Job scheduling, 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, and decision making and reporting.

471 Meteorology 3 Prereq Math 273; Phys 202. Basic meteorology; atmospheric thermodynamics; cloud physics, synoptic meteorology; radiative processes; climate change. Credit not granted for both C E 471 and 571.

473 Pavement Design 3 Prereq C E 215, 317; Econ 101 or 102, Math 360; c// in C E 322. Systems approach to managing pavements; evaluation, design, alternative design selection and characterization of pavement materials. Cooperative course taught jointly by WSU and UI (CE 475).

474 Intermediate Transportation Engineering 3 (2-3) Prereq C E 322. Fundamentals of geometric design and traffic engineering for urban and rural highways. Cooperative course taught by UI (CE 474), open to WSU students.

475 Growth and Development 3 E 311 or 315. Study of American cities from 1500 to 1900.


495 Engineering Internship V 1-4 May be repeated for credit; cumulative maximum 4 hours. By interview only. Placement in a professional, governmental, or industrial situation for specialized or general experience. S, F grading.

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

501 Advanced Topics in Transportation Engineering V 2-4 May be repeated for credit; cumulative maximum 9 hours. Prereq C E 322; statistics course. Analysis, planning, design, and evaluation of transportation modes and systems. Cooperative course taught jointly by WSU and UI (CE 571).

502 Design and Construction of Water Wells 3 Analysis of geologic and engineering factors important in design, construction, and maintenance of water wells. Cooperative course taught by UI (Hydr 575), open to WSU students.

507 Seepage and Earth Dams 3 Principles of earthdam design, failures, considerations in construction; principles governing flow of water through soils. Cooperative course taught by UI (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-related field, or by interview only. Modeling of the response of geomaterials to changes in imposed stresses or strains under both static and dynamic conditions.

510 Experimental Methods in Geotechnical Engineering 3 (1-6) Graduate-level counterpart of C E 410; additional requirements. Credit not granted for both C E 410 and 510.

511 Advanced Topics in Geotechnical Engineering V 2-4 May be repeated for credit; cumulative maximum 9 hours. Prereq C E 317. Soil dynamics, geotechnical earthquake engineering, theoretical soil mechanics, numerical methods in soil mechanics, and geohydrology, engineering geology, cold regions geotechnical engineering. Cooperative course taught jointly by WSU and UI (CE 569).

512 Dynamics of Structures 3 Behavior of structures 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, unsymmetrical bending, curved beams, elastic stability, elastically supported beams, energy methods, thin plates, shells. Cooperative course taught jointly by WSU and UI (CE 510/ME 539).

515 Environmental Measurements 3 (1-6) Graduate-level counterpart of C E 415; additional requirements. Credit not granted for both C E 415 and 515.

516 Unsteady Closed-Channel Flow 3 Prereq C E 351. Derivation of governing equations; finite difference methods; characteristics; boundary conditions; computational procedures; transients caused by centrifugal pumps.

517 Unsteady Open-Channel Flow 3 Prereq C E 451. Derivation of governing equations; explicit and implicit finite difference methods; computational procedures; stability and convergence.

518 Hazardous Waste Engineering 3 or 4 Prereq graduate standing. Graduate-level counterpart of C E 418; additional requirements. Credit not granted for both C E 418 and 518.

519 Hazardous Waste Treatment 3 Prereq C E 518. Graduate-level counterpart of C E 419; additional requirements. Credit not granted for both C E 419 and 519.

524 Geotechnical Earthquake Engineering 3 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; interrelations of applied stresses, permeability, strain and shear strength of soils. Cooperative course taught by UI (CE 561), open to WSU students.

528 Advanced Foundation Engineering 3 Prereq C E 317. Consolidation theories, bearing capacity, and settlements of foundations, pile group behavior, theory of subgrade reaction, materials foundations, laterally loaded piles. Cooperative course taught by UI (CE 562), open to WSU students.

529 Soil Dynamics 3 Prereq graduate standing. Vibration theory; analysis of machine vibrations; wave propagation through soils; dynamic loading of soils. Cooperative course taught by UI (CE 565), open to WSU students.

531 Probabilistic Methods in Structural Design 3 Probabilistic structural analysis and design; probabilistic characterization of material properties and load combinations (dead, live, earthquake, wind); LRFD structural design. Cooperative course taught jointly by WSU and UI (CE 445/545).

532 Finite Elements 3 Theory of finite elements; applications to general engineering systems considered as assemblies of discrete elements. Cooperative course taught jointly by WSU and UI (CE 546).

533 Advanced Reinforced Concrete Design 3 Prereq C E 433. Composite design; slab design; limit state design; footings; retaining walls; deep beams; brackets and corbels; torsion; seismic design; shear walls. Cooperative course taught by WSU, open to UI students (CE 547).

534 Prestressed Concrete 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 Prereq C E 512. Ground motion characterization, elastic and inelastic structural dynamic response, code procedures, lateral force-resisting systems, detailing for inelastic response.

540 Instrumental Analysis of Environmental Contaminants 3 (1-6) Prereq C E 415. Theory and methods of analysis of water and water suspensions for contaminants using electro-metric, spectrophotometric, and chromatographic techniques. Cooperative course taught by WSU, open to UI students (CE 530).
541 Environmental Engineering Unit Operations 3
Prereq C E 442; Math 315. Theory and design of physical and chemical unit operations of water and wastewater treatment systems. Cooperative course taught jointly by WSU and UI (CE 531).

542 Environmental Engineering Unit Processes 3
Prereq C E 541. Biochemical energetics and kinetics; biological waste treatment processes; nutrient removal; advanced wastewater treatment design. Cooperative course taught jointly by WSU and UI (CE 534).

543 Advanced Topics in Environmental Engineering Practice V 1-4 May be repeated for credit; cumulative maximum 8 hours. Analysis and evaluation of air/water/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/l. 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 552).

545 Industrial Waste Problems 3
Prereq C E 542 or c/l. Evaluation and feasible solutions of industrial waste problems. Cooperative course taught by WSU, open to UI students (CE 551).

546 Parameters for Synthesis of Wood Composition Materials 3 Same as MSE 546.

547 Principles of Environmental Engineering 3
Prereq C E 315, 341; Math 315. Principles of chemistry, microbiology, thermodynamics, material and energy balances, and transport phenomena, for environmental engineers.

548 Advanced Topics in Water Quality Engineering Systems V 2-4 May be repeated for credit; cumulative maximum 6 hours. Analysis and evaluation of natural water systems for retention and transport of pollutants and their associated impacts.

550 Intermediate Fluid Mechanics 3 Prereq C E 315. Basic flow equations; Navier-Stokes equations; similitude, potential flow, boundary layers, turbulence, and diffusion; uniform and non-uniform conduit flow; drag and lift. Cooperative course taught by WSU, open to UI students (CE 525).

551 Open Channel Flow 3 Graduate-level counterpart of C E 451; additional requirements. Credit not granted for both C E 451 and 551.

552 Advanced Topics in Hydraulic Engineering V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq C E 315. Cavitation, air entrainment, hydraulic machinery, similitude, mixing in rivers and estuaries, hydraulic design. Cooperative course taught by WSU, open to UI students (Hydro 527).

556 Numerical Modeling in Fluid Mechanics 3
Prereq C E 315. Fundamental concepts in development of numerical models for fluid flow with applications to steady and unsteady flows.

560 Advanced Hydrology 3 Graduate-level counterpart of C E 460; additional requirements. Credit not granted for both C E 460 and 560.

561 Water Resource 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, pollution control, navigation, irrigation, recreation. Cooperative course taught jointly by WSU and UI (CE 524).

569 Field Methods in Hydrogeology 2 (1-3) Same as Geol 569.

571 Meterology 3 Graduate-level counterpart of C E 471; additional requirements. Credit not granted for both C E 471 and 571.

572 Advanced Pavement Analysis 3
Prereq C E 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 multiluid systems; analytic and numerical solutions techniques; review of statistical geohydrologic methods.

579 Groundwater Geochemistry V 2-4 May be repeated for credit; cumulative maximum 4 hours. Same as Geol 579.

580 Graduate Seminar 1 May be repeated for credit; cumulative maximum 2 hours. Lectures and reports on current developments in research and practice.

581 Environmental Engineering Analysis 2 (1-3) Prereq C E 541. Theoretical and laboratory methods for design of development 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 CE 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 situ subsurface treatment of hazardous waste; subsurface microbial degradation as related to microbial ecology.

588 Atmospheric Turbulence and Air Pollution Modeling 3 Prereq C E 571. Physical aspects of atmospheric turbulence, theoretical developments in atmospheric diffusion, and applied computer modeling with regulatory and research models.

589 Atmospheric Chemical and Physical Processes V 2-3 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.

590 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.

596 Field Methods in Hydrogeology 2 (1-3) Same as Geol 569.

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

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

Edward R. Murrow School of Communication


Communication is a vital force in society. New practices and techniques in communication require that instruction and research explain these phenomena and prepare students to take their place in this field. The curricula of the Edward R. Murrow School of Communication lead to the degrees of Bachelor of Arts in Communication and Master of Arts in Communication. The school also participates in the university’s interdisciplinary Ph.D. program.

Students may major in advertising, broadcasting, broadcast management, communication studies, journalism, media and the law, or public relations. Students may also fashion a general communication curriculum. The undergraduate program reflects a blending of professional, liberal arts, and theory and research courses.

Students in newspaper journalism and communication studies may prepare for teacher certification through the Department of Elementary and Secondary Education. The School also cooperates with the College of Agriculture and Home Economics in support of the agricultural communications option. Supplementing the classrooms and laboratories of the Murrow School are the professional internship program, campus radio and television facilities, and student publications, including a daily newspaper.

Certification Requirements

To certify a major in communication, a student must meet the following minimum requirements: (1) Complete Com 101, 245, 270, 295 and ComSt 102; (2) Earn a cumulative g.p.a. of 2.5 in all WSU courses; (3) Earn a cumulative g.p.a. of 2.7 in Com 245, 270, and 295; (4) Earn a grade no lower than C in Com 295. Students transferring into the department with 55 or more hours should complete the certification requirements within two semesters. All students should certify before earning 90 credit hours.

General School Requirements

Each student will complete the requirements of one of the following sequences and accumulate an emphasis of 18 hours (9 300-400-level hours) in a second department. At least 75 of the 120 hours required for the Bachelor of Arts degree in Communication must be taken in other departments. Transfer students, in meeting the requirements of their chosen sequence, must take a minimum of 15 credit hours in the school.
### Degree Program Requirements

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

All degree programs require a minimum of 39 semester hours in communication. Students have three options to meet the enrichment/internship requirements:

- 6 hours of internship credit; 3 hours of internship credit and 3 of communication literacy or development courses; or
- 3 hours of communication literacy and 3 of development courses.

### FIRST YEAR REQUIREMENTS

The first year requirements are common to all communications degree programs:

#### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Com 101</td>
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<tr>
<td>Engl 101 [WJ] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<tr>
<td>Com 270</td>
<td>3</td>
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<tr>
<td>ComSt 102 [CJ] (GER)</td>
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<tr>
<td>GenEd 111 [AJ] (GER)</td>
<td>3</td>
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<tr>
<td>Science Elective (GER)</td>
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### ADVERTISING DEGREE PROGRAM (120 HOURS)

#### Sophomore Year

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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Com 245</td>
<td>3</td>
</tr>
<tr>
<td>Com 295</td>
<td>3</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<tr>
<td>Emphasis Elective</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Adver 380</td>
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</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Com 245</td>
<td>3</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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### BROADCAST MANAGEMENT DEGREE PROGRAM (120 HOURS)

#### Sophomore Year

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<tbody>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Com 245</td>
<td>3</td>
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<td>Math Proficiency [N] (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] (GER)</td>
<td>3</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Adver 380 or Bdcst 360</td>
<td>3</td>
</tr>
<tr>
<td>Bdcst 350</td>
<td>3</td>
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<tr>
<td>Bdcst 481, satisfies Com Development [M]</td>
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<tr>
<td>Econ 102 [S] (GER)</td>
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<tr>
<td>Foreign Language, if necessary, or Emphasis Elective</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>B Law 210 or Dec S 360</td>
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<tr>
<td>Bdcst 355 or 365 [M]</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Com 415, satisfies Com Development</td>
<td>3</td>
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<tr>
<td>Mktg 360</td>
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### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Bdcst 455 or 465 [M]</td>
<td>3</td>
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<tr>
<td>Econ 320, 340, or Fin 325</td>
<td>3</td>
</tr>
<tr>
<td>Com Literacy (for Enrichment)</td>
<td>3</td>
</tr>
<tr>
<td>Emphasis Elective</td>
<td>3</td>
</tr>
<tr>
<td>Seminar [M]</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Com 409, satisfies Com Development</td>
<td>3</td>
</tr>
<tr>
<td>Com 440, satisfies Com Literacy</td>
<td>3</td>
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<tr>
<td>Com Development (for Enrichment)</td>
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### BROADCAST PRODUCTION DEGREE PROGRAMS (120 HOURS)

#### Sophomore Year

<table>
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<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Com 245</td>
<td>3</td>
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<tr>
<td>Com 295</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Emphasis Elective</td>
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</table>

<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>Intercultural [I,G,K] (GER)</td>
<td>3</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Emphasis Electives</td>
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<tr>
<td>Adv 382</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<tr>
<td>Com Development Elective</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Adver 380</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>Com 245</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
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### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bdcst 455 or 465 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Econ 320, 340, or Fin 325</td>
<td>3</td>
</tr>
<tr>
<td>Com Literacy (for Enrichment)</td>
<td>3</td>
</tr>
<tr>
<td>Emphasis Elective</td>
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<tr>
<td>Seminar [M]</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Bdcst 365</td>
<td>3</td>
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<tr>
<td>Bdcst 440 or 460</td>
<td>3</td>
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<tr>
<td>ComSt 324, 385, 401, Jour 425</td>
<td>3</td>
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<tr>
<td>Foreign Language, if necessary, or Electives</td>
<td>3</td>
</tr>
<tr>
<td>Seminar [M]</td>
<td>3</td>
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</tbody>
</table>

1 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
2 Students must take one year of foreign language if two years of a foreign language was not taken at the high school level.
3 Any seminar numbered 475 in communication.

---

Edward R. Murrow School of Communication
## COMMUNICATION STUDIES DEGREE PROGRAM (120 HOURS)

### 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>Com 245</td>
<td>3</td>
</tr>
<tr>
<td>Com 295</td>
<td>3</td>
</tr>
<tr>
<td>ComSt 185 or 235</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Com 245</td>
<td>3</td>
</tr>
<tr>
<td>Com 295</td>
<td>3</td>
</tr>
<tr>
<td>ComSt 185 or 235</td>
<td>3</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Any seminar numbered 475 in communication.</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
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<tr>
<td>Any seminar numbered 475 in communication.</td>
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### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Com Literacy (For Enrichment)</td>
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<tr>
<td>Emphasis Electives</td>
<td>6</td>
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<tr>
<td>Seminar [M]</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Com Development (For Enrichment)</td>
<td>3</td>
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<tr>
<td>Foreign Language, if necessary, or Elective</td>
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<tr>
<td>Jour 425</td>
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### MEDIA AND THE LAW DEGREE PROGRAM (120 HOURS)

### Sophomore Year

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<th>Hours</th>
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<tr>
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<td>Com 245</td>
<td>3</td>
</tr>
<tr>
<td>Com 295</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
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</tr>
<tr>
<td>Emphasis Elective</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Foreigh Language, if necessary, or Elective</td>
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<td>Jour 305</td>
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<td>Second Semester</td>
<td>Hours</td>
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<td>300-400-level Emphasis Electives</td>
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### Junior Year

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<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>300-400-level Emphasis Electives</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
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<td>Biological Sciences [B] (GER)</td>
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<td>Communication Development Elective</td>
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<td>Foreign Language, if necessary, or Elective</td>
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### Senior Year

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<td>Second Semester</td>
<td>Hours</td>
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### JOURNALISM DEGREE PROGRAM (120 HOURS)

### Sophomore Year

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<tr>
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<td>Com 245</td>
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<td>Emphasis Elective</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, if necessary, or Elective</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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### Junior Year

<table>
<thead>
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<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Any seminar numbered 475 in communication.</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
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<tr>
<td>Any seminar numbered 475 in communication.</td>
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### Senior Year

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<th>First Semester</th>
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<tbody>
<tr>
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### PUBLIC RELATIONS DEGREE PROGRAM (120 HOURS)

### Sophomore Year

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<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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<td>Math Proficiency [N] (GER)</td>
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<tr>
<td>Emphasis 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>300-400-level Emphasis Electives</td>
<td>6</td>
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<td>Jour 305</td>
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</tr>
<tr>
<td>Mtkg 360</td>
<td>3</td>
</tr>
</tbody>
</table>

Edward R. Murrow School of Communication
Intersequence Courses

Com
138 Freshman Special Topics 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.
245 Language and Human Behavior 3 Prereq sophomore standing. Theories of language as it influences human behavior in meaning production, problem solving and construction of social reality.
253 Photocommunications 3 (2-3)
270 Introduction to Mass Communication Theory 3 Prereq sophomore standing. Theories of mass communication and how it influences behavior.
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 UI (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.
440 Media Ethics 3 Prereq senior standing. Foundations and frameworks of media ethics; case studies in assessing media performance. Credit not granted for both Com 440 and 540.
450 Mass Media and the First Amendment 3 Prereq senior standing. Theoretical and philosophical bases of press, individual and government interaction centering on First Amendment. Credit not granted for both Com 450 and 550.
453 Advanced Photography 3 (2-3) Prereq Com 253. Portfolio development/directional development of student work; advanced black and white printing techniques.
460 Mass Media Criticism 3 Prereq senior standing. Theoretical and philosophical basis for critical analysis of mass communication. Credit not granted for both Com 460 and 560.
464 Gender and the Media 3 Prereq Com 101 or W St 200. How news and entertainment media shape and reinforce societal expectations of gender; consideration of race, age, class, and sexual orientation.
470 Mass Communications Theories and Theory Construction 3 Prereq senior standing. Theories of mass communication and the process of theory construction.
471 [T] [D] Stereotypes and The Media 3 Prereq completion of one Tier I and three Tier II courses. Examines portrayals of social groups in the media and the impact portrayals have on perceptions, expectations, and aspirations of members of portrayed groups and nonmembers.
481 Communication Laboratory 3 For seniors and graduate students.
495 Communication Professional Internship V 2 (0-6) to 12 (0-36) May be repeated for credit; cumulative maximum 12 hours. By interview only. S, F grading.
499 Special Problems V 1–4 May be repeated for credit. S, F grading.
501 Theory Building in Communications 3 Relationship of research to theory development; evaluation of research theory and research; planning and executing research within specified theoretical frameworks.
504 Instructional Practicum 1 May be repeated for credit; cumulative maximum 4 hours. S, F grading.
509 Quantitative Research 3 Introduction to quantitative research in communication; hypothesis development, testing; basic statistics, interpretation; field surveys, laboratory and field experiments, content analysis.
510 History of Mass Communications 3 Graduate-level counterpart of Com 410; additional requirements. Credit not granted for both Com 410 and 510.
515 Law of Mass Communications 3 Graduate-level counterpart of Com 415; additional requirements. Credit not granted for both Com 415 and 515 requirements.
520 New Communication Technologies 3 Graduate-level counterpart of Com 420; additional requirements. Credit not granted for both Com 420 and 520.
524 Criticism of Public Address 3 Graduate-level counterpart of Com 424; additional requirements. Credit not granted for both Com 424 and Com 524.
525 Rhetorical Theory 3 Major theories from classical to contemporary; analysis of symbolic action in public, political discourse.
538 Seminar in Training and Development 3 May be repeated for credit; cumulative maximum 6 hours. Instructional aspects of training and consultation in organizational communication; teambuilding, presenational skills, conflict resolution, assessment leadership, group dynamics.
540 Media Ethics 3 Graduate-level counterpart of Com 440; additional requirements. Credit not granted for both Com 440 and 540.
550 Mass Media and the First Amendment 3 Graduate-level counterpart of Com 450; additional requirements. Credit not granted for both Com 450 and 550.
560 Mass Media Criticism 3 Graduate-level counterpart of Com 460; additional requirements. Credit not granted for both Com 460 and 560.
570 Communication Theory 3 Relevant theories and research from mass and interpersonal communication.
580 Topics in Communication 3 May be repeated for credit; cumulative maximum 12 hours. Contemporary, specialized, or technical topics in communication.
585 Interpersonal and Small Group Communication 3 Theory and research in interpersonal and small group communication.
591 Qualitative Research Methods 3 Historical, textual, and legal methodologies for theory-based evaluative and discourse studies in communication.
599 Seminar in Communication 3 May be repeated for credit; cumulative maximum 6 hours. Special topics in rhetoric, communication, and public address.

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

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

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

Advertising

Adver

380 Advertising Principles and Practices 3 Advertising history, theory and practice by advertising agencies and organizations.


382 Media Planning 3 Prereq Adver 380. Media planning theories, strategies, and practices.

475 [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) 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.

575 [M] Seminar in Broadcasting 3 May be repeated for credit; cumulative maximum 9 hours. By interview only. For seniors and graduate students.

Field TV Production 3 (1-6) Prereq Bdcst 355. May be repeated for credit; cumulative maximum 6 hours. Field production; editing; advanced studio production.

465 [M] Broadcast News Writing, Reporting, and Editing 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq Bdcst 365. Writing, reporting, and editing broadcast news; development and production of documentaries. Credit not granted for both Bdcst 465 and 565.

466 Advanced Reporting and Documentary 3 (2-3) Prereq Bdcst 465. Advanced writing and reporting for radio or television; feature-length reporting on news and public affairs topics; documentaries. Credit not granted for both Bdcst 466 and 566.

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 466 and 566.

566 Advanced Reporting and Documentary 3 (2-3) Graduate-level counterpart of Bdcst 466; additional requirements. Credit not granted for both Bdcst 466 and 566.

581 Broadcast Management 3 Graduate-level counterpart of Bdcst 481; additional requirements. Credit not granted for both Bdcst 481 and 581.

Communication Studies

ComSt


185 Principles of Interpersonal Communication 3 Theory and practice of interpersonal communication; understanding and applying 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 PR 312. Communication theory and organizational functions; communication influences on organizational behavior, managerial effectiveness, corporate culture, organizational power and politics.

351 Advanced Interpretation 3 Voice and diction, interpretation of copy for broadcast.

385 Advanced Principles of Interpersonal Communication 3 Theoretical literature relevant to analyzing relationships; students use this information to analyze a relationship.

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 one Tier II course; junior standing. Exploration of the affects of and social political, economic and cultural constraints on free expression in contemporary America.

417 [M] Specialized Writing 3 Prereq Jour 305. Reporting techniques and issues related to specialized media fields.


431 Advanced Editing 3 (2-3) Prereq Adver 381, Jour 330, or PR 313. Advanced copy editing and design techniques; emphasis on visual communication.

475 Seminar in Journalism 3 May be repeated for credit; cumulative maximum 9 hours. For seniors and graduate students.
The Department of Comparative American Cultures publishes the Working Paper Series in Cultural Studies, Ethnicity, and Race Relations, an international scholarly project for the research and exchange of ideas on globalization, ethnic conflict, and new forms of racism and sexism in the world system. It awards several scholarships to deserving students. It sponsors a film and lecture series. It supports the Cultural Studies Club for CAC majors and the multicultural student centers of WSU. It cooperates with other programs and departments to promote multicultural democratic initiatives at WSU.

### Degree Program Requirements

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

#### FIRST YEAR REQUIREMENTS

The first year requirements for all Comparative American Culture degree programs are as follows:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAC 101 [I] (GER) or 201</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective (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>Area Of Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Students electing the concentration in One Ethnic Area take CAC 101.
2 For the concentration in Ethnic Studies, choose 15 hours in one ethnic area of concentration, at least half must be at the 300-400-level. For the concentration in Multithematic Studies, choose a total of 24 hours from the following: six credits in African American studies courses, six credits in Asian/Pacific American courses, six credits in Chicana/o studies courses, and six credits in Native American studies courses. For the concentration in Pre-Counseling, complete CAC 300, 302, 337, 403; and choose two from Engl 324, 350, or EdPsy 322. For the concentration in Multicultural Literature and Pedagogy, complete CAC 220, 313, 331, 333, 373; choose one from Engl 322 or 324; and one from CAC 405, 440, or 491. For the concentration in Pre-Law, complete CAC 300, 335, 440, 491; choose

### 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, Jr.:** Professors, A. Kuo, J. Peterson; Associate Professors, D. Aguilar, Y. Flores Niemann, S. Fowler, R. Ong; Assistant Professors, K. Ervin, M. Gaterl, B. Pincheon, T. Schenk, L. Vo; Associate Professor Emeriti, T. Anderson, W. Willard.
two from Soc 340, 363, or 364; and two from Pol S 300, 330, 404, or Crim J 403. For the concentration in Cultural Studies, complete CAC 405 and 491; choose one from CAC 220, 313, 331, 336, 338, 353, or 373; one from CAC 302, 337, 403, 411, 435, 454, 457, one from Am St 424, 471, or CAC 413, one from Engl 339 or 470, and one from W St 391 or 484.

1 For the concentration in Pre-Law, take Phil 201 [H]. For all other concentrations, Am St 216 [H] is strongly recommended.

2 For the concentration in Pre-Counseling, take Psych 105 [S]. For all other concentrations, W St 200 [S] is strongly recommended.

<table>
<thead>
<tr>
<th>COMPARATIVE AMERICAN CULTURES, CONCENTRATION IN ETHNIC STUDIES (120 HOURS)</th>
<th>FYDA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sophomore Year</strong></td>
<td></td>
</tr>
<tr>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>CAC 303</td>
<td>3</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Outside Area Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Area Of Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>CAC 201</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>Junior Year</td>
<td></td>
</tr>
<tr>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Area Of Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>CAC 405</td>
<td>3</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Writing In The Major Elective</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Area Of Concentration</td>
<td>3</td>
</tr>
<tr>
<td>CAC 401</td>
<td>3</td>
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<tr>
<td>Writing In The Major Elective</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Senior Year</td>
<td></td>
</tr>
<tr>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Area Of Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>300-400-level Electives</td>
<td>9</td>
</tr>
<tr>
<td>Area Of Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>
| 1 Choose a total of 24 hours from the following: six credits in African American studies courses, six credits in Asian/Pacific American courses, six credits in Chicana/o studies courses, and six credits in Native American studies courses.
| 2 Choose 6 credits from CAC 220, 300, 302, 403, 405, 440, and 491.
| 3 Recommended electives include CAC 300, 405, 440, and 491.
| 4 W St 484 is recommended. |
| **COMPARATIVE AMERICAN CULTURES, CONCENTRATION IN PRE-COUNSELING (120 HOURS) | FYDA |
| **Sophomore Year** |  |
| First Semester | Hours |
| Area Of Concentration | 3 |
| Communication Proficiency [C,W] (GER) | 3 |
| Math Proficiency [N] (GER) | 3 |
| Outside Area Concentration | 3 |
| Second Semester | Hours |
| Area Of Concentration | 6 |
| Arts & Humanities [H,G] or Social Sciences [S,K] (GER) | 3 |
| Intercultural [I,G,K] (GER) | 3 |
| Junior Year |  |
| First Semester | Hours |
| Area Of Concentration | 6 |
| Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) | 3 |
| Physical Sciences [P] (GER) | 4 |
| Writing In The Major Elective | 3 |
| Complete Writing Portfolio |  |
| Second Semester | Hours |
| Area Of Concentration | 3 |
| CAC 401 | 3 |
| Writing In The Major Elective | 3 |
| Electives | 9 |
| Senior Year |  |
| First Semester | Hours |
| Area Of Concentration | 3 |
| Social Sciences [H,G,I,S,K] (GER) | 3 |
| Electives | 9 |
| Second Semester | Hours |
| 300-400-level Electives | 9 |
| Area Of Concentration | 3 |
| Tier III Capstone (GER) | 3 |
| 1 Complete CAC 300, 302, 337, 403; and choose two from Psych 324, 350, or EdPsy 322.
| 2 Choose 12 credits from CAC 131, 235, 332, 336, 337, 338; choose one from CAC 111, 211, 314, 411, 413; choose one from CAC 151, 255, 355, 356, 357, 453, 454; choose one from CAC 171, 217, 372, 375, 376, 377, 378, or 475.
| 3 Recommended electives include CAC 405, 440, and 491. |

<table>
<thead>
<tr>
<th>COMPARATIVE AMERICAN CULTURES, CONCENTRATION IN MULTICULTURAL LITERATURE AND PEDAGOGY (120 HOURS)</th>
<th>FYDA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sophomore Year</strong></td>
<td></td>
</tr>
<tr>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Area Of Concentration</td>
<td>6</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Outside Area Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Area Of Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Senior Year</td>
<td></td>
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<tr>
<td>First Semester</td>
<td>Hours</td>
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<tr>
<td>Area Of Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Electives</td>
<td>6</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
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<tr>
<td>Area Of Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>
| 1 Choose 9 credits from CAC 220, 300, 302, 403, 440, and 491.
| 2 Choose 15 hours in one ethnic area of concentration; at least half must be at the 300-400-level.
| 3 Recommended electives include CAC 300, 405, 440.
| 4 W St 484 is recommended. |
Department of Comparative American Cultures

MINOR IN AFRICAN STUDIES

The African Studies minor provides a broad interdisciplinary program designed to present the unity and diversity of African peoples, economies, and cultures. Students minoring in African studies are expected to fulfill all of the university’s requirements for graduation, as well as 18 hours of core courses, with 9 hours in the African Studies Minor core sequence. At least half of the 18 hours must be at the 300-400 level.

Core courses (9 hours): Anth 307, CAC 227, 439. Electives (9 hours): Three of the following: CAC 131, 235, 331, Pol S 460.

African Languages: Students may take up to 6 hours of an African language to fulfill elective requirements by making special arrangements with Independent Study Program.

Independent Study: CAC 499.

Description of Courses

Comparative American Cultures

CAC

101 [I] Introduction to Comparative American Cultures 3 Comparative issues in Asian American, African American, Chicana/o, and Native American cultures in the United States.

111 [S] [D] Introduction to Asian/Pacific American Studies 3 Examination of the social, political, economic, and cultural experiences of Asian/Pacific Americans in the historical and contemporary period.

131 [S] [D] Introduction to Black Studies 3 An introduction to general knowledge concerning African Americans in the USA.

151 [G] Introduction to Chicano Studies 3 Chicano culture and peoples (Amercian of Mexican descent); historical backgrounds and contemporary conditions.

171 [G] Introduction to Native American Studies 3 Introduction to Native American studies; introductory course to contemporary native America.

201 Cultural Politics of Race, Ethnicity, and Identity 3 Historical, political, social, and global formations of racial and ethnic identities in the US.

211 [K] Asian/Pacific American History 3 Historical experience of Asian/Pacific Americans since the 19th century.

212 [K] Peoples of the World 3 Same as Anth 203.

217 [K] Introduction to East Asian Culture 3 Same as Hist 275.

220 Introduction to Multicultural Literature 3 Survey of multicultural literature including European American, African American, Asian American, Chicana/o, and Native American authors.

227 [I] Introduction to African Studies 3 African continent; history, politics, art, and their effects today.

235 [H] [D] African American History 3 History of African Americans in the US. with emphasis upon major themes of the Black experience.

254 [S] [D] Comparative Latino/a Cultures 3 Comparison of the contemporary and historical experiences of Latinos and Latinas in the United States, and their relations with other ethnic minority groups and the majority populations.

255 [S] [D] Chicana/o History 3 The historical development of the Chicana/o community in relation to the dynamics of race relations, class structure, ethnic identity, gender, and sexuality in American society from 1521 to the 20th century.

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

COMPUTER ENGINEERING OR
COMPUTER SCIENCE
See School of Electrical Engineering and Computer Science.

Program in Criminal Justice


The Program in Criminal Justice, located in the Department of Political Science, offers substantive studies in criminal justice in conjunction with a liberal arts education. It prepares students for a broad range of careers (law enforcement, correction, juvenile justice, private security, non-profit) or the pursuit of graduate study or law school, develops leadership qualities, and promotes the ideal of professional achievement in public service.

The program focuses on the multi-disciplinary study of crime and its control, including the components, processes, and programs of the criminal justice system. The curriculum emphasizes the analysis and theories of crime and deviance, criminal law, 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
Criminal Justice Degree Program Requirements

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

Students who major in criminal justice must complete the 12 credit criminal justice core (Crm J 101, 150, 320, 330) plus an additional 12 credits of electives (with 9 of the 12 in Crm J courses); of these 24 hours no more than 3 can be taken in Crm J 490. In addition, the student must complete several collateral courses as outlined below. At least 40 of the total hours required for the bachelor’s degree in this program must be in 300-400-level courses.

All criminal justice majors are required to complete a statistics course.

CRIMINAL JUSTICE DEGREE PROGRAM (122 HOURS)  ✔FYDA

Freshman Year
First Semester Hours
Arts & Humanities [H,G] (GER) 3
Crm J 101 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Social Sciences [S,K] (GER) 3
Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Communication [C,W] (GER) 3
Crm J 150 3
GenEd 111 [A] (GER) 3
Science Elective (GER) 4

Sophomore Year
First Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Biological Sciences [B] (GER) 4
Crm J 320 3
Intercultural [I,G,K] (GER) 3
Math Proficiency [N] (GER) 3
Second Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Physical Sciences [P] (GER) 4
Psych 311, Soc 321, or Approved Statistics Course 3 or 4
Two from: Pol S 300, 402, 404, 443 or Soc 364 6

Junior Year
First Semester Hours
Crm J 330 3
Crm J Electives 3
Complete Writing Portfolio 12

Second Semester Hours
One from: Pol S 316, 416, or Soc 424 3
Crm J 340 3
Soc 320 3
Soc 361 3
Soc 461 3

Senior Year
First Semester Hours
Foreign Language, if necessary, or Electives 4
Electives 12
Second Semester Hours
Foreign Language, if necessary, or Electives 4
Tier III Capstone (GER) 3
Electives 6

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 356, 370, 381, 400 [M] (may be taken twice), 403, 405 [M], 420 [M], 425, 499, 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).


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.


490 Criminal Justice Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. Prereq Crm J 101. By interview only. Off-campus professional internship in selected criminal justice agencies. S, F grading.

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

504 Quantitative Methods in Political Science and Criminal Justice 3 Same as Pol S 504.

505 Comparative Criminal Justice 3 Comparative study of crime laws and criminal justice systems in selected foreign countries. Cooperative course taught by WSU, open to UI students (CJ 505).

530 Criminal Justice: Process and Institutions 3 Processes of criminal justice in the context of the social, political, and economic environments. Cooperative course taught by WSU, open to UI students (CJ 530).

539 The Political Science Profession 1 Same as Pol S 539.

540 Seminar in Research Evaluation 3 Interrelationship of ideology, data, policy development, and policy implementation in public policy analysis. Cooperative course taught by WSU, open to UI students (CJ 540).
Department of Crop and Soil Sciences

Professor and Department Chair, T. A. Lumpkin; Crop Science: Professors, A. Kleinheims, F. J. Mauelshagel, J. M. Linker, M. K. Walker, R. Simmons, S. E. Ullrich, D. VonWettstein, R. L. Warner; Associate Professors, P. Chavalier, S. C. Fransen, A. N. Hang, S. S. Jones, W. Schilling, G. Stahake, F. L. Young; Assistant Professors, S. Dofing, 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, T. J. Kidwell, T. Miller, C. F. Morris, M. Stannard, J. P. Yenish. Teaching, research, and extension careers are available in the Department of Crop and Soil Sciences. 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. Opportunities also exist for further study and employment in international development, nonagricultural ecosystems. Turf management opportunities include golf course management, recreational facilities management, and lawn care. Graduates qualify for careers in agribusiness, corporate and technical farm management, professional consulting, research, sales, plant biotechnology, and service positions. Positions are available in government and commercial agencies such as USDA's Agricultural Research Service, Natural Resource Conservation Service and Cooperative Extension; the Environmental Protection Agency; the Washington State Department of Ecology, Department of Agriculture and Department of Natural Resources; as well as in food processing companies, insurance agencies, and commercial concerns dealing with farm products, fertilizers and agricultural chemicals and seeds. Opportunities also exist for further study and employment in international agriculture such as through the US Agency for Internation Development (USAID) and The World Bank, international research institutes, church run agricultural development organizations, and the US Peace Corps. Teaching, research, and extension careers are available in community colleges and universities for graduates with advanced degrees. An interdisciplinary curriculum in integrated pest management is available to those students whose interests span the areas of crop science and pest management. This curriculum is described under the entomology section of this bulletin.

Crop Science Degree Program Requirements

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

At least 40 credit hours must be in 300-400-level courses. Core and option requirements cannot be taken pass, fail. Students must consult advisors. All crop science majors must select one of the study options listed below in addition to completing the core courses above.

Crop science elective courses include: CropS 301, 302, 303, 360, 410, 469 and 498. A maximum of 3 credits of 498 can be used to satisfy a crop science elective. U H 450 may substitute for CropS 498. Emphasis is on basic principles of plant science technology, business, industry, science, and end-product marketing. Various options offer specialized, professional, applied, and scientific training for a variety of career opportunities as well as thorough preparation for graduate school.

FIRST AND SECOND YEAR REQUIREMENTS

Requirements for the first and second years are common to all crop science degree programs:

**Freshman Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Econ 201 [S], Econ 101 [S], or Econ 102 [S] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CropS 101</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Math 107</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>Biol 103 [B] (GER)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Chem 102 [P] or 106 [P] (GER)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ComS 102 [C] or H D 205 [C] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>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>Arts &amp; Humanities [H,G]</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Biol 104 [B] or Bot 120 [B] (GER)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CropS 201</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SoilS 201 [B] (GER)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**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] or Social Sciences [S,K] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Chem 240</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Stat 212 [N] (GER)</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

1 Students in the Science/Biotechnology degree program must take Chem 105 and 106.
2 Students in the Science/Biotechnology degree program must take Math 140 or 171 instead.
### BUSINESS AND INDUSTRY DEGREE PROGRAM (124 HOURS) ✅FYDA

For students who wish to engage in farming, corporate farm management, production specialist positions, consulting, international careers, and agribusiness.

#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec Elective</td>
<td>2 or 3</td>
</tr>
<tr>
<td>Ag Ec Mgt or Mktg sequence</td>
<td>3</td>
</tr>
<tr>
<td>Bot 320</td>
<td>4</td>
</tr>
<tr>
<td>CropS 360</td>
<td>3</td>
</tr>
<tr>
<td>CropS 403</td>
<td>3</td>
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Complete Writing Portfolio

#### Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec Mgt or Mktg sequence</td>
</tr>
<tr>
<td>Crop Production Elective</td>
</tr>
<tr>
<td>SoilS 441</td>
</tr>
<tr>
<td>SoilS 442</td>
</tr>
<tr>
<td>Elective</td>
</tr>
</tbody>
</table>

#### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec Elective</td>
<td>2 or 3</td>
</tr>
<tr>
<td>CropS 305</td>
<td>3</td>
</tr>
<tr>
<td>CropS 498 or 499</td>
<td>1-3</td>
</tr>
<tr>
<td>Crop Production Elective</td>
<td>3</td>
</tr>
<tr>
<td>PI P 429</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acctg or Mgt Elective</td>
</tr>
<tr>
<td>Ag Ec Elective</td>
</tr>
<tr>
<td>CropS 411 [M]</td>
</tr>
<tr>
<td>CropS 412</td>
</tr>
<tr>
<td>CropS 445 [M]</td>
</tr>
<tr>
<td>Elective</td>
</tr>
</tbody>
</table>

#### ENVIRONMENTAL STEWARDSHIP DEGREE PROGRAM (126 HOURS) ✅FYDA

For students who wish to specialize in soil resource management, plant/soil relationships, and landscape conservation.

#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Econ 211 or NATRS 303</td>
<td>3</td>
</tr>
<tr>
<td>CropS 303</td>
<td>3</td>
</tr>
<tr>
<td>CropS 360</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 301</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Complete Writing Portfolio

#### Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bot 320</td>
</tr>
<tr>
<td>CropS Elective</td>
</tr>
<tr>
<td>ES/RP 444</td>
</tr>
<tr>
<td>SoilS 421 or 431</td>
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</table>

#### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CropS 305</td>
<td>3</td>
</tr>
<tr>
<td>CropS 498 or 499</td>
<td>1-3</td>
</tr>
<tr>
<td>IPM 201 or 462</td>
<td>2 or 3</td>
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<tr>
<td>PI P 429</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 372</td>
</tr>
<tr>
<td>Bot 320</td>
</tr>
<tr>
<td>CropS Elective</td>
</tr>
<tr>
<td>SoilS 301</td>
</tr>
<tr>
<td>Elective</td>
</tr>
</tbody>
</table>

#### SCIENCE/BIOENGINEERING DEGREE PROGRAM (126 HOURS) ✅FYDA

This program prepares students for advanced studies as scientists in such areas as crop physiology, plant breeding, biotechnology and environmental quality. Students may qualify for research or teaching careers with universities, colleges, governmental agencies, or industry.

#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CropS 411 [M]</td>
<td>3</td>
</tr>
<tr>
<td>GenCB 325, 405, 420, or 450</td>
<td>2 or 3</td>
</tr>
<tr>
<td>Lab Elective</td>
<td>1-4</td>
</tr>
<tr>
<td>PI P 429</td>
<td>3</td>
</tr>
<tr>
<td>Stat 412</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bot 320, 410, or Biol 372</td>
</tr>
<tr>
<td>CropS 305</td>
</tr>
<tr>
<td>GenCB 301</td>
</tr>
<tr>
<td>Elective</td>
</tr>
</tbody>
</table>

Complete Writing Portfolio

#### Minor in Crop Science

A minor in crop science may be obtained by students from other departments. See crop science advisor.

#### Transfer Students

Students planning to transfer to Washington State University should take courses which meet general university and crop science core requirements.

#### Preparation for Graduate Study

Preparation for graduate study requires the selection of courses that will benefit later work toward a Master of Science or a Doctor of Philosophy degree. Normally, preparation for an advanced degree in crop science includes course work outlined under one of the

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**SCIENCE/BIOENGINEERING DEGREE PROGRAM (126 HOURS) ✅FYDA**

This program prepares students for advanced studies as scientists in such areas as crop physiology, plant breeding, biotechnology and environmental quality. Students may qualify for research or teaching careers with universities, colleges, governmental agencies, or industry.

### TURF MANAGEMENT DEGREE PROGRAM (124 HOURS) ✅FYDA

For students who wish to specialize in golf course supervision, grounds maintenance, and similar recreation positions involving turfgrass management techniques and personnel relations.

#### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>One from: AgTM 315, CropS 410, Hort 232, or 331</td>
<td>3</td>
</tr>
<tr>
<td>Hort 231 or LA 264</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 301</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
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</tbody>
</table>

Complete Writing Portfolio

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AgTM 346</td>
</tr>
<tr>
<td>Bot 320</td>
</tr>
<tr>
<td>CropS 301</td>
</tr>
<tr>
<td>SoilS 441</td>
</tr>
<tr>
<td>SoilS 442</td>
</tr>
</tbody>
</table>

#### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AgTM 210 or 312</td>
<td>2</td>
</tr>
<tr>
<td>Crop S 305</td>
<td>3</td>
</tr>
<tr>
<td>CropS 498 or 499</td>
<td>1-3</td>
</tr>
<tr>
<td>PI P 429</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acctg or Mgt Elective</td>
</tr>
<tr>
<td>CropS 411 [M]</td>
</tr>
<tr>
<td>CropS 412</td>
</tr>
<tr>
<td>CropS 445 [M]</td>
</tr>
<tr>
<td>Elective</td>
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</table>

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC/BP 364</td>
</tr>
<tr>
<td>CropS 412</td>
</tr>
<tr>
<td>CropS 445 [M]</td>
</tr>
<tr>
<td>Lab Elective</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
</tr>
</tbody>
</table>

#### Minor in Crop Science

A minor in crop science may be obtained by students from other departments. See crop science advisor.

#### Transfer Students

Students planning to transfer to Washington State University should take courses which meet general university and crop science core requirements.

#### Preparation for Graduate Study

Preparation for graduate study requires the selection of courses that will benefit later work toward a Master of Science or a Doctor of Philosophy degree. Normally, preparation for an advanced degree in crop science includes course work outlined under one of the
above options with a strong emphasis in plant sciences, chemistry, computer science, mathematics, and statistics.

**Soil Science Degree Program**

**Requirements**

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

A 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 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**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 110 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 104 [B] or Bot 120 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
<td>4</td>
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</tbody>
</table>

1Based on the mathematics placement exam scores, students may not need to enroll in Math 107.

**ENVIROMENTAL SOIL SCIENCE DEGREE PROGRAM (122 HOURS) ✔FYDA**

This option emphasizes the basic principles of soils as they relate to the quality of the environment.

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 201 [S] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>SoilS 201 [B] (GER)</td>
<td>3</td>
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<tr>
<td>Elective</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SoilS 201 or Crop S 405</td>
<td>3</td>
</tr>
<tr>
<td>Geol 102 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Electives</td>
<td>8</td>
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**Junior Year**

<table>
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<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag Ec 210</td>
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<tr>
<td>Ag Ec 340</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>SoilS 201 [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</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 340</td>
<td>3</td>
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<tr>
<td>SoilS 421</td>
<td>3</td>
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<tr>
<td>SoilS 441</td>
<td>3</td>
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<tr>
<td>SoilS 442</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>CropS 305 or Entom 305 or PJ P 429</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 413</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 431</td>
<td>3</td>
</tr>
<tr>
<td>SoilS 451 [M]</td>
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</tr>
<tr>
<td>SoilS 374 or 474</td>
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<table>
<thead>
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<td>SoilS 412</td>
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<td>SoilS 414</td>
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<td>Tier III Capstone (GER)</td>
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**SUSTAINABLE AGRICULTURE DEGREE PROGRAM (125 HOURS) ✔FYDA**

This option integrates concepts of biodiversity, cropping systems, farm management, soil quality, and agroecology.
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. Field trips required. Cooperative course taught by WSU, open to UI students (Pisc 301).
201 Growth and Development of World Crop Plants 4 (2-6) Prereg CropS 101 or c/l/. Ontogeny of temperate and tropical crop plants; basics of crop evolution, distribution, anatomy, morphology, and physiology.
3 Turfgrass Culture 3 (2-3) Prereg one semester of Biol, 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).
204 Forage Crops 3 (2-3) Prereg Biol 104 or Bot 120. Adaptation, production, and utilization of forage crops. Field trip required.
3 Cropping Systems 3 Prereg Biol 104 or Bot 120; CropS 201. Management principles for sustainability of rained and irrigated agronomic cropping systems. Field trips required.
3 Principles of Weed Science 3 (2-3) Prereg Biol 104, Bot 120, CropS 101, 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 Prereg CropS 301. Specific management practices for golf courses in the Pacific Northwest.
360 [I] World Agricultural Systems 3 Prereg two semesters of physical or biological sciences. Study of agro-environmental characteristics of world agriculture; historical and contemporary features of world food production.
4 Advanced Cropping Systems 3 Prereg CropS 201; PIP 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. Cooperative course taught by WSU, open to UI students (Pisc 412).
410 Seed Science and Technology 3 (2-3) Prereg Biol 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 (Pisc 411).
412 Seminar 1 May be repeated for credit. Current literature and reports on research or special topics.

Soil Science

Soils
201 [B] Soil: A Living System 3 Prereg Chem 102. Biological, chemical, and physical properties of soils; fundamentals of soil-water-plant relations, soil fertility, and soil genesis.
301 [M] Land Use and Soil Management 3 Prereg SoilS 201. Soil and water conservation and management; land classification and reclamation; soils and environmental quality; sustainable agroecosystems.
305 Sustainable Agriculture 3 Prereg 2 semesters college-level physical or biological science or by permission. Environmental issues in sustainable agriculture and food production; pesticides, fertilizers, organic wastes, biotechnology, quality of life, risk-benefit assessment. Cooperative course taught jointly by WSU and UI (SoilS 345).
374 Remote Sensing and Airphoto Interpretation 3 (2-3) Physical basis of remote sensing, fundamentals of aerial photography and image analysis applied to agriculture, forestry, wildland management problems.
412 Seminar 1 Same as CropS 412.
413 Introduction to Soil Physics 3 (2-3) Prereg 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 Prereg 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) Prereg 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 515.

413 Biology of Weeds 3 Prereg 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 (Pisc 410), open to WSU students.
445 [M] Plant Breeding 3 Rec Gen CB 301. Genetic principles applied to the improvement of plants. 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 1-3 May be repeated for credit; cumulative maximum 9 hours. Planned and supervised professional work experience. S, F grading.
499 Special Problems 1-4 May be repeated for credit. S, F grading.
503 Advance Cropping Systems 3 Graduate-level counterpart of CropS 403; additional requirements. Credit not granted for both CropS 403 and 503. Cooperative course taught by WSU, open to UI students (Pisc 512).
504 Plant Transmission Genetics 3 Prereg Gen CB 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 507).
505 Molecular Approaches for Improving Crop Quality and Adaptation 3 Prereg 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 515).
508 Advanced Crop Physiology 3 3 Prereg 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).
510 Seminar 1 May be repeated for credit. Literature review; preparation and presentation of reports in crop physiology.
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) Prereg Gen CB 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) Prereg 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.
539 Herbicide Fate and Mode of Action 4 Prereg 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).
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.


462 Systems in Integrated Crop Management 3 (2-3) Same as Entom 462. Credit not granted for both SoilS 462 and 562.

474 Airphoto 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/f. 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 Graduate-level counterpart of SoilS 421; additional requirements. Credit not granted for both SoilS 421 and 521.

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/SP 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 Prereq BC/SP 364; Micro 201; SoilS 421. Enzyme activity; microbial activity/biomass; rhizosphere; carbon, nitrogen phosphorus, sulfur, and micronutrient cycles. Cooperative course taught by UI (SoilS 537), open to WSU students.

541 Soil-Plant-Microbial Interactions 3 Prereq SoilS 421, 431, or 441. Soil-plant-microbial relationships to plant nutrition, plant health, and environmental cleanup; rhizosphere chemistry and microbiological 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


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 economic majors is sufficiently flexible to accommodate students with a variety of career interests, including business, law, government, education, public administration, and general economics. The undergraduate economics major is also excellent preparation for graduate study in many fields, such as business, law, and economics. Courses of study in economics allow sufficient time for electing courses outside the department while meeting all departmental requirements and General Education Requirements.

The department offers courses of study leading to the degrees of Bachelor of Arts in Economics, Bachelor of Arts in Business, Master of Arts in Economics, and Doctor of Philosophy.

Certification Requirements

Students must have completed at least 30 semester credits, including at least 6 credits of economics core courses (i.e., Econ 101, 102, 198, 301, and 320) and have a cumulative g.p.a. of 2.5 or higher are eligible to apply for certification. All students are eligible to petition for the consideration of alternative criteria. Transfer student expectations and other unique cases will be dealt with individually. Additional information is available in Todd 442.

Degree Program Requirements

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

During the freshman and sophomore years the economics major should normally begin economics courses and complete a major portion of the General Education Requirements. In the junior and senior year the economics major may choose from a variety of courses to prepare for employment or postgraduate education. Majors must complete courses in the following area:

Core: Econ 101 (or 198), 102 (or 198); 301 or 302; 311, 401, one Econ 400 elective, 490, three 300-400-level Econ electives.

Fields: 12 hours of 300-400-level Econ and related courses, at least 6 hours of which must be at the 400 level.

Mathematics: One of: Math 140, 171, 202, or 206.

The chair of the department and/or the dean of the college must approve in writing any portion of the 300-400-level credit which is to be satisfied by transfer, correspondence, independent study, or other credit which may not carry WSU grade points. Additional transfer, correspondence, and independent study credit (within university limits on these credits) may count toward the 120 hours required for the degree and/or satisfy requirements other than major courses. Only general elective courses that are not GERs, not core/major requirements, and not a course offered by the CBE may be taken pass, fail. A 2.0 cumulative economics g.p.a. is required for graduation.

An honors senior project is required for Honors students.
Options in Economics

Students majoring in economics and satisfying the core, field, and math requirements may elect, in consultation with their major advisor, to either self-design an additional 12-hour area of specialization or to choose from one of the 12-hour options below.

**Economics of Financial Markets.** Econ 320, 420, Fin 325, one of Econ 411, 499; Fin 421, 422, 425, 427.

**Economics of Public Policy.** Econ 340, 499; two of Econ 320, 345, 350, 360, 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/RE 450, I Bus 380, 481, 482.; Pol S 460.

**Labor Economics.** Econ 350, 450; two of Econ 312, 455, 499; Mgt 450, 456.

**Economics of Regulation, Industrial Organization, Law:** Two of Econ 340, 360, 460; two of B Law 410, Econ 499, Pol S 416, 420, 446, 450, Soc 342, 364, 424.

**Preparation for Graduate Study.** 12 hours of 300-400 level courses.

The FYDA schedule below allows students to complete any of the options within the Economics Department.

**General Program Requirements**

Students in the College of Business and Economics must demonstrate performance at a level expected of seniors in their major by presenting WSU graded course work to satisfy at least 75% of the 300-400 level courses required by the major program. The chair of the department and the dean of the college must approve in writing any portion of 300-400 level credits which is to be satisfied by transfer, correspondence, independent study, or other credit which does not carry WSU grade points. Additional transfer, correspondence, and independent study credit (within university limits on these credits) may count toward the 120 hours required for the degree and/or satisfy requirements other than major courses.

**ECONOMICS DEGREE PROGRAM (120 HOURS) ▶FYDA**

**Freshman Year**

**First Semester**

- Econ 101 [S] or Econ 102 [S] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Intercultural [J, G, K] (GER) 3
- Tier I Science [Q] (GER) 3

**Second Semester**

- Arts & Humanities [H,G] (GER) 3
- Biological Sciences [B] (GER) 3
- Econ 101 [S] or 102 [S] (GER) 3
- GenEd 110 [A] or 111 [A] (GER) 3
- Math 171 [N] (GER) 3

**Sophomore Year**

**First Semester**

- 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**

- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Econ 311 or 411 3
- Econ 401 3
- Electives 6

Student 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.

**Junior Year**

**First Semester**

- 300-400 level Econ Core Electives 3
- Econ Option Elective 3
- 300-400 level Electives 6
- Complete Writing Portfolio

**Second Semester**

- 300-400 level Econ Core Elective 3
- Econ Option Elective 3
- Electives 9

**Senior Year**

**First Semester**

- 400-level Econ Core Elective 3
- Econ Option Elective 3
- Electives 9

**Second Semester**

- Econ Option Elective 3
- Econ 490 [M] 3
- Tier III Capstone (GER) 3
- Electives 5

Math 171 is recommended. Alternative alternatives are Math 140, 202, 206.

At least one of the Econ core or option courses must be a [M] course.

**Minor in Economics**

A minor in economics is often a desirable complement to majors such as business administration, engineering, education, agricultural economics, forestry, political science, and history. To be eligible to certify in an economics minor, students must have a cumulative 2.5 g.p.a. A minor in economics requires 18 hours of economics, nine of which must be at the 300-400 level with an overall 2.0 g.p.a. in the required courses. Courses for the minor may not be taken pass, fail. Consult the department for an acceptable program of study.

**Program in Sustainable Development**

*Interim Director, M. Nziramasanga*

The intent of the Program in Sustainable Development is to address how economic and social systems interact with major resource and environmental issues, both internationally and domestically. This is an interdisciplinary program, in consultation with the departments of Architecture, Economics, Environmental Science and Regional Planning, International Business, Natural Resource Sciences, and Sociology. The program is intended for particular areas can be developed with the departmental advisors.

**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 science, 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:** Acctg 230; B Law 210; Pol S 300; and, depending on legal interests, elective Economics courses from the following: Econ 340, 364, 450, 460, 470, 481; B Law 410, 411 suggested.

**Business School:** Acctg 230; MIS 250. Additional courses in business are not required for admission to most graduate schools of business. It might be useful, however, to take a second course in accounting, Acctg 231, and to take introductory courses in the major areas of business: B Law 210, Fin 325, Mgt 301, Dec S 340, Mktg 360.

**Economics:** Math 171 and 220 are recommended to satisfy the major’s math requirements. Calculus through Math 273 and Econ 408 may also be useful.

**Public Administration:** Acctg 230 and Pol S 340; MIS 250 and Pol S 443, 446 recommended. Elective: Econ 340.

**Transfer Students**

Students planning to transfer into economics by the end of their sophomore year should have completed the introductory economics courses if they plan to complete the required work for a degree in two additional years.

**Description of Courses**

**Economics**

**Econ**

101 [S] Fundamentals of Microeconomics 3

Theory and policy of human responses to scarcity; how this affects business competition, international trade, industrial organization, investment, income distribution.

102 [S] Fundamentals of Macroeconomics 3

Theory and policy related to unemployment, inflation, foreign trade, government spending, taxation, and banking.

138 Freshman Special Topics 1 May be repeated for credit; cumulative maximum 2 hours. Introduces new students to individual faculty research interests and helps students link personal interests to academic majors. S, F grading.
198 [S] Economics Honors 3 Introduction to economic theory and policy issues. Open only to students in the Honors College.
301 Theory of the Firm and Market Policy 3 Prereq Econ 101. Price determination and market behavior under different market structures and the problems posed for public policy; not calculus-based. Credit not granted for both Econ 301 and 302.
302 Intermediate Microeconomic Theory 3 Prereq Econ 101; Math 171 or 202. Calculus-based intermediate microeconomic theory for majors in economics and agricultural economics. Credit not granted for both Econ 301 and 302.
311 Introductory Econometrics 3 Prereq Econ 101, 102. Methods of empirical analysis in the context of economic analysis and forecasting problems. Credit not granted for both Econ 311 and 411.
320 Money and Banking 3 Prereq Econ 102. Analysis of banking institutions and monetary policy in the US, with comparison to abroad.
330 Economics of Sports in America 3 Prereq Econ 101. Economic aspects of American sports; fan demand; advertising; team output decisions; league/conference organization; government and sports.
340 [M] Public Finance and Taxation 3 Prereq Econ 101, 102. Theory and practice of the public sector; taxes, expenditures, and administration at local, state, and federal levels.
345 Public Policy Analysis 3 Prereq Econ 101, 102. Economic impact of public policy on business; health care, environment, airline deregulation, trade, and growth.
364 Transport Economics 3 Prereq Econ 301. Characteristics of transportation systems; market structure; public policy of transport logistics.
375 Aspects of Sustainable Development 3 Prereq junior standing. Ecological, economical, and sociological aspects of sustainable development.
397 Topics - Study Abroad 3 Special topics in economics taught in NCSA study abroad programs.
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 Anti-Trust Policy 3 Prereq Econ 101. Extent, causes, and effects of economic power held by US corporations; antitrust laws and other legislation and regulating business practices.
470 International Trade and Finance 3 Prereq Econ 102. Analysis and description of international trade flows; commercial policy; multinational firms, foreign exchange markets; open economy macroeconomics; international monetary systems.
471 Economics of Regional Integration 3 Prereq Econ 102. Economics and policies of regional integration and economic reforms in Western Europe, North America, East Asia, Eastern Europe and Russia.
472 Economic Development and Underdevelopment 3 Prereq Econ 102; Rec Econ 301. Development theories, policies, and performance of Third World economies; population, land reform, foreign trade, aid, investment, debt, dependency.
475 Regional/Urban Economics 3 Prereq Econ 101, 102. Location of economic activity, transportation problems, resource and product distribution methods, urban structure and growth, and related policy issues. Cooperative course taught by UI (Econ 430), open to WSU students.
481 Economics of Environmental Issues 3 Prereq Econ 101; Rec Econ 301. Environmental interactions; efficient allocation of environmental resources; market failure and environmental degradation; economic analysis of environmental policies.
490 [M] Economics Capstone 3 Prereq senior in Econ, completion of Econ core. Integration of economic theory and field courses; assessment.
497 Economics Internship V 2-12 May be repeated for credit; cumulative maximum 12 hours. Professional off-campus internships arranged or coordinated by departmental faculty; not going 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. Cooperative course taught by WSU, open to UI students (Econ 510).
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 policy.
570 International Factor Movement 3 Prereq Econ 470, 501. The basic nonmonetary theory; new theories of international trade; tariffs and commercial policy; effects of economic integration; international movements factor.
571 Monetary Aspects of International Economics 3 Prereq Econ 470, 500. Balance-of-payments; adjustment to payments imbalance; the foreign exchange market; open economy macroeconomic models and macroeconomic policy coordination; international monetary institutions.
572 Theoretical and Institutional Aspects of Economic Development 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Econ 500. Selected topics in the political economy of developing nations.
590 Special Topics in Economics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing.
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 do graduate study must make application to the Graduate School and submit the following materials to the Department of Educational Leadership and Counseling Psychology Associate Chair: letter of application describing professional objectives; completed departmental application form; vita; Graduate Record Examination scores; official college transcripts; and three letters of recommendation from individuals qualified to comment on the applicant’s academic and professional abilities.

The Doctor of Philosophy in Education, with a specialization in counseling psychology, is designed for individuals who intend to become licensed counseling psychologists. The doctoral specialization in counseling psychology is designed for full-time study and is accredited by the American Psychological Association. For persons interested in the PhD specialization in counseling psychology, and master’s degree programs in counseling, the department considers applications for admission only once a year. These applicants must submit their materials to the associate chair of the department by February 1 for admission the following summer or fall semester.

The Doctor of Philosophy in Education and the Doctor of Education, with a specialization in educational psychology, is designed for individuals who intend to enter the professional field of: (a) college or university teaching in the areas of general educational psychology and/or educational measurement, evaluation and research design; (b) public school service in the role of a testing program director or coordinator of curriculum and program evaluation; and/or (c) research and/or administration in research units such as the Northwest Regional Lab or an office of institutional studies at a college or university. These applicants must submit their materials to the associate chair of the department by February 1 for admission the following summer or fall semester.

The Philosophy of Education and the Doctor of Education, with specialization in educational psychology, is designed for individuals who intend to enter the professional field of: (a) college or university teaching in the areas of general educational psychology and/or educational measurement, evaluation and research design; (b) public school service in the role of a testing program director or coordinator of curriculum and program evaluation; and/or (c) research and/or administration in research units such as the Northwest Regional Lab or an office of institutional studies at a college or university.

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 certifies for superintendents, principals, and program administrators is offered in the Department of Educational Leadership and Counseling Psychology. Candidates for administration certification must comply with the following requirements:

1. All candidates for advanced degree or certificate must formally be admitted to the university as specified in the current Graduate Study Bulletin. Admission will be considered after transcripts have been received from the institution which granted the baccalaureate degree as well as from institutions which have granted postgraduate credit.
2. All candidates not holding a master’s degree in an appropriate area of specialization must be admitted to the university and the master’s degree program in the respective department.
3. All candidates for certification must submit the following: application to the Graduate School; application for certification; three reference forms.
4. Admission to the certification program is granted only after the WSU Professional Education Advisory Board (PEAB) reviews the completed application process.

ESA Counselor Certification

The Department of Educational Leadership and Counseling Psychology at Washington State University is involved with southeastern Washington school districts in a Professional Education Advising Board in Counselor Education. The EdM specialization in School Counseling constitutes a consortium-directed program approved by the State Board of Education. Completion of this program qualifies a person for initial certification as a school counselor in the state of Washington. Post-master’s degree course work is also available leading to continued counselor certification.

Bachelor of Arts in Sport Management

The Department of Educational Leadership and Counseling Psychology offers a major in sport management which leads to a Bachelor of Arts in Sport Management. The sport management major provides professional preparation for those students wishing to pursue a management career with sport organizations or in sport businesses. Students must complete a core program in sport management and must select an area of specialization from business, communications, or leadership studies. Additional information on the areas of specialization can be obtained from the department.

Practical application of theory and knowledge is obtained through enrollment in practicum hours during the junior and senior years and through the completion of a 10-12 credit internship at the end of the required coursework. The internship serves as the bridge between the student’s college career and opportunities for employment as a sport manager.
General Education Requirements must be completed by all students enrolled in the university. Sport management majors are required to complete 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; choose 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, 464 or 477, and 4 credits from SpMgt 365, 394, 496, 497.

Degree Program Requirements

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

SPORT MANAGEMENT DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester Hours
Art & Humanities [H,G] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Social Sciences [S,K] (GER) 3
Tier I Science [Q] (GER) 3

Second Semester Hours
Biological Science [B] (GER) 4
GenEd 111 [A] (GER) 3
Intercultural Studies [J,G,K] (GER) 3
Mathematics Proficiency [N] (GER) 3 or 4
SpMgt 276 3

Sophomore Year

First Semester Hours
Area of Specialization 3
ComSt 102 [C] (GER) 3
Physical Science [P] (GER) 4
SpMgt 284 2
SpMgt 290 or additional GER [H,G,S,K] 3

Second Semester Hours
Area of Specialization 6
PEACT 1
SpMgt 290 or additional GER [H,G,S,K] 3
SpMgt 394 2
Elective 3

Junior Year

First Semester Hours
Area of Specialization 6
H Ed 363 3
SpMgt 365 or 367 3
SpMgt 394 1
Elective 3

Complete Writing Portfolio

Second Semester Hours
Area of Specialization 6
Engl 402 [W] (GER) 3
PEACT 1
SpMgt 365 or 367 3
SpMgt 394 1
Elective 3

Senior Year

First Semester Hours
SpMgt 464 3
SpMgt 468 3
SpMgt 477 3
SpMgt 488 2
Tier III Capstone (GER) 3
Elective 2 or 3

Second Semester Hours
SpMgt 491 10-12

Description of Courses

Counseling Psychology

CoPsy

474 Introduction to Counseling Techniques 2 Prereq 9 hours Edu or Psych; junior standing. Practical directive and nondirective counseling techniques for school counselors and classroom teachers. Not open to PhD students in CoPsy.

478 Career Services and Programs for Persons with Disabilities 3 Career development concepts, services, and programs for persons with disabilities with emphasis on internship collaboration with public schools. Credit not granted for both CoPsy 478 and 578.

490 Instructional Practicum V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 8 hours. S, F grading.

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

501 Historical and Philosophical Foundations of Counseling Psychology 3 Prereq admission to Counseling Psychology PhD program. History of counseling psychology; philosophical and psychological systems; current identity of counseling psychology as an academic discipline and a profession.

511 Theories, Research, and Techniques in Counseling Psychology 3 or 4 Philosophical assumptions, theory of personality, counseling process, techniques and relevant research in the major theories of counseling and personality.

512 Theories, Research, and Techniques in Counseling Psychology II 3 or 4 Prereq CoPsy 511. Advanced study of process techniques and outcome research in the field of counseling and psychotherapy; nonspecific process skills are presented and integrated into specific, empirically validated interviews.

513 Career Development 3 or 4 Theories, concepts, methods and findings in career development; vocational assessment and prediction, career counseling intervention outcomes.

515 Ethics and Professional Problems in Counseling Psychology 4 Professional problems; ethical, legal, and training issues, practices, and new issues.

518 Theoretical Foundations of Group Counseling 3 Prereq CoPsy 512 or c/. History, philosophy and theoretical foundations; the group counselor, members, and issues in group counseling.

522 Introduction to Family Counseling 3 Counseling in the family context; intervention strategies, theoretical models, and professional ethics and issues.

523 Topics in Counseling Psychology V 1-4 May be repeated for credit; cumulative maximum 8 hours. Recent research, developments, issues, and/or applications in selected areas of counseling psychology.

525 Counseling Diverse Populations 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 1 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 written 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/l; 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/l; 527 or c/l; or by interview only. Supervised experience in the application of guidance and counseling theory and techniques in a school setting. S, F grading.

537 Professional Development in Counseling Psychology 3 NBCC requirements; growth and development, social and cultural foundations, the helping relationship, group dynamics, career, appraisal and research.

541 Clinical and Experimental Hypnosis Seminar 4 Prereq PhD student in counseling, educational, experimental, or clinical psychology. Clinical and experimental hypnosis, emphasizing applied research and clinical methods.

542 Cross-cultural Research in Counseling and Assessment 4 Cross-cultural research methods, concepts, and findings in counseling and assessment.


552 Doctoral Practicum in Counseling Psychology II 4 (2-6) Prereq CoPsy 551, by interview only. Supervised experiences in the application of counseling psychology theory and techniques. S, F grading.

553 Doctoral Practicum in Counseling Psychology III V 2 (1-3) to 4 (2-6) May be repeated for credit; cumulative maximum 12 hours. Prereq CoPsy 552, by interview only. Supervised experiences in the application of counseling psychology theory and techniques. S, F grading.

557 Chicano/Latino Psychology 3 Graduate-level counterpart of CAC 457; additional requirements. Credit not granted for both CAC 457 and CoPsy 557.

561 Continuing Counseling ESA Certification V 3-6 May be repeated for credit; cumulative maximum 6 hours. Prereq Initial Counselor Certification; equivalent of 180 full days of school counselor experience. Peer review requirements for continuing level ESA C 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.

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

Educational Administration

Ed Ad 389 Undergraduate Leadership Development 3 Basic leadership through skills, styles and conflict management, critical thinking, problem solving, organizational behavior, and leadership issues.

440 Principles of Service and Leadership 3 Prereq Ed Ad 389, senior standing. Individual and group opportunities to apply leadership skills, theory, and principles to a proposed service learning project.

490 Special Topics V 1-4 May be repeated for credit; cumulative maximum 8 hours. By permission only.

497 Peer Leadership V 1-4 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/l/. 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.

502 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 3 The interpretation of social context issues including historical, legal and cultural factors as these influence policies and practice in education.

507 Social Foundations of Education 3 Educational adaptations to the economic and social trends and forces.

510 Improvement of Instruction 3 Rec teaching experience. Analysis and evaluation of instructional models with emphasis on information processing; implications for changing teaching style.

511 Models of Teaching 2 Theoretical models and strategies of teaching in classrooms; relationships between specific models and curriculum priorities.

514 Basic Principles of Curriculum Design 2 or 3 Rec teaching experience. The application of theoretical concepts and approaches in the planning and design of curricula.

515 Curriculum and Instruction 3 Rec teaching experience. Research and practice; innovation and change in curricular organization emphasizing implementation.

516 Instructional and Curricular Leadership 2 or 3 Rec teaching experience. Theory, research, and practice of providing instructional and curricular leadership in schools and other educational settings.

517 In-Service Programs 3 Research, theory, and practice in staff development in K-12, higher education, and non-school settings; for administrators, teachers, and other staff.

518 Educational Technology 3 Rec T & L 445 or 446. Research and theory of communication related to instructional resources and current educational technology; problems of planning and administering programs.

520 Seminar in Curriculum and Instruction 2 or 3 Rec teaching experience. Contemporary issues, analyses and developments of educational programs.

521 Topics in Education V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, developments, issues, and/or applications in selected areas of education.

522 Topics in Education V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, developments, issues, and/or applications in selected areas of education.

530 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Topical issues in education responding to shifting demands and skills needed by parents, teachers, school administrators and community leaders.

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536 Introduction to Qualitative Research in Education 3 Introduction to the theory and methods of qualitative research; field relations, data collections, data analysis, hypothesis development, and theory generation.

537 Advanced Qualitative Research in Education 3 Prereq Ed Ad 536. Advanced theory and methods of qualitative research; theoretical foundations, data collection and analysis, and reporting.

538 Special Topics in Qualitative Research in Education 3 Rec 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, organization and teaching in education.

560 Student Personnel Services in Higher Education 2 or 3 Philosophy, structure, functions, and organization of student personnel services.
561 Students Development Theory, Research, and Application 3 Student development theory, related research and the application of theory to practice in student affairs work.

562 Professional Problems in Student Affairs 3 Prereq Ed Ad 560, 561. The organization, programs and professional issues related to selected student affairs programs and units.

563 Models of College Student Social Identity 3 Prereq Ed Ad 561. Critique and understand social identity models as they relate to teaching, advising, and working with diverse student populations.

564 Seminar in Student Affairs 3 Prereq graduate standing. Contemporary issues, analyses, and development of student affairs programs and institutions.

565 Master’s Practicum in Student Affairs 3 (0-9) Prereq graduate student with 15 hours of completed course work in education. Selected supervised experiences in professional student affairs settings which provide for the investigation/application of theory/methods gained through formal course work.

567 Organizational Leadership of Multicultural Change 3 Prereq graduate standing. Reflection on experience and examination of the theory of practice or organizational leadership in the context of diversity.

568 Finance and Budgeting in Higher Education 3 Prereq undergraduate macro and microeconomics of by permission of instructor; graduate standing. Exposes students to the fundamentals of higher education budgeting and finance.

570 Community and Technical Colleges 3 For teachers and administrators. Development and function of community and technical colleges.

571 Undergraduate and Community/Technical College Teaching 3 Rec Ed Ad 570 or 572. Concepts, principles, issues, and procedures in undergraduate curriculum development; goal-oriented educational strategies and delivery systems.

572 The American College and University 3 History, philosophy, organizations, and issues of colleges and universities as social institutions.

573 Issues in Higher Education 3 Selected contemporary issues in higher education.

574 Finance and Budget in Higher Education V 1-3 May be repeated for credit; cumulative maximum 6 hours. Contemporary issues, analyses and developments of higher education programs and institutions.

575 Administrative Concepts for Physical Education, Sport and Athletics 3 Administration focusing on democratic human behavior in organizations with specific attention to the leader, the setting, and the process.

576 Promotions and Management of Sport Programs 3 Public relations, promotions, assessment and fiscal management of sport programs.

577 Sport Law 3 Graduate-level counterpart of SpMgt 477; additional requirements. Credit not allowed for both SpMgt 477 and Ed Ad 577.

578 Higher Education Law and Ethics 3 Legal and ethical aspects of higher education with special reference to administrators, faculty, and students in higher education institutions.

579 Administration of Higher Education 3 Organization, administration and leadership of universities, colleges, and community colleges.

580 School and Administration 3 Rec teaching experience. Readings and discussions on the theories and practices of school organization and administration. Cooperative course taught jointly by WSU and UI (EdAd 509).

581 Politics in Education 3 Prereq graduate standing. Examining the intrapersonal, organizational politics and political dilemma, particularly as they pertain to marginalized groups.

582 Policy Formation and Analysis in Education 3 Political and organizational policy formation processes in educational organizations; policy analysis in education.

583 Community and Communications 3 Social, political, and economic relationships between education and the community; methods of public polling and campaign strategy techniques.

584 Human Resource Management 3 Human relations in education; problems involved and practical solutions considered.

585 Financial Management in Education 3 Economics and financing of education; financial planning, budget development, investment analysis, bonding, cost effectiveness; current trends in educational finance. Cooperative course taught jointly by WSU and UI (EdAd 535).

586 Management of Facility Planning 3 Principles and procedures in the development of educational specifications, conducting needs assessment, forecasting; selecting an architect.

587 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.

599 Superintendent Institute 1 May be repeated for credit; cumulative maximum 4 hours. By interview only. Current concepts and practices in the superintendentality; policy, planning, and implementation techniques. S, F grading.

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

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

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.

801 Classroom Assessment, Elementary 2 Prereq certified education major; T & L 301; 315/316. Principles and practice of high-quality classroom assessment in the elementary schools.

902 Classroom Assessment, Secondary 2 Prereq certified education major; T & L 303. Principles and practice of high-quality classroom assessment in secondary schools.

903 Instructional Practicum V 1-3 to 3 (0-9) May be repeated for credit; cumulative maximum 8 hours. S, F grading.

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

502 Theoretical Foundations of Learning and Instruction 3 Historical and contemporary theories of learning and instruction: application of theory in counseling and teaching settings.

503 Advanced Educational Psychology 2 Theories of learning and development as applied to education.

504 Classroom-focused Research Methods 2 Methods, design, implementation, and application of results in classroom context.

505 Research Methods I 3 Research methods; literature review; design, implementation, and interpretation of results.

506 Educational Statistics 4 Descriptive statistics: central tendency, variability, correlations, and regressions; introduction of tests of significance; reporting and interpreting educational research data. Cooperative course taught jointly by WSU and UI (EdAd 507).

509 Educational Measurements: Test Development and Assessment 2 or 3 Rec EdPsy 508. Theory and use of standardized educational measurement instruments; intelligence, aptitude, and achievement tests; measurement of outcomes.

510 Assessment of Learning 3 Prereq graduate standing. Assessment of student learning, school and district evaluation; particularly appropriate for school administrators.

519 Practicum in College Instruction 1 (0-3) May be repeated for credit; cumulative maximum 4 hours. By interview only. Supervised experience in college teaching. S, F grading.

521 Topics in Educational Psychology V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, developments, issues, and/or applications in selected areas of educational psychology.


568 Research Methods II 3 Prereq EdPsy 505, 565. Integration and application of research skills in writing proposals, dissertations, papers for publication; interpreting, critiquing, and synthesizing research studies.

569 Seminar in Quantitative Techniques in Education 2 or 3 May be repeated for credit; cumulative maximum 6 hours. Prereq EdPsy 565. Application of parametric and nonparametric statistics, data processing using computer packages in educational research.

570 Introduction to Program Evaluation 3 Prereq EdPsy 505. Introduction to strategies and techniques for evaluation of educational and social programs.

571 Advanced Program Evaluation 3 Prereq EdPsy 570. Advanced methods and techniques of program evaluation.

597 Educational Psychology Internship V 2-4 May be repeated for credit; cumulative maximum 8 hours. Supervised internship experience in educational psychology, measurement and evaluation. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.
School of Electrical Engineering and Computer Science


The School of Electrical Engineering and Computer Science offers courses of study leading to the degrees of Bachelor of Science in Electrical Engineering (BSEE) or Computer Science (BSCS), Bachelor of Arts in Computer Science (BACS), Bachelor of Science in Computer Engineering (BSCPeE), Master of Science in Electrical Engineering (MSEE) or Computer Science (MSCS), and Doctor of Philosophy. The program leading to the BSEE is accredited by the Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology, while the program leading to the BSCS is accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board.

Electrical Engineering

The curriculum is geared to provide the fundamental knowledge in the areas of general interest to all electrical engineers. The course of study is therefore oriented toward the basic theory and concepts which prepare students for entry into any of the many activities open to members of the profession including research, design, development, operations, management, teaching, sales, and consulting. Laboratory experience is emphasized to provide familiarity with electrical, electronic and computing equipment and with experimental techniques. Modern laboratories are available for electrical circuits, electronics, power systems, electromaterials, power systems. The course-work is supplemented by several courses of study in electrical 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. The B.S. degree requires substantial basic and advanced computer science course work and is the traditional computer science degree. The B.A. degree is designed for multi-disciplinary students who wish to learn the basics of computer science and apply it to a different field. This degree requires a minor in another area, such as art, biochemistry, music, psychology, architecture, etc.

The program offers courses in a wide variety of topics including theory of computation, design and analysis of algorithms, software engineering, operating systems, computer networks, computer graphics, image processing, distributed systems, and database systems. The course-work is supplemented by several general-purpose computing labs dedicated to computer science students, and specialized labs for courses such as operating systems, software engineering, computer animation, and computer networking. The program offers a two-semester senior design project that typically involves industry cooperation, and provides students with valuable experience in applying their skills to solve real-world problems. An option area course sequence allows students to specialize in specific areas such as computer graphics and animation, computer systems software, software engineering, or computer engineering.

Computer Engineering

Computer engineering is a multidisciplinary program. It is a field which includes engineering science and design courses to provide a balanced view of digital hardware, software, application trade-offs, and basic modeling techniques used to represent the computing process. It draws on basic courses from both electrical engineering and computer science. Therefore, the first part of the curriculum is very similar to the other two degree programs. The curriculum has been carefully designed to allow the student to enter any of the three degree programs and to switch to another at a point before certification without serious consequences. Similarly, courses can be transferred from community colleges with minimal difficulty. Like all engineering fields, computer engineering utilizes basic courses in mathematics, science, and other engineering disciplines to build a knowledge foundation and to develop breadth.

Certification

Students may apply for certification into any of the three Bachelor of Science degree programs of study after completion of 30 semester hours. They must include Bio S 102 or Chem 105; Cpt S 150 or 251; Math 171, 172; Phys 201, 202. For the Bachelor of Arts degree program the 30 semester hours must include Math 201, 202, 216; Cpt S 150, 250. Math 171 and 172 may be substituted for Math 118

Department of Educational Leadership and Counseling Psychology

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.
327 [M] Sport in American Society 3 Prereq SpMgt 276 or c//. Examination of the role of sport in contemporary American society as well as the relationship between sport and other social institutions.
365 Nature of SpMgt 3 Prereq SpMgt 276 or c//. Examination of sport as a consumer product and as a medium by which to sell consumer products.
367 [M] Sport in American Society 3 Prereq SpMgt 276 or c//. Examination of the role of sport in contemporary American society as well as the relationship between sport and other social institutions.
369 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.
390 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.
418 Sport Marketing 3 Prereq SpMgt 365, 367. An examination of sport as a consumer product and as a medium by which to sell consumer products.
445 Sport Law V 1-3 May be repeated for credit; cumulative maximum 8 hours. By interview only. Supervised practicum. S, F grading.
450 Current Trends in Sport Management 2 Prereq senior standing. Current trends and issues; professional development, internship and employment procedures.
467 Theory and Application 3 Prereq SpMgt 367; senior standing. Investigation and application of the components of the sport management profession.
480 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.
497 Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Special topics in sport studies.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.
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) 2
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
M E 301 3
Technical Electives 3 8
Tier III Capstone [H,G,S,K] (GER) 3

Cpt S 150 can be substituted for Cpt S 251.

1 Cpt E technical electives must be chosen with advisor's approval.
2 Engl 402 are taken concurrently.
3 Cpt S 423 will satisfy the senior option requirement.

COMPUTER ENGINEERING DEGREE PROGRAM (128 HOURS) ✴FYDA

First Semester Hours
Chem 105 [P] (GER) 4
Cpt S 150 Prog Design 4
Engl 101 [W] (GER) 3
Math 171 [N] (GER) 4

Second Semester
Cpt S 250 4
Math 172 4
Math 216 3
Phys 201 [P] (GER) 4

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
Economics [S] (GER) 3
Math 315 3

Junior Year
First Semester
Cpt S 360 [M] 4
E E 311 3
E E 321 3
Engl 402 [W] (GER) 3

Second Semester
Biological Sciences [B] (GER) 3 or 4
E E 424 4
Engr Sci Elec II1 3
Intercultural Studies [I,G,K] (GER) 3
Stat 360 3

Senior Year
First Semester
Approved Cpt E Technical Electives 3 7
Cpt S 460 or 461 3
Design I 3
E E 485 2
Econ 101 [S] or 102 [S] (GER) 3

Approved Cpt E Technical Electives 3 7
Cpt S 460 or 461 3
Design II 3
Tier III Capstone [H,G,S,K] (GER) 3

1 To be selected with advisor’s approval.
2 Cpt E technical electives must be chosen with advisor’s approval.
3 E E 416 or Cpt S 423 will satisfy the senior option requirement.

BACHELOR OF SCIENCE, COMPUTER SCIENCE DEGREE PROGRAM (126 HOURS) ✴FYDA

The B.S. degree requires substantial basic and advanced computer science course work and is the traditional computer science degree.
School of Electrical Engineering and Computer Science

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
Cpt S 355 3
Cpt S 422 [M] 3
Cpt S Option Course 3
Engl 402 [W] or 403 [W] (GER) 3
Stat 360 3

Senior Year Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Cpt S 450 3
Cpt S 452 3
Cpt S Option Courses 6
E E 485 2

Second Semester Hours
Cpt S 401 3
Cpt S 423 3
Cpt S 460 3
Cpt S Option Course 3
Tier III Capstone [H,G,S,K] (GER) 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 466; 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.

BACHELOR OF ARTS, COMPUTER SCIENCE DEGREE PROGRAM (126 HOURS) *FYDA*

The B.A. degree is designed for multi-disciplinary students who wish to learn the basics of computer science and apply it to a different field. This degree requires a minor in another area, such as art, biochemistry, music, psychology, architecture, etc.

Freshman Year Hours
First Semester
Cpt S 120 2
Cpt S 150 3
GenEd 110 [A] (GER) 3
Engl 101 [W] (GER) 3
Math 201† 3
Second Semester
Arts & Humanities [H,G] (GER) 3
Cpt S 250 4
GenEd 111 [A] (GER) 3
Math 202 [N] (GER)† 3
Math 216 3

Sophomore Year Hours
First Semester
Biological Sciences [B] (GER)² 4
Cpt S 350 3
Math 212 4
Social Sciences [S,K] (GER)† 3
Second Semester
200-level Cpt S Elective¹ 2 or 3
E E 214 3
Intercultural [L,G,K] (GER) 3
Math Elective¹ 3
Physical Sciences [P] (GER) 4

Junior Year Hours
First Semester
Advanced Cpt S Elective¹ 6
E E 314 3
Engl 402 [W] (GER) 3
Minor Elective 3
Second Semester
Advanced Cpt S Elective¹ 6
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Biological [B] or Physical [P] Sciences (GER)² 4
Minor Elective 2

Senior Year Hours
First Semester
Advanced Cpt S Elective¹ 6
Minor Electives 6
Tier III Capstone (GER) 3
Second Semester
Advanced Cpt S Elective¹ 3
Cpt S 401 [S] (GER) 3
Minor Electives 9

† The sequence (Math 171, 172, 220, and 360) is an acceptable substitute for the sequence (Math 201, 202, 212, Math Elective). The math electives include Math 420, 416, and Stat 412.
‡ Science electives must include a year-long sequence (two semester including a laboratory in each semester) and one additional science course with a laboratory.

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.

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.

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.

Minors

Advanced Cpt S courses must be chosen to contain advanced work in at least three separate computer science areas, according to CSAC/CSAB guidelines. Eligible areas and courses include: Theory: Cpt S 317, 450, 453 (453 requires Math 220); Scientific Computing: Cpt S 330, 430 (these courses require Math 172); Programming Languages: Cpt S 355, 452; Hardware Systems: Cpt S 360, 460, 461, 465, E E 324, 424; Graphics and Multimedia: Cpt S 442, 443, 445, 446, Math 418 (Cpt S 442, 445, Math 418 require Math 220); Software Systems: Cpt S 425, 426, 427, 451, 455; Intelligent Systems: Cpt S 440, 434; Software Engineering: Cpt S 422, 423. Selected offerings of Cpt S 483 could fit in one or more of the categories above.

Transfer Students

Students planning to transfer from other institutions should carefully note the sequence of courses listed above. Transfers from community colleges should consult the booklet “Transfer Programs for Washington Community Colleges” or should write directly to the School of Electrical Engineering and Computer Science for specific information.

Description of courses

Electrical Engineering

E E 120 Innovation in Design 2 Same as M E 120.
214 Design of Logic Circuits 3 (2-3) Prereq Cpt S 150 or 251. Design and application of combinational logic circuits with exposure to modern methods and design tools; introduction to sequential logic circuits.
261 Electrical Circuits 1 3 Prereq Math 315 or c/l; Phys 202; or c/l in E E 262. Application of fundamental concepts of electrical science in linear circuit analysis; mathematical models of electric components and circuits.
262 Electrical Circuits Laboratory 1 (0-3) Prereq E E 261 or c/l. Electrical instruments; laboratory applications of electric laws; transient and steady-state responses of electrical circuits.
304 Introduction to Electrical Circuits 2 Prereq Math 172, Physics 202. Basic DC and AC 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.

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. State space analysis, Laplace transforms, network functions, frequency response, Fourier series, two-ports, energy and passivity.

324 Fundamentals of Digital Systems 4 (3-3) Prereq E E 261, 314. Design and analysis of synchronous sequential machines; module and bit-slice devices; alternative architectures; system-level design; asynchronous sequential machines.

331 Electromagnetic Fields and Waves 3 Prereq Math 315; Phys 202; major or minor in E E. Fundamentals of electric fields, magnetic fields, and electromagnetic waves.

341 Signals and Systems 3 Prereq E E 321. Discrete and continuous-time signals, LTI systems, convolution, sampling, Fourier transform, Z-transform, filtering, DFT, amplitude and frequency modulation.

351 Distributed Parameter Systems 3 Prereq E E 331. Transmission lines, plane waves, waveguides, antennas, fiber optics.

352 Electrical Engineering Laboratory 3 (1-6) Prereq 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 V (0-3) to 2 (0-6) Prereq c// in E E 361, c// in E E 341, c// in Eng 410 or 403. Experiments in simulation, modeling, transformers, rotating machines, and transmission lines.

380 Preparation for Professional Practice 1 Prereq junior standing in Cpt E, Cpt S, or E E. Resume writing, investigaton of job and internship opportunities; curriculum integration; professional ethics; continuity of design experience. S, F grading.

415 (485) Design Project Management 2 Prereq senior standing. Project scheduling/planning, technical writing, oral presentation skills, working in teams, TQC, TQM, market-driven organizations.

416 [M] Electrical Engineering Design 3 (1-6) Prereq E E 415; Engl 402 or 403. Electrical engineering design of several specific open-ended projects including design specifications, codes, costs, EIS; written and oral presentations and reports.

417 Numerical Solutions to EM Problems 3 Prereq E E 351. Numerical solutions to EM problems including the moment method; finite element method; finite difference method, numerical integration, and matrix operations. Cooperative course taught by WSU, open to UI students (E E 483). Credit not granted for both E E 417 and 517.

424 Digital System Architecture 4 (3-3) Prereq E E 314, 324. Modern developments in digital system design; instruction set, compilation, pipelining, input/output, high speed circuits, laboratory experience in digital system design; emphasis on CPU architecture.

426 Introduction to Electromagnetic Compatibility 3 Prereq E E 341, 351. Electromagnetic compatibility requirements and principles, nonideal component behavior, conducted and radiated emissions and susceptibility, crosstalk, shielding, system design. Credit not granted for both E E 426 and 526.

431 RF and Microwave Circuits and Systems 4 (3-3) Prereq E E 341, 351. Design and implementation of RF/microwave modules and systems for telecommunications; Microstrip, filters, mixers, amplifiers, frequency synthesizers and transceivers.

432 RF Engineering for Telecommunications 4 (3-3) Prereq E E 341, 351. System and propagation issues for wireless telecommunications; cellular, PCS, microwave, and satellite system analysis, design, measurement, and testing.

434 VLSI Systems I 3 (2-3) 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, discretization, A/D and D/A conversion, sampled data system analysis, frequency domain design, state space design, quantization effects.

442 Robotics 3 Prereq E E 489 or ME 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 and aspects 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 problems; formal report.

476 Analog Integrated Circuits 3 Prereq E E 311; 351 or c//; 489 or c//; c// in 477 for capstone design credit. Analysis and design of analog integrated circuits in CMOS and BiCMOS technologies; current mirrors, gain stages, operational amplifiers, frequency response, and compensation. Credit not granted for both E E 476 and 576.

477 [M] Analog Integrated Circuits Laboratory 2 Prereq E E 476. Laboratory applications of E E 476 including the computer-aided design of analog integrated circuits; emphasis on design documentation and reporting.

483 Topics in Electrical and Computer Engineering V 1–3 May be repeated for credit; cumulative maximum 3 hours. Current topics in electrical engineering and computer engineering.

486 Power Electronics 3 Prereq E E 311, 321. High power semiconductor devices; analysis and design of linear and switching power supplies, high frequency magnetics, controller design. Cooperative course taught jointly by WSU and UI (EE 525).

487 Microcomputer Control Systems 3 Prereq E E 341. State variable models, system response, stability analysis, root locus analysis and design; frequency-response and state-space analysis and design.

489 Performance of Power Systems 3 Prereq E E 361, 362. Static and dynamic behavior of power systems, powerflow, and economic considerations.

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, diodes, 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).

501 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).


507 Random Processes in Engineering 3 Prereq Stat 443. Functions of random variables; random sequences; Markov processes; mean-square stochastic calculus; ergodicity; spectral density; linear transformations, filtering, dynamic systems. Cooperative course taught jointly by WSU and UI (EE 570).
School of Electrical Engineering and Computer Science

508 Estimation Theory for Signal Processing, Communications, and Control 3 Prereq E E 501, 507, or equivalent. Principles of statistical estimation; LLSSE; Kalman filtering; smoothing; prediction; maximum-likelihood and Bayesian estimation.


511 Protection of Power Systems II 3 Prereq E E 491 or c/f. 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.

518 Advanced Electromagnetic Theory I 3 Prereq E E 431. 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 536).

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, same as Phys 515.

524 Advanced Digital System Architecture 3 Prereq E E 424. Parallel and distributed processors; multiprocessors; interconnection topologies; language directed architecture; special purpose architecture.

526 Introduction to Electromagnetic Compatibility 3 Prereq graduate standing. Graduate-level counterpart of E E 426; additional requirements. Credit not granted for both E E 426 and 526.

527 Antenna Theory and Design 3 Prereq E E 351. Antenna fundamentals, analytical techniques, characteristics and design procedures for selected types of wire, broadband, and aperture antennas. Cooperative course taught jointly by WSU and UI (EE 532).

528 Advanced Topics in Electromagnetics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq E E 351. Advanced topics of current interest in wave propagation (electromagnetics, acoustics, or optics).


531 Energy Management and Planning 3 Available energy resources; energy issues, economic analysis of energy alternatives; energy future.

534 High Performance Computing 3 Prereq E E 324. Development, current state and future of high speed computing; application of existing commercial supercomputers to engineering problems. Cooperative course taught by UI (EE 504), open to WSU students.

538 EM Simulation 3 Prereq by interview only. Computer simulation of electromagnetics using the finite-difference time-domain (FDTD) method; theory of finite-difference simulation, techniques for modeling EM propagation in lossy and dispersive media, boundary conditions for time-domain simulation. Cooperative course taught by UI (EE 538), open to WSU students.

541 Digital Control Systems II 3 Prereq E E 441. State space approach, SISO, optimal control, State estimators, stochastic systems, State estimation in the presence of noise.

543 Signal Theory 3 Prereq E E 341. Theory of signals; signal spaces; basis sets; signal representations; projection theorem; Fourier transform; optimum signal design.

544 Neural Computation 3 Same as Cpt S 544.

545 Data Compression 3 Prereq E E 507, 543. Source coding with a fidelity criterion; quantization theory; predictive, transform and subband coding; noiseless source codes.

548 Information Theory and Channel Coding 3 Prereq E E 451, 507. Information theory: entropy, mutual information, source and channel coding theorems, channel capacity, Gaussian channels; channel coding: block and convolutional codes.

551 Data Communication Systems 3 Prereq E E 341, 507. Digital communications; multi-amplitude/phase signal constellations; probability of error performance; cutoff rate; Viterbi algorithm; trellis coded modulation.

554 Asynchronous Digital Systems 3 Prereq E E 324. Analysis and design of high speed asynchronous state machines, timing defect analysis, modular elements, arbiters, programmable sequences, system level design. Cooperative course taught jointly by WSU and UI (EE 540).

555 Computer Communication Networks 3 Prereq Stat 443. Packet switching networks; multi-access and local-area networks; delay models in data networks; routing and flow control.

562 Fault Tolerant Computer Systems 3 Same as Cpt S 562.

564 Advanced Signal Processing 3 Prereq Stat 443. Signal processing and communication theory aspects of frequency domain analysis of continuous and discrete random signals.

574 Optoelectronics 3 Prereq E E 496 or Phys 463. Methods of modulating, generating, and detecting light; display techniques; display devices; fiber optics.

576 Analog Integrated Circuits 3 Prereq graduate standing. Graduate-level counterpart of E E 476; additional requirements. Credit not granted for both E E 476 and 576.

584 Analog Circuit Simulation 3 Prereq Cpt S 455 or E E 555. ATM and Broadband ISDN architecture, voice/video traffic modeling, multiplexing, admission and congestion control, bandwidth allocation, ATM switches.

594 Computer Tomography 3 Prereq E E 476. Reconstruction algorithms; fan beam; spiral trajectories; finite-difference algorithms; error minimization; error propagation.

595 Equivalent Circuit Theory 3 Prereq E E 451. Equivalent circuit theory; network theorems and concepts, solutions to the wave equation in rectangular, cylindrical and spherical coordinates. Cooperative course taught by WSU, open to UI students (E E 530).


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

Computer Skills and Literacy Courses

Cpt S

100 General Computer Literacy 2 Computer literacy for a general audience; hardware, operating systems, applications, social issues, and emerging themes.
101 Personal Computer Tools V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 3 hours. Prereq Cpt S 100 or computer science placement examination. Personal computer tools for a general audience; laboratory exposure; PC applications.

105 Computer Literacy and Applications 4 Computer competency for a general audience; PC components, operating systems (Windows), and applications (MS Office Pro., email, Web Browsers).

110 Computer Science Overview 3 Prereq Math 107 or c/f. Central concepts of computer science; algorithms, computability, complexity, artificial intelligence in the context of current computational devices and software.

153 BASIC Programming 2 Comprehensive programming practice using BASIC.

203 FORTRAN Programming 2 Prereq Math 171 or c/f. Comprehensive programming practice using FORTRAN.

207 Introduction to the Internet 3 Prereq Cpt S 105 or 150. Skills and strategies for utilization of the resources of the Internet.

251 C Programming Language 2 Prereq Math 171 or c/f. Comprehensive programming practice using C.

252 Introduction to Operating Systems and Programming 3 Prereq Cpt S 250. Introduction to operating systems and software development; emphasis on the Windows operating system for software development.

253 Java Programming Language 3 Prereq Cpt S 150, 153, 203, or 251. Comprehensive programming practice using Java.

283 Topics in Computer Skills and Literacy V 1-3 Current topics in computer skill development and computer literacy.

302 Unix System Administration 3 (2-3) Prereq Cpt S 150. Functions and responsibilities of Unix system administrators; disks, networking, accounting and policy.

306 Programming for Engineers I 3 Prereq Math 220, 273, 315. Problem-solving methods, software development principles, structured programming with engineering applications.

307 Programming for Engineers II 3 Prereq Cpt S 306. Continuation of Cpt S 306; advanced programming topics and data structures with engineering applications.

309 [S] Computers and Society 3 Prereq Cpt S 105, 150, 153, 203, 241, or 251; Phil 260 or Soc 101; completion of one Tier I and three Tier II courses. Ethical and societal issues related to computers and computer networks; computers as enabling technology; computer crime, software theft, privacy, viruses, worms.

405 The Use of Computer Systems 3 Prereq junior standing. For nonmajors. Computers, computer systems, and software packages for advanced students in other disciplines; hands-on use. No previous computer experience required.

Computer Science Courses

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/f 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 250; 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 sys-tems 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 342. Laboratory/group design project for large-scale software development, requirements analysis, estimation, design, verification techniques.

427 Computer Security 3 Prereq Cpt S 360. Computer security concepts, models and mechanisms; encryption technology, formal models, policy and ethical implications. Credit not granted for both Cpt S 427 and 527.

430 Numerical Analysis 3 Same as Math 448. Credit not granted for both Cpt S 430 and 530.

434 Neural Network Design and Application 3 Prereq Stat 360, computer programming skills. 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 434 and 534.

444 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.

445 Digital Image Processing 3 Prereq Cpt S 250 or 251; Math 220, 273. Digitization, coding enhancement, restoration, reconstruction, segmentation, and display 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.


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.

465 Microcomputer Systems 3 (2-3) Prereq Cpt S 360; E E 214. Design and implementation of a microcomputer system including the system hardware and firmware (BIOS).

466 (461) Embedded Systems 3 (2-3) Prereq Cpt S 360. The design and development of real-time and dedicated software systems with an introduction to sensors and actuators. Cooperative course taught by WSU, open to UI students (CS 404).

483 Topics in Computer Science V 1-4 May be repeated for credit. Prereq Cpt S 350. Current topics in computer science or software engineering.

490 Work Study Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq Cpt S 150, 153, or 241; 250; E E 314; Cpt S major. By interview only. Experience in programming and systems analysis in a working environment under supervision of industrial or governmental professionals and faculty. S, F grading.

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

500 Proseminar 1 Faculty research interests, departmental computer systems, computer science research, report preparation. S, F grading.

511 Computational Structures 3 Prereq Cpt S 317 or Math 421; graduate standing. Categories as theories; formal approaches to specifications and homomorphisms of computational structures.

516 Algorithmics 3 Prereq Cpt S 450. Discrete structures, automata, formal languages, recursive functions, algorithms, and computability.

518 Programming Language Theory 3 Prereq Cpt S 516 or Math 421. Syntax; operational and denotational semantics. Cooperative course taught by WSU, open to UI students (CS 510).

519 Introduction to Computational Geometry 3 Prereq Cpt S 450, graduate standing. Introduction to computational geometry; data structures and algorithms, with motivating applications.
## Program in Engineering Management

**Program Director:** J. A. Ringo; Teaching Faculty, W. J. Gray, J. R. Holt, E. R. Ladd, H. A. Ramsey.

Engineering management is a graduate program designed to help technical professionals become effective managers. The program is administered by the College of Engineering and Architecture. Management training is integrated with upgraded technical skills to meet industry needs for the management of technology and the management of technical professionals. Engineering management focuses on the management of those activities that have a high technological content.

This interdisciplinary master’s degree is offered to the Boeing Company in the Puget Sound area and to other high-tech firms around the country, at WSU Spokane, WSU Tri-Cities, and WSU Vancouver. Classes in the program are offered at times convenient for the working engineer. Engineering management students are engineers who bring a significant amount of experience with them into the academic arena from a variety of engineering and management backgrounds. The college also offers four certificates in Engineering Management topics.


### Program Requirements

The master’s program with a nonthesis option consists of 32 credit hours including a minimum of 30 credit hours of approved graded course work and a minimum of 2 credit hours of Master’s Special Problems. The program of studies leads to a Master of Engineering Management degree. An overview of the engineering management curriculum can be summarized as follows:

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Hours</th>
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<tbody>
<tr>
<td>E M 501</td>
<td>3</td>
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<tr>
<td>E M 505</td>
<td>3</td>
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<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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<tr>
<td>E M 702</td>
<td>2-4</td>
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<tr>
<td>Stat 430</td>
<td>3</td>
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</tbody>
</table>

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.
485 Quality Engineering Using Experimental Design 3 Prereq junior standing. The process of designing quality into products and processes using Taguchi Techniques for robust and parameter design.

490 Design for Product and Service Realization/ Manufacturability 3 Prereq junior standing. Tools and techniques used by engineers for the improvement of the design of products and services.

501 Management of Organizations 3 Same as Mgt 501.


517 Simulation Modeling of Engineering Systems 3 Rec Stat 430; experience with computer programming. Analyzing and developing representative models for complex systems such as project or operations management using a variety of simulation styles.

526 Constraints Management 3 Factors that block improvement in any system; effective breakthrough solutions; continual systems improvement for manufacturing, administration, project, and service operations; layout, capacity planning, inventory management scheduling.

540 Operations Research for Managers 3 Rec Math 273. Applying linear, integer, goal programming; network optimization; queuing analysis; dynamic programming; simulation; Markov analysis; and forecasting to engineering management decisions.

545 Decision Analysis for Engineering 3 Structured discipline for describing, analyzing, and finalizing decisions involving uncertainty.

560 Manufacturing and Operation Design and Strategy 3 World-class concepts, tools, and techniques for designing and operating manufacturing and service operations; layout, capacity planning, inventory management scheduling.

564 Project Management 3 Rec basic statistics course. Planning, organizing, scheduling and controlling major projects; human dimensions, PERT and CPM scheduling models, resource allocation, and cost controls.

565 Systems Engineering Management 3 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/f. 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 design and analysis.

585 Quality Engineering Using Experimental Design 3 Design of quality into products and processes using design of experiments including robust/parameter design and tolerance design techniques.

590 Design for Manufacturability (DFM) 3 Tools and techniques which can be used for the improvement of the design of products, processes, and services.

591 Strategic Management of Technology and Innovations in Engineering 3 Rec final year. Management of innovation and technological innovation, integrating technological strategy, new product development, and corporate entrepreneurship and innovation.

595 Advanced Topics in Engineering Management I V 1-3 May be repeated for credit; cumulative maximum in E M 595 and 596, 9 hours. A wide range of current high-interest engineering management topics.

596 Advanced Topics in Engineering Management II 3 May be repeated for credit; cumulative maximum in E M 595 and 596 is 9 hours. A wide range of current high-interest engineering management topics.

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

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

Department of English


The major in English provides students with a broad critical and cultural understanding of literature and literary studies, while at the same time emphasizing the writing and analytical skills that are vital to success in the university, in professional and graduate school, and in the workplace. The program of study is flexible and allows English majors to focus on particular areas of intellectual interest, to pursue electives, minors, and second majors in other departments, and to shape their academic careers in line with professional and personal interests. The curriculum is designed for (1) students who desire a broad education emphasizing language and literature, (2) students who wish to teach or to prepare for graduate studies in English, and (3) students who intend to use the background and skills learned in the major as a foundation for careers in writing, editing, law, or business. The curriculum provides majors the opportunity to complete their studies with a small discussion seminar or senior project in their area of emphasis.

Students who are preparing to teach English in the public schools of Washington should examine the summary of requirements for majors and minors listed in the Department of Teaching and Learning in this catalog, and they should confer with the College of Education concerning the requirements for certification.

The Department of English offers courses of study leading to the degrees of Bachelor of Arts, Master of Arts, and Doctor of Philosophy in English. The department participates in the interdepartmental program in American Studies leading to the degrees of Bachelor of Arts, Master of Arts, and Doctor of Philosophy in American Studies. Students interested in the Bachelor of Arts in this interdisciplinary field should consult the requirements listed under Program in American Studies. Students interested in interdisciplinary degrees in areas such as linguistics, humanities, and classical studies should consult the requirements within the Program in General Studies.

Degree Program Requirements

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

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 writing, 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-course foundation consisting of one introductory course in literary studies (Eng 108, 199, 209, or 210) and one writing-intensive course in literary analysis and critical approaches (Eng 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 include 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-extension concentration, which must include an appropriate senior seminar, senior project (the latter possible with an acceptable proposal and advisor available to direct), or internship, the whole making up a coherent area of study. Concentrations must be approved by advisor, may include one nondepartmental or 100-200-level course if appropriate, and must fall into one of the following categories: English Literature, American Literature, Literature and Criticism, World Literature, Humanities, Writers of Color/Edmundo [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**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
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<td>Engl 101 [W] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<td>Science Elective (GER)</td>
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**Sophomore Year**

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<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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**Junior Year**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>American Writers of Color</td>
<td>3</td>
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<tr>
<td>Concentration Elective</td>
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</tr>
<tr>
<td>Engl 380, 381, or 382</td>
<td>3</td>
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<tr>
<td>English Literature Elective</td>
<td>3</td>
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<td>Electives</td>
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**Senior Year**

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<th>Hours</th>
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<tbody>
<tr>
<td>Concentration Elective</td>
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<td>English Option Elective</td>
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**II. GRADUATE-STUDY PREPARATION DEGREE PROGRAM (120 HOURS) ✔FYDA**

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<td>Biological Sciences [B] (GER)</td>
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<td>Engl 305 [H] or 306 [H] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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**Sophomore Year**

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<tr>
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<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,IS,K] (GER)</td>
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<td>Engl 302 [M] [W] (GER)</td>
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<td>Engl 305 [H] or 306 [H] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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**Junior Year**

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<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>American Writers of Color</td>
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</tr>
<tr>
<td>Concentration Elective</td>
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</tr>
<tr>
<td>Engl 380, 381, or 382</td>
<td>3</td>
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<tr>
<td>English Literature Elective</td>
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<td>Elective</td>
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**Senior Year**

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<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
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<tr>
<td>English Option Elective</td>
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**III. ENGLISH TEACHING DEGREE PROGRAM (120 HOURS) ✔FYDA**

**Freshman Year**

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<tr>
<th>Second Semester</th>
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<td>Biological Sciences [B] (GER)</td>
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<td>Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,IS,K] (GER)</td>
<td>6</td>
</tr>
<tr>
<td>Engl 302 [M] [W] (GER)</td>
<td>3</td>
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<tr>
<td>Engl 305 [H] or 306 [H] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</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>American Writers of Color</td>
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<td>Concentration Elective</td>
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<td>Engl 300</td>
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<td>Engl 380, 381, or 382</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>Concentration Elective</td>
<td>3</td>
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<tr>
<td>Engl 324</td>
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<tr>
<td>Electives</td>
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</tbody>
</table>

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1. Psych 105 [S] (GER) required of students planning to certify to teach 4-12; see Dept. of Teaching and Learning for additional requirements for those accepted for certification. (Certification requirements typically add one to two semesters for students.)
2. Engl 255, 256, 354, 458 (Anh 256, 350, 355, 450, or Engl 433 may be substituted with advisor’s permission).
3. Required of students planning to certify.
5. If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.
6. If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.
7. Three 300-400-level courses; program must include at least three 300-400-level courses in English literature prior to 1900.
8. Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).

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1. One from Engl 311, 314, 321, 322, 341, 345, or 346.
2. If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.
3. 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.
4. Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).
IV. ENGLISH/PRE-LAW DEGREE PROGRAM
(120 HOURS) ✔FYDA

Requirements in this option include those of the general degree plus 6 credit hours each in philosophy and political science and 3 in Macroeconomics (among these, Phil 201 Elementary Logic and Phil 260 Ethics are required, with a range of course selections specified for the other areas). In addition to satisfying these requirements, students in this option are urged to elect GER courses in either American cultures, history, or society to round out the broad-based liberal-arts education recommended by law schools.

Freshman Year

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hist Elective [H] (GER)</td>
<td>3</td>
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<tr>
<td>Social Sciences [S,K] (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, Intercultural, or Social Sciences [H,G,L,S,K] (GER)</td>
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<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>
</tr>
<tr>
<td>Pol S Elective¹</td>
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<table>
<thead>
<tr>
<th>Second Semester</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>
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<tr>
<td>Phil 201 [H] (GER)</td>
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<td>Elective</td>
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Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>American Writers of Color²</td>
<td>3</td>
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<tr>
<td>Economics Elective³</td>
<td>3</td>
</tr>
<tr>
<td>Engl 380, 381, or 382²</td>
<td>3</td>
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<tr>
<td>English Literature Elective³</td>
<td>3</td>
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<tr>
<td>Phil 260 [H] (GER)</td>
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<td>Complete Writing Portfolio</td>
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<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Concentration Electives</td>
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<tr>
<td>Pol S Elective¹</td>
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<tr>
<td>Electives</td>
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Senior Year

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<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Concentration Elective</td>
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<tr>
<td>Electives</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>Senior Seminar, Senior Thesis, or Internship⁴</td>
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<td>Tier III Capstone (GER)</td>
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<td>Electives</td>
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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; Acctg 230 may be substituted).
⁴ If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.
⁵ 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.
⁶ Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).

V. ENGLISH/BUSINESS DEGREE PROGRAM
(120 HOURS) ✔FYDA

Requirements in this option include those of the general degree plus 22 credit hours distributed as follows: 15 hours in business core courses (B Law 210; Econ 102 or 198; MIS 350; Mgt 301 or Dec S 340; and Mktg 360); 4 hours in computer applications in business (Cpt S 105 or Cpt S 100 and 101); and 3 in ethics (Phil 260). In addition to satisfying these requirements, students in this option are urged to elect GER courses in either ecology, American cultures, history, or society to round out the broad-based liberal-arts education that they will bring to careers in business.

Freshman Year

<table>
<thead>
<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER)</td>
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<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<td>Engl 108 [H], 199 [H], 209 [H], or 210 [H] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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Sophomore Year

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<td>Econ 102 [S] or 198 [S] (GER)</td>
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<td>Engl 305 [H] or 306 [H] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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<td>Elective</td>
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<td>Engl 383, 384, 385, or 386</td>
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<td>Engl 387, 388, or 389</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Elective</td>
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Junior Year

<table>
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<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>American Writers of Color¹</td>
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<tr>
<td>B Law 210</td>
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<td>Concentration Elective</td>
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<td>Engl 380, 381, or 382²</td>
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<td>MIS 350</td>
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<td>Complete Writing Portfolio</td>
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<tr>
<td>English Literature Elective³</td>
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<tr>
<td>Mgt 301 or Dec S 340</td>
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<td>Phil 260 [H] (GER)</td>
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Senior Year

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<th>Hours</th>
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<tr>
<td>Tier III Capstone (GER)</td>
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<td>Electives</td>
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¹ One from Engl 311, 314, 321, 322, 341, 345, or 346.
² If American Writers-of-Color course focuses on post-1916 works, then Engl 380 or 381 must be chosen.
³ 300-400-level course; program must include at least three 300-400-level courses in English literature prior to 1900.
⁴ Approved capstone for concentration (Engl 405, 492, 493, 494, 495, 498, or senior project).
⁵ If not taken as concentration elective, required for this option.

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

<table>
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<tr>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl</td>
</tr>
<tr>
<td>100 Basic Writing 3 Prereq writing placement exam. Designed to introduce students to writing and reading in the university. S, F grading.</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>
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 context, for interpretation and understanding.

210 [H] Readings in American Literature 3 Selected works by diverse voices from different eras of American literature; importance of conventions, cultural contexts, for interpretation and understanding.

216 [H] American Culture 3 Introduction to the interdisciplinary study of American cultures and the field of American studies.

220 Introduction to Multicultural Literature 3 Same as CAC 220.

222 [G] World Literature in English 3 Literature in English from such regions as Africa, Asia, and the Caribbean.

251 Introduction to Creative Writing: Exploring the Genres 3 Beginning writer's workshop covering short fiction, creative non-fiction, and poetry with discussion of the elements of each genre: poetic forms.

255 English Grammar 3 Introduction to the terms, concepts, and analytical methods of traditional English grammar.

256 Introduction to Syntax and Semantics 3 Technical introduction to the structure of words and sentences in natural languages and to the study of linguistic meaning.


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, for interpretation, 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.

304 Revision Workshop 3 Prereq [W] course and completion of University Writing Portfolio. Appraises processes and revision, including self-assessment, developing rhetorical approaches; diagnosing and solving consistent problems, editing, and proofreading strategies.

305 [H] Shakespeare 3 Shakespearean drama to 1600.

306 [H] Shakespeare 3 Shakespearean drama after 1600.

307 [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.


326 [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.

336 [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 355.

346 Vanguard Poetics in Chicano/Latino Writers 3 Same as CAC 354.

351 Creative Writing: Prose 3 Prereq Engl 101. Writing the short story: practice and theory.

352 Creative Writing: Poetry 3 Prereq Engl 101. Workshop approach to poetry writing.

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.

357 Topics in Magazine Editing and Creative Writing 3 May be repeated for credit; cumulative maximum 6 hours. Magazine editing, audience, and publishing techniques; other specialized topics in professional and creative writing.

360 [H] The English Novel to 1900 3 Classic English novels in cultural perspective by such authors as Defoe, Fielding, Austen, the Brontes, Thackeray, Dickens, George Eliot, Hardy.

361 [H] The American Novel to 1930 3 Classic American novels in cultural perspective by such authors as Cooper, Hawthorne, Melville, Stowe, Twain, James, Jewett, Chopin, Crane, Dreiser.

363 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.

364 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.

366 [M] Technical and Professional Writing 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.

373 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 traditions.

374 English Literature of the 16th Century 3 Prereq Engl 302 or substitution approved by advisor. Non-dramatic literature of English Renaissance, including More, Wyatt, Sidney, Spenser, Raleigh, and Shakespeare, in age of Humanism and Reformation.

380 Milton and English Literature of the 17th Century 3 Prereq Engl 302 or substitution approved by advisor. Neo-classical literature from 1660 to the Romantic era: Dryden, Swift, Pope, Johnson, Gray, Goldsmith, Burns, and others.

387 English Romantic Literature 3 Prereq Engl 302 or substitution approved by advisor. Major works by Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, and others during Romantic literary revolt, especially 1798-1832.

390 Victorian Literature 3 Prereq Engl 302 or substitution approved by advisor. Major works by Tennyson, Dickens, Browning, Swinburne, Wilde, Kate Chopin, and a dynamic age of change in Britain, 1832-1901.

391 Modern British Literature 3 Prereq Engl 302 or substitution approved by advisor. Fiction, drama, poetry in age of conflict, artistic experimentation: Joyce, Woolf, Lawrence, Murdoch, Shaw, Pinter, Yeats, Eliot, Auden, and others.

392 [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 introductions to generative analysis of sentences and to sound systems of human languages. Credit not granted for both Engl 443 and 543.

451 Advanced Creative Writing: Prose 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Engl 351 or consent of instructor. Writing the novel.

452 Advanced Creative Writing: Poetry 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Engl 352 or consent of instructor. Workshop approach to poetry writing for the advanced student.

458 Topics in Sociolinguistics and Psycho-linguistics 3 May be repeated for credit; cumulative maximum 6 hours. Relationship of language to social and psychological structures.

470 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 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 or teaching option. Not open to graduate students. Seminar with term paper project; literature, composition theory, pedagogy.

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

498 Internship V 1-15 May be repeated for credit; cumulative maximum 15 hours. Prereq junior in Engl. Off-campus cooperative education learning: corporate, 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 3 Contemporary theories of composition and their application to the classroom.

503 Old English: Anglo-Saxon 3 Old English language and its literature with emphasis on short lyrics and prose.

504 Old English: Beowulf 3 Prereq Engl 503. Advanced study of Old English language and literature with focus on the epic Beowulf.

506 Seminar in 16th Century English Literature 3 May be repeated for credit; cumulative maximum 6 hours.

507 Shakespeare 3 Plays, poems, criticism, and background materials.

508 Seminar in Assessment of Writing 3 Problems involved in the diagnosis and assessment of student writing.

509 Seminar in Classical Rhetoric and its Influences 3 Study of Greek and Roman rhetorical theories and their influences.

510 Backgrounds of American Literature 3 Studies of American writing in cultural contexts.

511 Seminar in 17th and 18th Century American Literature 3 May be repeated for credit; cumulative maximum 6 hours.

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 revaluations 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.

525 Seminar in English Literature of the 17th Century 3 May be repeated for credit; cumulative maximum 6 hours.

527 Seminar in English Literature of the Restoration and 18th Century 3 May be repeated for credit; cumulative maximum 6 hours.

529 Seminar in 19th Century American Literature 3 May be repeated for credit; cumulative maximum 6 hours.

531 Administering a Writing Lab 3 Prereq Engl 501 or 502 or consent of Writing Lab Director.combining theory and practice in writing lab supervision and management. Interns will work under direct faculty supervision.

532 Teaching Writing to Nontraditional Students 3 Prereq Engl 501, 502, or by interview only. Theory and practice of the teaching of basic writers.

534 Theories and Methods of the Teaching of Technical and Professional Writing 3 Historical and theoretical bases for production of scientific discourse; training in its practical applications.

537 Seminar in English Literature 3 May be repeated for credit; cumulative maximum 12 hours. Major topics and figures.

541 Seminar in TESOL and Linguistics 3 May be repeated for credit; cumulative maximum 6 hours. Cooperative course taught by UI (Eng 510), open to WSU students.

543 Problems in English Linguistics: Syntax and Phonology 3 May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of Engl 443; additional requirements. Credit not granted for both Engl 443 and 543. Cooperative course taught jointly by WSU and UI (Eng 543).

544 TESOL: Theory and Methods 3 May be repeated for credit; cumulative maximum 6 hours. Theoretical issues and practical experience in ESL classroom situations. Cooperative course taught by WSU; open to UI students (Eng 514).

547 Literary Criticism 3 Theories of literature from Plato and Aristotle to the present.

548 Seminar in Literary Theory 3 May be repeated for credit; cumulative maximum 6 hours. Problems in the theory and practice of literary criticism.

549 Seminar in 20th Century British Literature 3 May be repeated for credit; cumulative maximum 6 hours.

550 Seminar in Poetry or Non-fiction Prose 3 May be repeated for credit; cumulative maximum 6 hours. Historical and generic studies in poetry and non-fiction prose.

554 History of the English Language 3

555 Seminar in Middle English Literature 3 May be repeated for credit; cumulative maximum 6 hours.

556 Seminar in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Historical and generic studies in dramatic literature.

557 Seminar in Prose Fiction 3 May be repeated for credit; cumulative maximum 6 hours. Historical and generic studies of prose fiction.

573 Seminar in American Literature 3 May be repeated for credit; cumulative maximum 12 hours. Major topics and figures.

580 Seminar in Medieval Literature 3 May be repeated for credit; cumulative maximum 6 hours. The literature of western Europe from 450 to 1500.

591 The Teaching of Literature 3 Prereq two semesters full-time enrollment in program or consent of advisor. The theory and practice of designing and teaching courses in literature.

592 Language Arts: Methods of Composition 3 Methods of composition and relevant research in language arts.

593 Language Arts: Theories of Composition 3 Contemporary theories of composition and their application to the language arts classroom.

595 Topics in English 3 May be repeated for credit; cumulative maximum 6 hours. Language, English pedagogy, or literature of special or current interest; reading theories, teaching of writing, current literary theories.

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

597 Topics in Composition and Rhetoric 3 May be repeated for credit; cumulative maximum 6 hours. Rhetoric and composition theory and praxis.

598 Teaching Apprenticeship 1 May be repeated for credit. S, F grading.

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

700 Master's Research, Thesis, and/or Examination Variable credit. S, F grading.
702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

**Department of Entomology**


Insects and other related arthropods are the dominant consumers in all terrestrial ecosystems. There are many more kinds of insects than all other creatures combined. They compete at all levels with humans in the production, processing and use of food and fiber resources. They are a major health threat to most of the world’s people. In-depth knowledge in basic areas of insect identification, morphology, physiology, behavior and ecology are prerequisites to developing and applying control measures against our arthropod competitors. Ecological and legal restrictions on pesticide usage require people who are knowledgeable in the safe use of pesticides and in the effect of such use on the environment.

The entomology curriculum provides the opportunity to study the basic and applied aspects of entomology. Courses are designed for majors and nonmajors, providing needed training for students in agriculture, education, veterinary medicine, microbiology, public health, environmental sciences, and natural sciences. The curriculum prepares students for graduate study in entomology or for employment in institutional or private pest control-oriented areas. An interdisciplinary curriculum in integrated pest management (IPM) is available to students with interests that span entomology and pest management.

Facilities are available for graduate study in the major areas of entomology: apiculture behavior, integrated biological control and sustainable pest management, ecology, forest entomology, insect-plant relationships, medical/veterinary entomology, population genetics, physiology, systematics, and environmental toxicology. Departmental faculty at on-campus 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 approach to pest management. This commitment is reflected in the broad involvement of the faculty and evolving curricula in biocontrol.

The department offers courses of study leading to the degrees of Bachelor of Science in Entomology, with three options available in Entomology, Human/Animal Health, and Tree Fruit IPM. Master of Science in Entomology, and Doctor of Philosophy (Entomology). Additional information can be obtained on the World Wide Web at: Entomology.wsu.edu.

**Degree Program Requirements**

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

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

Students planning to become pest control consultants or pest management specialists should include the following courses: Ag Ec 201, CropS 305; IPM 201, 452, 462; PI P 429; SoilS 201; Stat 310 or 412 and crops courses in CropS and Hort.

**ENTOMOLOGY DEGREE PROGRAM**

(120 HOURS) **FYDA**

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engr 101 [W], 201 [W] or 301 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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**Second Semester**

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<th>Hours</th>
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<tbody>
<tr>
<td>Biol 104 [B] (GER)</td>
</tr>
<tr>
<td>Chem 102 [P] or 106 [P] (GER)</td>
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<tr>
<td>Communication Proficiency [C,W] (GER)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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**Sophomore Year**

**First Semester**

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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ec 201 [S] or Econ 102 [S] (GER)</td>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Entom/IPM Elective</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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**Second Semester**

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<th>Hours</th>
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<tbody>
<tr>
<td>Biol 372</td>
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<tr>
<td>Chem 240 or 340</td>
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<tr>
<td>GenCB 301</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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**Junior Year**

**First Semester**

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<th>Hours</th>
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<tbody>
<tr>
<td>Bot 320, Zool 352, or 353</td>
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<tr>
<td>Entom 343, 344 [M]</td>
</tr>
<tr>
<td>Math 140 [N] or 205 [N] (GER)</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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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
</tr>
<tr>
<td>Bot 120, 320, or 332</td>
</tr>
<tr>
<td>Entom 439 or 440 [M]</td>
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<tr>
<td>Electives</td>
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</table>

**Senior Year**

**First Semester**

<table>
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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Entom/IPM Electives</td>
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<td>Electives</td>
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**Second Semester**

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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Tier III Capstone (GER)</td>
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<tr>
<td>Electives</td>
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</table>

**ENTOMOLOGY HUMAN/ANIMAL HEALTH DEGREE PROGRAM**

(120 HOURS) **FYDA**

The Human/Animal Health option is geared toward students interested in pre-professional training and will prepare students for medical, dental, or veterinary professional schools, and will also give a fall-back opportunity for degree holders in the areas of professional human and animal health, including public health and animal care organizations. Entomology represents a unique discipline that easily bridges between several diverse biological disciplines. Students completing this option should be highly trained pre-professional graduates who will be prepared to enter the public or veterinary health areas or pursue a career in entomology.

**Freshman Year**

**First Semester**

<table>
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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>Biol 103 [B] (GER)</td>
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<tr>
<td>Chem 101 [P] or 105 [P] (GER)</td>
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<td>Stat 310 or 412</td>
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**Second Semester**

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<tr>
<td>Biol 104 [B] (GER)</td>
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<tr>
<td>Chem 102 [P] or 106 [P] (GER)</td>
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<tr>
<td>ComSt [C], or Engl 201 [W], or 301 [W] (GER)</td>
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<tr>
<td>Entom 343, 344, or 348</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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**Sophomore Year**

**First Semester**

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<th>Hours</th>
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<tr>
<td>Biol 372</td>
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<td>Chem 240 or 340</td>
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<tr>
<td>GenCB 301</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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**Second Semester**

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<tr>
<td>Ag Ec 201 [S] or Econ 102 [S] (GER)</td>
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<tr>
<td>Chem 341</td>
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<tr>
<td>GenCB 301</td>
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<tr>
<td>Phys 102 [P] or 202 [P] (GER)</td>
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**Junior Year**

**First Semester**

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<th>Hours</th>
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<tbody>
<tr>
<td>Entom 343 and 344</td>
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<td>(or program options)</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Phys 101 [P] or 102 [P] (GER)</td>
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**Second Semester**

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<tr>
<td>Ag Ec 201 [S] or Econ 102 [S] (GER)</td>
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<tr>
<td>Chem 341</td>
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<tr>
<td>GenCB 301</td>
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<tr>
<td>Phys 102 [P] or 202 [P] (GER)</td>
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**Senior Year**

**First Semester**

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<th>Hours</th>
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<tbody>
<tr>
<td>Biol 372</td>
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<tr>
<td>Chem 342</td>
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<tr>
<td>Entom 439, 440 [M], or 550</td>
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<tr>
<td>Stat 212 [N] (GER) or 412</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>Micro 406 or 420</td>
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<tr>
<td>Program Options</td>
</tr>
<tr>
<td>Zool 405</td>
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<tr>
<td>Zool 417, Entom 448, or Entom 449</td>
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**Second Semester**

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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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Program Options

Tier III Capstone (GER) 5 or 6
Zool 353, 450, Micro 310, or 311 3

Entomology Minor

A minimum of 16 hours is required for the minor and must include Entom 343, 344, 439, or 440 and 9 hours from: Entom 348, 441, 448, 449, 450, 462; IPM 201, 452, 462.

Preparation for Graduate Study

As preparation for work toward an advanced degree in entomology, a student should have completed an undergraduate major in some field of biological science, chemistry, forestry or agriculture. Background work should include courses in general biology, organic chemistry, genetics, ecology, entomology, plant science, physical science, and zoology.

INTEGRATED PEST MANAGEMENT

The integrated pest management (IPM) major is a multidisciplinary course of study sponsored by the Department of Entomology. Students electing the IPM major will take courses in the Departments of Crop and Soil Sciences, Entomology, Horticulture and Landscape Architecture, and Plant Pathology. Students acquire a holistic perspective and ecological understanding of the philosophy, principles, and practices of pest management and are trained to become professional crop protection specialists. Students in this major have the option of obtaining a general background in pest management or specializing in the areas of entomology, weed science, and tree fruit IPM within pest management. All students also participate in a summer internship program whereby they have the opportunity to gain work experience through supervised off-campus employment with pest management individuals or organizations.

All students are required to complete a minimum of 120 semester hours of course work, including the internship, to earn the Bachelor of Science degree in Entomology with a major in IPM. At least 40 of the total hours required must be in 300-400-level courses.

FIRST AND SECOND YEAR REQUIREMENTS

The requirements for the first two years are common to both integrated pest management degree programs:

Freshman Year

First Semester
- Biol 103 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- IPM 201 2

Second Semester
- Biol 104 [B] or Bot 120 [B] (GER) 4
- Chem 102 [P] or 106 [P] (GER) 4
- GenEd 111 [A] (GER) 3
- Math 140 [N] or Stat 212 [N] (GER) 4
- Psych 105 [S] (GER) 3

Sophomore Year

First Semester
- Ag Ec 201 [S] (GER) 3
- CropS 201 or Hort 201 4
- ES/RP 101 [B] (GER) 4
- ES/RP 174 3
- H D 205 [C] (GER) 3

Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Chem 240 4
- ES/RP 150 [Q] or Zool 150 [Q] (GER) 3
- Intercultural [L,G,K] (GER) 3
- SoilS 201 [B] (GER) 3

ENTOMOLOGY OPTION DEGREE PROGRAM (130 HOURS) ✔FYDA

Junior Year
First Semester
- Arts & Humanities [H,G] (GER) 3
- Bot 320 4
- CropS 305 3
- PI P 429 3
- Complete Writing Portfolio

Second Semester
- Biol 372 [M] 4
- Bot 332 4
- Entom 343, 344 4
- IPM 452 2
- Elective/Option Course 3

Year 3, Summer Session: IPM 399 3

Senior Year
First Semester
- Entom 439 4
- Elective/Option Course 2

Second Semester
- IPM 462 [M] 3
- Elective/Option Courses 12-15

WEED SCIENCE OPTION DEGREE PROGRAM (132 HOURS) ✔FYDA

Junior Year
First Semester
- Arts & Humanities [H,G] (GER) 3
- Bot 320 4
- CropS 302 3
- CropS 305 3
- PI P 429 3
- Complete Writing Portfolio

Second Semester
- Biol 372 [M] 4
- Bot 332 4
- Entom 340; or 343, 344 3 or 4
- IPM 452 2
- Elective/Option Course 3

Year 3, Summer Session: IPM 399 3

Senior Year
First Semester
- CropS 445 3
- CropS 303 3
- CropS 448 or 450 1-4
- Tier III Capstone (GER) 3
- Elective/Option Courses 6

Second Semester
- IPM 462 [M] 3
- Elective/Option Courses 12-15

TREES MANAGEMENT DEGREE PROGRAM (146 HOURS)

Tree Fruit Integrated Pest Management option in the Entomology B.S. degree is an integrated, cooperative program between Wenatchee Valley College and the Department of Entomology. This option is designed to prepare integrated pest management specialists for employment in the tree fruit industry in the Pacific Northwest. The first half of the program is taken at Wenatchee Valley College, with an emphasis on fundamental agricultural science, tree fruit production, and orchard management (including pest management) through courses and orchard practicum experiences. Wenatchee Valley College, located in the heart of Washington’s tree fruit industry, has teaching orchards and well equipped facilities. The second half of the program is taken at Washington State University where courses provide students with an advanced knowledge of plant science, entomology and pest management, and fulfill remaining GERs necessary for the B.S. degree.

Freshman Year (Wenatchee Valley College)

Fall Quarter
- Agri 189 2
- Agri 252 4
- Agri 261 5
- Chem 110 5
- Winter Quarter
- Agri 253 3
- Agri 262 5
- Biol 122 5
- Engl 101 5
- Spring Quarter
- Agri 254 2
- Agri 263 5
- Biol 123 5
- Chem 111 5
- Summer Quarter
- Agri 255 2
- Agri 296 3

Sophomore Year (Wenatchee Valley College)

Fall Quarter
- Agri 242 4
- Agri 264 5
- Agri 296 3
- Math 201 5
- Winter Quarter
- Agri 218 3
- Agri 265 5
- Econ 202 5
- Comm 220 5
- Spring Quarter
- Agri 243 4
- Agri 266 5
- Agri 289 2
- Agri 296 3
- Summer Quarter
- Agri 207 5
- Agri 296 3
Department of Entomology

Fall Semester

Arts & Humanities [H,G] (GER) 3
Bot 320 4
Chem 240 4
CropS 305 3
GenEd 110 [A] (GER) 3
Complete Writing Portfolio

Spring Semester

Biol 372 [M] 4
Bot 332 4
ES/RP 174 3
GenEd 111 [A] (GER) 3
IPM 452 2

Second Semester

Entom 441 3
Hort 416 3
Hort 421 [M] 3
IPM 462 [M] 3
SoilS 441 3
Tier III Capstone (GER) 3

Junior Year (Washington State University)

Fall Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Bot 325 3
CropS 360 [I] (GER) 3
Electives 6

Spring Semester

Biol 372 [M] 4
Bot 332 4
ES/RP 174 3
GenEd 111 [A] (GER) 3
IPM 452 2

Senior Year (Washington State University)

Fall Semester

Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Bot 325 3
CropS 360 [I] (GER) 3
GenEd 111 [A] (GER) 3
IPM 452 2

Description of Courses

Entomology

Entom 101 [B] Insects and People: A Perspective 3 The world’s most abundant animals and their extensive effects on people yesterday and today.


343 [M] General Entomology 2 Rec Biol 103, 104 or approval of instructor. Biology, natural history, and importance of insects and related arthropods.

344 [M] General Entomology Laboratory 0-6 Prereq Biol 103, 104 rec or approval of instructor. Identification and taxonomy of insects and related arthropods; insect collection and field work required.

348 Forest Insects 1 Same as NATRS 348.

349 Forest Pest Management 1 Same as NATRS 349.

361 Honey Bee Biology 1 Biology of the honey bee, including behavior, genetics, evolution, pollination, sociality, and beekeeping practices.

362 Fundamentals of Beekeeping 1 (0-2) Prereq Entom 361 or c/l. 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 required.

380 Urban Entomology 3 (2-3) Management and biology of urban pests in home, landscape, and recreational environments.

401 [T] Invertebrates in Biological Thought 3 Prereq Biol 104, completion of one Tier I and three Tier II courses; Rec Zool 150. Development of biological ideas and knowledge from antiquity to present with emphasis on major advances achieved through invertebrate models. Cooperative course taught by WSU, open to UI students (Ent 401).

439 [M] Taxonomic Entomology 2 (2-0) or 4 (2-6) Prereq Entom 340 or 343. Identification of insect orders and families. Insect collection required. Credit not granted for both Entom 439 and 539.

440 Taxonomy of Immature Insects 2 or 4 (2-6) Prereq Entom 343. Identification of eggs, larvae, nymphs, and pupal stages of insects. Insect collection required. Credit not granted for both Entom 440 and 540.

441 (443) Insect Ecology 3 (2-3) Prereq Entom 343 or general ecology course. Population and community dynamics, theory and application in natural and artificial systems. Field trips required. Cooperative course taught by UI (Ent 441), open to WSU students.


446 Insect-Plant Interactions: Plant Resistance to Arthropods 1 Prereq Entom 343. Principles and methods of screening and developing crop cultivars resistant to arthropods. Cooperative course taught by UI (Ent 446), open to WSU students.

447 Introduction to Biological Control 3 (2-3) Principles and methods of controlling insect pests and weeds by biological means. Credit not granted for both Entom 447 and 547. Cooperative course taught by UI (Ent 447), open to WSU students.

448 Medical Entomology 3 (2-3) Prereq Biol 103, 104. Aspects of medical entomology as they apply to humans. Cooperative course taught by UI (Ent 448), open to WSU students.

450 Principles of Applied Entomology 4 (3-3) Prereq Entom 340 or 343. Utilization of biological, physical, cultural and chemical factors in managing insect pest populations.

460 Insects for Teaching 2 Prereq general biology course. The use of insects in teaching scientific principles in the life sciences.

462 Systems in Integrated Crop Management 3 (2-3) Prereq one semester calculus. Evaluation and use of computer models to make decisions for managing pests, diseases, and crop productivity. Credit not granted for both Entom 462 and 562.

472 Aquatic Entomology 3 (2-3) Identification and biology of insects associated with aquatic and subaquatic environments. Cooperative course taught by UI (Ent 472), open to WSU students.


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.

490 Special Topics in Entomology V 1-4 May be repeated for credit; cumulative maximum 10 hours. Credit not granted for both Entom 490 and 590.

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

511 Principles of Systematic Biology 3 (2-3) Same as Zool 511.

526 Population Analysis 1 Same as NATRS 526.

529 Principles of Population Dynamics 1 Same as NATRS 529.

539 Taxonomic Entomology 2 or 4 (2-6) Graduate-level counterpart of Entom 439; additional requirements. Credit not granted for both Entom 439 and 539.

540 Taxonomy of Immature Insects 2 or 4 (2-6) Graduate-level counterpart of Entom 440; additional requirements. Credit not granted for both Entom 440 and 540.

541 Advanced Insect Ecology 3 (2-3) Prereq Entom 343; general ecology course. Population and community dynamics, theory and application in natural and artificial systems. Field trips required. Cooperative course taught by UI (Ent 541), open to WSU students.

543 Predator-Prey Dynamics 1 Prereq calculus, general ecology course. Dynamical consequences of interactions between predators and their prey at the population, community and ecosystem level.

546 Host Plant Resistance 3 Prereq graduate standing. Graduate-level counterpart of Entom 446; additional requirements. Credit not granted for both Entom 446 and 546. Cooperative course taught by UI (Ent 546), open to WSU students.

547 Introduction to Biological Control 3 (2-3) Graduate-level counterpart of Entom 447; additional requirements. Credit not granted for both Entom 447 and 547.

550 Insect Physiology 4 (3-3) Prereq Chem 240, Zool 352; Entom 340 or 343 or Zool 322. General principles of insect physiology; the mechanisms of vital processes in insects; organ, cellular, subcellular, chemical, and physical levels. Cooperative course taught by WSU, open to UI students (Ent 550).

551 Biological Control of Weeds 1 Prereq general ecology. Principles, methodologies, and implementation of biological control of weeds in noncropland environments. Cooperative course taught by WSU, open to UI students (Ent 451/J551).


553 Applied Biological Control: Microbial Control 1 Prereq microbiology, plant pathology, or entomology; principles of biochemistry. Principles and methodologies of microbial control of insect pests, weeds, and plant pathogens in agriculture and forestry. Cooperative course taught by UI (Ent 553), open to WSU students.

132
556 Insecticides: Toxicology and Mode of Action  
Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Insecticides in terms of historical perspective, classification, synthesis, toxicity, mode of action, and metabolism.

557 Herbicides: Toxicology and Mode of Action  
Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Herbicides in terms of historical perspective, classification, synthesis, toxicity, mode of action, and metabolism.

558 Pesticide Topics  
Prereq biochemistry, organic chemistry, physiology, plant or animal physiology. Current issues concerning pesticides in terms of toxicity, mode of action, and metabolism.

562 Systems in Integrated Crop Management  
3-5 Graduate-level counterpart of Entom 462; additional requirements. Credit not granted for both Entom 462 and 562.

577 Insect-Plant Interactions: Community Dynamics  
1 Prereq Biol 372, GenCB 301, or Math 140 or 171. Causes and processes of temporal and spatial changes in communities of insects. Credit not granted for Entom 443 and 577, 578, 579.

578 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 577, 578, 579.

579 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 577, 578, 579.

583 Physiological Interactions in Predator-Prey Relationships  
1 Prereq Biol 102, Rec general ecology. Integrate physiological and behavioral adaptations that have evolved in predator-prey relationships.

590 Special Topics in Entomology  
V 1-4 May be repeated for credit; cumulative maximum 10 hours. Graduate-level counterpart of Entom 490; additional requirements. Credit not granted for both Entom 490 and 590.

593 Seminar I  
1 May be repeated for credit. Prereq 20 hours biology. Reporting and discussing problems and research in entomology.

595 Noncropland Weed Biological Control Internship  
V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing, by interview only. Supervised individual practicum in noncropland weed biological control; professionally related field interaction. Cooperative course taught by WSU, open to UI students (Ent 595). S, F grading.

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

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

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

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

Description of Courses

Integrated Pest Management

IPM

201 Introduction to Pest Management in a Quality Environment  
2 Pest management to maximize plant protection and safeguard the quality of the environment.
PROGRAM (123 HOURS)

Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>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>
</tbody>
</table>

Second Semester

| Anth 101 [S] or Soc 101 [S] (GER) | 3     |
| Arts & Humanities [H,G] (GER)      | 3     |
| Chem 106 [P] (GER)                  | 4     |
| Econ 101 [S] (GER)                  | 3     |
| GenEd 110 [A] (GER)                 | 3     |

Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 201 [W], 301 [W], or 402 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 210</td>
<td>3</td>
</tr>
<tr>
<td>Phys 101 [P] or 201 [P] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

Second Semester

| Biol 104 [B] (GER)      | 4     |
| Chem 240 or 340 & 341   | 4 or 5 |
| GenEd 111 [A] or Geo 102 [P] (GER) | 3 or 4 |
| Phys 102 [P] or 202 [P] (GER) | 4     |

Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC/BP 364</td>
<td>3</td>
</tr>
<tr>
<td>ES/RP 335 [M]</td>
<td>3</td>
</tr>
<tr>
<td>GenCB 301 or Micro 301</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 111 [A] or SoilS 201 [B] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

| Complete Writing Portfolio |       |

Second Semester

| Anth 309 [K] (GER)² | 3     |
| Biol 372           | 4     |
| ES/RP 490         | 1     |
| Stat 212 [N] (GER) or 412 | 3 or 4 |
| Elective          | 3     |

Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 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>
</tr>
<tr>
<td>300-400-level Soc [S,K] (GER)³</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Second Semester

| 300-400-level Ag Ec or Econ³ | 3     |
| ES/RP 444                | 3     |
| Tier III Capstone (GER)   | 3     |
| Electives               | 6     |

² Or other 300-400-level Anth with [I] or [K] designation with advisor’s approval.
³ 1 hour of ES/RP 490, 492, or 493, Special Topics, is required.

### 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.

### Environmental Science and Regional Planning

#### ES/RP

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>130 [Q] Natural Science in the Environment</td>
<td>3 (2-3) Introduction to scientific principles and problem solving with applications to studies of the environment.</td>
</tr>
<tr>
<td>174 Introduction to Meteorology and the Atmospheric Environment</td>
<td>Same as C E 174.</td>
</tr>
<tr>
<td>210 Microcomputer Models of Environmental Systems</td>
<td>Introduction to using microcomputers to model environmental systems. Cooperative course taught by WSU, open to UI students (EnvS 210).</td>
</tr>
<tr>
<td>301 Forest and Range Plant Resources I</td>
<td>3 Same as NATRS 301.</td>
</tr>
<tr>
<td>311 Natural Resource Economics</td>
<td>3 Same as Ag Ec 311.</td>
</tr>
<tr>
<td>375 Aspects of Sustainable Development</td>
<td>3 Same as Econ 375.</td>
</tr>
<tr>
<td>385 GIS Primer</td>
<td>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.</td>
</tr>
<tr>
<td>402 Human Health and the Environment</td>
<td>Prereq Biol 103, 104, Chem 105, 106; ES/RP 335 or junior in ES/RP. Problem-solving approach to adverse effects on human health caused by contamination of environmental media or anthropogenic changes in ecosystems. Credit not granted for both ES/RP 402 and 502.</td>
</tr>
<tr>
<td>403 Environmental Geology</td>
<td>3 Same as Geol 403.</td>
</tr>
<tr>
<td>406 Introduction to Radiological Science</td>
<td>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.</td>
</tr>
<tr>
<td>409 Applied Radiological Physics</td>
<td>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.</td>
</tr>
<tr>
<td>411 Limnology</td>
<td>3 Same as Zool 411.</td>
</tr>
<tr>
<td>412 [M] Natural Resource Policy and Administration</td>
<td>3 (2-2) Same as NATRS 438.</td>
</tr>
<tr>
<td>414 Environmental Biophysics</td>
<td>2 Same as SoilS 414. Credit not granted for both ES/RP 414 and 514.</td>
</tr>
<tr>
<td>415 Environmental Biophysics Lab</td>
<td>1 (0-3) Same as SoilS 415.</td>
</tr>
<tr>
<td>416 Radiation Biology</td>
<td>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.</td>
</tr>
<tr>
<td>418 Human Issues in International Development</td>
<td>Same as Anth 418.</td>
</tr>
<tr>
<td>419 Fundamentals of Risk Assessment</td>
<td>2 Prereq Biol 103, 372; Math 107; Stat 412. Overview of risk assessment processes; identification of toxicological effects; introduction to methods used to quantify potential health and environmental risks.</td>
</tr>
</tbody>
</table>
Program in Environmental Science and Regional Planning

420 Field and Laboratory Techniques in Environmental Science 2 May be repeated for credit; maximum 6 hours. Prereq Biol 372; Chem 105. Fundamentals and hands-on experience on the use of field and laboratory techniques and instruments utilized in environmental science. Field trips required.

424 Environmental Health Assessment 2 Prereq one course each in biology, calculus, chemistry, general ecology and physics; Rec ES/RP 406. Environmental transport, fate and effects of radioactive and hazardous materials. Credit not granted for both ES/RP 424 and 524.

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 ES/RP 426 and 526.

427 Environmental Chemistry 2 Same as Chem 427. Credit not granted for both ES/RP 427 and 527.

428 Introduction to Pollution Prevention 3 Environmental, technical and legal aspects of pollution prevention. Cooperative course taught jointly by WSU and UI (EnvS 528).

429 Population Theory 1 Same as NATRS 429. Credit not granted for both ES/RP 429 and 529.

435 Resolving Environmental Conflicts 4 (3-3) Same as R S 435.

444 Environmental Assessment 3 Rec Biol 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 434).

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.

456 Environmental Psychology 3 Same as Psych 466.

470 Air Photos and Geomorphology 3 (2-3) Same as SoilS 474.

471 Meteorology 3 Same as C E 471. Credit not granted for both ES/RP 471 and 571.

472 Economic Development and Underdevelopment 3 Same as Econ 472.

473 Engineering Risk Assessment for Hazardous Waste Evaluations 3 Prereq senior standing; Rec stat course. Quantitative and qualitative approaches to assessing risks to public health and environment from chemical contaminants; toxicology, exposure assessment, risk characterization, and environmental modeling; critical reviews of specific toxins 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 402; 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).

513 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; creation and auditing of an EMS.

529 Population Theory 1 Same as NATRS 529.

532 Applied Environmental Toxicology 3 Prereq ES/ RP 531 or P/T 505. Overview of the field of environmental toxicology; interactions of xenobiotics with natural systems

534 Industrial Ecology: Theory and Practice 3 Complex relationships and interactions among industrial activities, the environment, and society and the need for a sustainable system.

538 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).

548 Environmental Law 3 By interview only. Environmental planning and protection, regulation of air and water pollution, waste disposal, use of pesticides and other toxic chemicals, and remedies for environmental injury. Cooperative course taught by UI (Law 947), open to WSU students.

549 Public Land Law 3 History of public lands, special problems arising from ownership of land by governments, legal issues incident various uses of public land including land sales, mineral extraction, livestock grazing, timber harvest, recreation, wildlife protection, and preservation. Cooperative course taught by UI (Law 948), open to WSU students.

550 System Dynamics Models of Environmental Systems 3 Prereq graduate standing. Analysis of environmental system dynamics; development and uses of simulation models using 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 452. Credit not granted for both ES/ RP 452 and 552.

553 Industrial Ecology 3 Same as Entom 553.

554 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 T oxicology 1 Same as Entom 558.

562 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/EP 471 and 571.
575 Geographic Information Systems 3 Prereq Geol 385. Computerized management of data organized on regional geographic bases; preparation overlay, coding, and manipulation of data for regional planners and land managers. Cooperative course taught by UI (Geog 475), open to WSU students.
584 Engineering Aspects of Aquatic Biology 4 (3-3) Same as C E 584.
585 Aquatic System Restoration 3 (2-3) Same as C E 585.
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 graduate career students. S, F grading.
597 Technical and Public Communications in Environmental Science 2 Prereq technical writing course; Rec public speaking course. Development of written and oral communication skills for practical application in the field of environmental science.
600 Special Projects or Independent Study Variable credit. S, F grading.
700 Master’s Research, Thesis, and/or Examination Variable credit. S, F grading.
702 Master’s Special Problems, Directed Study, and/or Examination Variable credit. S, F grading.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.

### Department of Fine Arts

**Professor and Department Chair:** P. Lee; **Professors:** R. Coates, J. Dollhausen, R. Helm, F. Ho, P. Siler, C. Watts; **Associate Professors:** A. Christenson, C. Ivory; **Assistant Professors:** E. Blair, P. Nguyen.

The Fine Arts Department offers a diversity of experiences in the visual arts. The department offers courses of study leading to the degrees of Bachelor of Arts in Fine Arts, Bachelor of Fine Arts and Master of Fine Arts. Our Bachelor of Arts and Bachelor of Fine Arts programs are designed to open doors into the world of visual expression and intellectual development. In particular, we encourage students to sample a variety of art disciplines and make an informed choice about their direction in art. The department includes some seven areas of emphasis within which to develop a program: drawing, painting, sculpture, printmaking, ceramics, photography, and electronic imaging. These are supported by a strong art historical 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

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

For the degree Bachelor of Arts in 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>Foundation</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>F A 103</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Art History</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>F A 201, 202, 303, 304</td>
<td>12</td>
</tr>
<tr>
<td>D A 110, 111, 312</td>
<td>9</td>
</tr>
<tr>
<td>F A 320</td>
<td>3</td>
</tr>
<tr>
<td>F A 350</td>
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</table>

<table>
<thead>
<tr>
<th>Contemporary Issues Seminar</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>F A 498</td>
<td>2</td>
</tr>
<tr>
<td>F A 943</td>
<td>2</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>F A 300-400-level electives (major emphasis)</td>
<td>18</td>
</tr>
<tr>
<td>F A 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>

#### Degree Program Requirements

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

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)**

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</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>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</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>
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<tr>
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</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th>Hours</th>
</tr>
</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>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>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</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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<table>
<thead>
<tr>
<th>Junior Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,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>
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<tr>
<td>Foreign Language, if necessary, or Electives</td>
<td>4</td>
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<tr>
<td>Science Elective (GER)</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>300-400-level F A Elective</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,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>
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<tr>
<td>Foreign Language, if necessary, or Electives</td>
<td>4</td>
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<td></td>
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<table>
<thead>
<tr>
<th>Senior Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></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>2</td>
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<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
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<tr>
<td>Electives</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</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.


308 [H] [M] Women Artists I, Middle Ages-1900 3 Survey of women artists from Middle Ages to the beginnings of modern art.

310 [H] [M] Women Artists II, Twentieth Century 3 Survey of women artists from the beginnings of modern art through the twentieth century.

403 [M] Modern Theories of Art 3 Selected topics in 19th and 20th century theories of art.

404 [M] Advanced Non-western Art History 3 May be repeated for credit; cumulative maximum 6 hours. Prereq F A 201, 202. Different topics related to the arts in Africa the Americas, Oceania, and Asia.

405 [M] Contemporary Art: Theory and Practice 3 Contemporary theories of art and how those theories are developed.

498 Contemporary Issues-Seminar 2 May be repeated for credit; cumulative maximum 4 hours. Prereq F A 304. Research seminar examining current issues confronting art and artists.

500 Graduate Art History 2 May be repeated for credit; cumulative maximum 6 hours. Prereq 9 hours undergraduate art history.

Studio Courses

Note: unless specified, media used in studio courses are at the option of the instructor.

Foundation

F A

102 Art I 3 (0-6) Introduction to studio practice and composition of form in two-dimensional space.

103 Art II 3 (0-6) Introduction to studio practice and composition of form in three-dimensional space.

Drawing

F A

110 Drawing 3 (0-6) Composition in pictorial space, visualization of ideas, drawing from life.

111 Figure Drawing 3 (0-6) Prereq F A 102, 103, 110.

312 Advanced Drawing 3 (0-6) May be repeated for credit. Prereq F A 110 or 111. Advanced projects using drawing media and process.

313 Figure Drawing 3 (0-6) May be repeated for credit. Prereq F A 111.

510 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

511 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

512 Graduate Drawing 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Painting

F A

320 Beginning Painting 3 (0-6) Prereq F A 102, 103, 110. Basic painting; introduction to composition and color structure.

321 Intermediate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 320.

322 Transparent Watercolor 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 103, 110.

323 Advanced Painting 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 321, major in F A.

520 Graduate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

521 Graduate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

522 Graduate Painting 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Electronic Imaging

F A

331 Art and Its Relationship to New Technologies 3 Introduction to visual communication through technology; historical overview and cultural implications of photography, film, video, and electronic art.

332 Introduction to Electronic Imaging 3 (0-6) Prereq F A 102, 103, 110, 331. Principles and processes of electronic image processing, image/text design and designing for the internet.

433 Digital Printing V 3 (0-6) May be repeated for credit. Prereq F A 331, 332. Vector-based drawing, advanced image processing and page layout techniques; emphasis on strengthening research and conceptual skills.

434 Multimedia and Web Design V 3 (0-6) May be repeated for credit. Prereq F A 331, 332. Emphasis on creating multimedia and worldwide web projects; dynamic HTML, CGI scripting, digital video, animation, and multimedia authoring.

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 102, 103, 110. Handbuilding processes; the potter’s wheel; glazing; firing.

341 Intermediate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 340.

442 Advanced Ceramics V 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 341.

540 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

541 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

542 Graduate Ceramics 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Sculpture

F A

350 Sculpture 3 (0-6) Prereq F A 103, 110. Composition of form in the three-dimensional space.

351 Intermediate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 350.
452 Advanced Sculpture V 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 351.

550 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

551 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

552 Graduate Sculpture 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Printmaking
F A
370 Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 102, 103, 110. Variety of techniques: screenprinting, etching and lithography; emphasis is given to screenprinting during particular term.

471 Advanced Printmaking V 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 370.

570 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

571 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

572 Graduate Printmaking 3 (0-6) May be repeated for credit; cumulative maximum 9 hours.

Photography
F A
380 Introduction to Photography 3 An experience with cameras and associate materials and techniques; photography in a historical and aesthetic context.

381 Beginning Photography 3 (0-6) Prereq F A 102, 103, 380. Camera and black/white film used in conjunction with studio and darkroom techniques; composition and aesthetic concepts introduced.

382 Intermediate Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq F A 381. Expansion of conceptual building in black/white darkroom and camera techniques; research and portfolio.

385 Digital Imaging/Color Photography 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Introduction to digital imaging software, digital cameras, scanning, and digital output options; conventional chemical-based color photography techniques.

483 Advanced Photography V 3 (0-6) or 6 (0-12) May be repeated for credit. Six credits only with permission of instructor. Prereq F A 382, major in F A. Advanced black/white darkroom and studio; research of historic and contemporary trends; 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.


498 Contemporary Issues Seminar 2 May be repeated for credit; cumulative maximum 4 hours. Prereq F A 304, F A major. Research seminar examining current issues confronting art and artists.

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

598 Graduate Seminar 2 May be repeated for credit; cumulative maximum 4 hours. Topics in contemporary issues, theory, and criticism.

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

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

Study Abroad
F A
210 Topics—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

306 Topics—Study Abroad 3

311 Topics—Study Abroad 3

314 Topics—Study Abroad 3

315 Topics—Study Abroad 3

318 Topics—Study Abroad 3

319 Topics—Study Abroad 3

Department of Food Science and Human Nutrition


The Department of Food Science and Human Nutrition offers courses of study in two undergraduate major fields, food science and dietetics with different options and areas of interests available in each field. Students enrolled in these options or areas of interests complete prescribed courses of study leading to the Bachelor of Science in Food Science and Human Nutrition. Further information may be found at http://avs.fshn.wsu.edu.

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 better than those of other professions at equivalent levels of training and experience.

The undergraduate food science curriculum closely follows the recommendations of the national professional organizations, 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 of interest, participating in internships with food companies, and/or conducting a special problems project with a faculty member.

Human Nutrition

The General Dietetics Option has been approved by the Commission on Accreditation for Dietetic Education programs. General Dietetics is the first step toward obtaining training in dietetics to prepare for work related to food and nutrition. By following the prescribed course of study of foods (nutrition and foodservice management based on chemistry, biochemistry, physiology and business), the student fulfills the minimum academic requirements of The American Dietetic Association (ADA) as well as those of the department and university. The student must gain post-baccalaureate supervised practice experience through a dietetic internship before becoming eligible for registration and ADA membership. Internships in hospitals or selected organizations are very competitive. Those completing the program of study for a Bachelor of Science degree and an internship are qualified for a variety of positions as members of a management team 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 (CUOGD) has been accredited by the Commission on Accreditation for Dietetic Education programs. CUOGD 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, and the
supervised practice requirements for Commission on Dietetic Registration and membership in the American Dietetic Association. After completing academic and performance requirements, it is necessary to pass a computerized registration examination. This examination may be taken as soon as eligibility is confirmed by the Commission on Dietetic Registration. Students successfully completing the examination become Registered Dietitians and are entitled to use the initials R.D. to indicate professional competence. Graduates of this option qualify for the same kinds of positions as do the graduates of the General Dietetics Option who complete a post-baccalaureate internship.

**Other Opportunities**

The department offers minors in food science, foods and nutrition, and food service management. In addition to undergraduate studies, the department offers courses of study leading to the 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).

### Degree Program Requirements

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

#### FOOD SCIENCE DEGREE PROGRAM (120 HOURS) **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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Ag Ed 350</td>
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<tr>
<td>FSHN 303</td>
<td>3</td>
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<tr>
<td>FSHN 416</td>
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<tr>
<td>FSHN 417</td>
<td>2</td>
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<tr>
<td>FSHN Commodity Course¹</td>
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<tr>
<td>Stat 212 [N] (GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts and Humanities [H,G] or</td>
<td></td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td>FSHN 422 or 450</td>
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<tr>
<td>FSHN Commodity Course¹</td>
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</tr>
<tr>
<td>FSHN 433</td>
<td>3</td>
</tr>
<tr>
<td>FSHN 434</td>
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<tr>
<td>Intercultural Studies [L,G,K] (GER)</td>
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**Sophomore Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>ComSt 102 [C] (GER)</td>
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<tr>
<td>Food Production Course²</td>
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<td>Phys 101 [P] (GER)</td>
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**Second Semester**

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>A S 314 or FSHN 233</td>
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<tr>
<td>BC/BP 364</td>
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<tr>
<td>FSHN 200</td>
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<tr>
<td>Micro 301</td>
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**Junior Year**

**First Semester**

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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
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<td>Ag Ed 350</td>
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<td>FSHN 416</td>
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<td>FSHN 417</td>
<td>2</td>
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<tr>
<td>FSHN Commodity Course¹</td>
<td>3</td>
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<tr>
<td>Stat 212 [N] (GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts and Humanities [H,G] or</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td>FSHN 422 or 450</td>
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<td>FSHN Commodity Course¹</td>
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<td>FSHN 433</td>
<td>3</td>
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<td>FSHN 434</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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**Senior Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 402 [W] (GER)</td>
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<tr>
<td>FSHN 460</td>
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<tr>
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<td>FSHN Commodity Course¹</td>
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<tr>
<td>Elective³</td>
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</tbody>
</table>

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, 311, 320, 321.

³Commodity courses are: FSHN 301, 302, 303, 304. Courses are taught alternate years.

**Suggested electives for areas of interest:**

- **Business/Marketing:** Acctg 230, 231, Ag Ed 360, B Law 210, Cpt S 405, Mgt 301, Psych 306.
- **Commodities:** Cereal: CropS 101, 201, 303; Dairy: A S 101; Fruit/vegetable: Hort 201, 311, 313, 320, 321, 418, 420; Meat: A S 101, 360; Wine (enology): Hort 313, 418, Micro 428.

**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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 101 [P] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] or 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)²</td>
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**Second Semester**

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>FSHN 201</td>
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<tr>
<td>FSHN 300</td>
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<tr>
<td>ESHN 350</td>
<td>3</td>
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<tr>
<td>ESHN 480</td>
<td>3</td>
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<tr>
<td>Statistics 212 [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
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</tbody>
</table>

²H D 205 is recommended.

³Math 205 is recommended.

**Sophomore Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Math 205</td>
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<tr>
<td>Other Opportunities</td>
<td></td>
</tr>
<tr>
<td>FYDA</td>
<td></td>
</tr>
</tbody>
</table>

**Suggested Electives:** Biol 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 students should consult the director for advice on applying and planning.
Department of Food Science and Human Nutrition

Freshman Year

First Semester  Hours
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  Hours
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  Hours
Acctg 230 3
Arts & Humanities [H,G] (GER) 3
Chem 240 4
FSHN 120 3
FSHN 121 1
Zool 251 4

Second Semester  Hours
Anth 309 [K] (GER) 3
BC/BP 364 4
FSHN 281 1
HA 359 4
Zool 315 4

Junior Year

First Semester  Hours
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  Hours
FSHN 380 3
FSHN 426 [M] 3
FSHN 430 3
FSHN 435 3
FSHN 437 1
FSHN 476 3

Senior Year

First Semester  Hours
FSHN 370 3
FSHN 477 8
FSHN 480 3
Star 212 [N] (GER) 3

Second Semester  Hours
FSHN 439 2
FSHN 440 3
FSHN 478 8
FSHN 485 2
Tier III Capstone (GER) 3

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).
201 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 Biol or Chem course; or Zool 251 or 315. Applying principles of chemistry, biology, and physiology to the study of nutrition emphasizing nutrient functions, nutrient requirements and impact of diet on health and disease.
281 Quality Food Production Laboratory 1 (0-3) Prereq FSHN 120, 121; c/f in H A 359. Recipe adjustment and costing; preparing and serving food in quantity.
301 Dairy Products 3 (2-3) 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 concepts of 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; FSHN 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 FSHN 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 FSHN 130 or 233; FSHN 120, 121. Dynamics of communication and counseling in nutritional care management and community nutrition in health and disease.
370 Food Laws and Quality 3 Food laws, industry standards and qualities of foods necessary for consumer acceptance; sanitation.
380 Management in Food Service Systems 3 Prereq FSHN 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 FSHN 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 psychological consequences, as well as preventive and therapeuetic interventions. Cooperative course taught by UI (FCS 405), open to WSU students.
410 Advanced Practice Skills in Dietetics 2 (1-3)
Prereq junior or senior standing in FSHN.
Analysis of dietetics supervised practice experience; development of application process; participation in community affairs; public policy and research in dietetics.

416 Food Microbiology 2 Prereq introductory microbiology. Purpose for enumeration, detection and identification of microorganisms in food products; physical, chemical and environmental factors influencing growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms in food and their control. Cooperative course taught by UI (FST and MMBB 416), open to WSU students.

417 Food Microbiology Laboratory 2 (0-6) Prereq c// in FSHN 416. Methods of enumeration, detection and identification of spoilage and pathogenic microorganisms in foods. Cooperative course taught by UI (FST and MMBB 417), open to WSU students.

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 FSHN 330, 331; Rec FSHN 436. Needs assessment, planning, and evaluation in community nutrition programs. Cooperative course taught jointly by WSU and UI (FCS 473).

427 Nutritional Assessment 1 (0-3) Rec FSHN 233, senior standing. Basic skills and concepts for determining nutritional status of adult and juvenile diets, intake, dietary standards, anthropomet- ric and biochemical measures.

430 Human Nutrition, Intermediary Metabolism 3 Prereq BC/BP 364, FSHN 330, Zoel 231. Biochemical roles of nutrients and processes of intermediary metabolism affecting man's need for food; integration of biochemical pathways of major and minor nutrients; important nutritional diseases and controversies.

433 [M] Agricultural Processing 3 Same as AgTM 433.

434 Agricultural Processing Lab 1 (0-3) Same as AgTM 434.

435 Medical Nutrition Therapy 3 Prereq FSHN 430 or c//. Nutrition principles applied to pathological conditions in people.

436 Nutrition Education 4 (3-2) Prereq FSHN 130 or 233. Guidelines and skills necessary for developing, planning, implementing, and evaluating nutrition education programs and materials.

437 Medical Nutrition Therapy Laboratory 1 (0-3) Prereq c// in FSHN 435. Nutritional care planning; modified diets; nutritional assessment and dietary analysis in clinical care settings.

438 Readings in Foods and Nutrition 2 Prereq FSHN 480 or c//. Reports, discussions and reviews of recent scientific literature and developments in foods and food systems management. Credit not granted for both FSHN 438 and 538.

439 Current Topics in Nutrition 2 Prereq FSHN 430. Analysis of scientific, popular and legisla- tive articles pertaining to topics of current interest in nutrition. Credit not granted for both FSHN 439 and 539.

440 Advanced Medical Nutrition Therapy 3 By interview only. Advanced nutrition principles applied to pathological conditions in humans and principles of participation in delivery of nutritional care.

444 [T] Applied Nutrition in Health Science 3 Prereq biology, chemistry, sociology/psychology; completion of one Tier I and three Tier II courses.
Application of current nutrition topics to community and clinical settings, integrating social science principles for individuals and groups.

450 Food Fermentations 3 (2-3) Prereq Chem 240, 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 FSHN 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 FSHN 460 or c//. Experiments related to the properties, reactions, and interactions of chemical components of foods. Cooperative course taught by WSU, open to UI students (FST 461).

462 Food Analysis 4 (2-6) Prereq microbiology, organic chemistry. Introductory food analysis; methods common to many food commodities. Cooperative course taught by WSU, open to UI students (FST 462).

470 Advanced Food Technology 3 Prereq FSHN 416, 433 or c//. Physical properties of food preservation and recent advances in food technology. Credit not granted for both FSHN 470 and 570. Cooperative course taught by WSU, open to UI students (FST 470).

475 Supervised Practice in Dietetics I 3 (0-9) By interview only. Students in CUOGD programs receive supervised practical experience each semester during the junior years.

476 Supervised Practice in Dietetics II 3 (0-9) Prereq FSHN 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 FSHN 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 programs receive supervised practical experience each semester during the junior and senior years.

480 Management in Food Service Systems I 3 Prereq FSHN 380. Management theories, communication, financial planning, and equipment in food service systems.

485 Clinical Experience in Food Service Systems 2 (1-3) By interview only. Experience in food systems management in clinical settings.

495 Internship in Food Science and Human Nutrition 2 May be repeated for credit; cumulative maximum 4 hours. Prereq sophomore standing. Students work full time in industrial assignments with prior approval of advisor and industrial supervisor. S, F grading.

498 Food Practicum V 1 (0-3) to 8 (0-24) May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart FSHN 401; additional requirements. Credit not granted for both FSHN 498 and 501.

504 Advanced Human Nutrition 4 Prereq graduate standing. Scientific basis of human nutrient requirements, dietary allowances and assessment techniques. Cooperative course taught by WSU, open to UI students (FCS 514).

507 Advanced Nutrient Metabolism 2 Same as A S 507.

508 Seminar Written 2 May be repeated for credit. Planning, writing, reporting, reviewing and evaluating current food-related research.

509 Seminar Oral 1 May be repeated for credit. Development of skills and communication tools and techniques for oral presentations of current food science and human nutrition research.

510 Advanced Food Chemistry 3 Rec biochemistry, food chemistry. Chemical, physical, and toxicological properties of water, vitamins, pigments, synthetic colors, minerals, miscellaneous food additives, and natural toxicants. Cooperative course taught by WSU, open to UI students (FST 510).

511 Food Carbohydrates, and Lypids 3 Rec biochemistry, food chemistry. Occurrence, structure, chemical and physical properties; and functions of carbohydrates and lipids, in foods. Cooperative course taught by WSU, open to UI students (FST 512).

512 Food Proteins and Enzymes 2 Prereq biochemistry, food chemistry (FSHN 460). Chemistry/biochemistry of proteins/enzymes applied to food research and industry; protein functionality/enzyme technology application to food industry. Cooperative course taught by WSU, open to UI students (FST 513).

513 Mineral and Vitamin Metabolism 4 Same as A S 513.

520 Research Methods in Behavioral Nutrition 3 Prereq FSHN 130 or 233; Rec FSHN 426 or 436; statistics course. The application of behavioral theories and qualitative/quantitative methods of data collection to behavioral nutrition research. Cooperative course taught by WSU, open to UI students (FCS 520).

521 Research Techniques in Nutrition 3 (1-6) Rec 6 hours 300-400-level nutrition. Methods of conducting field, applied and metabolic studies in human nutrition.

522 Food Quality Evaluation 3 (2-3) Prereq 300-400-level statistics course. Advanced studies of psychophysical testing sensory and instrumental analysis of foods and multivariate statistical analysis of sensory data. Cooperative course taught by UI (FST 522), open to WSU students.

526 Advanced Community Nutrition 3 Rec 300-400-level nutrition course; by interview only. Components of community nutrition programs - needs assessment, planning, intervention, evaluation; application of concepts to case studies. Cooperative course taught by WSU, open to UI students (FCS 526).


531 Nutrition and Aging 2 Rec 300-400-level nutrition course; by interview only. Assessment, evaluation, and treatment of nutritional problems of the aged.
533 Pathophysiology of Human Nutrition 3
Rec BC/BS 364, FSHN 435; Zool 353. Protein, fat, carbohydrate and other nutrient pathophysiology in the development and treatment of major human diseases.

538 Readings in Foods and Nutrition 2 Graduate-level counterpart of FSHN 436; additional requirements. Credit not granted for both FSHN 438 and 538.

539 Current Topics in Nutrition 2 Graduate-level counterpart of FSHN 439; additional requirements. Credit not granted for both FSHN 439 and 539.

550 Food Fermentations 3 (2-3) Graduate-level counterpart of FSHN 450; additional requirements. 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. Macronutrient and selected micronutrient utilization during exercise and restoration after feeding, dietary surveys of athletes, dietary ergogenic aids and discussion of the origins of dietary recommendations for athletes. Cooperative course taught by UI (FCS 561), open to WSU students.

570 Advanced Food Technology 3 Graduate-level counterpart of FSHN 470; additional requirements. Credit not granted for both FSHN 470 and 570. Cooperative course taught by WSU, open to UI students (FST 570).

575 Supervised Practice 2 V 2-18 May be repeated for credit; cumulative maximum 18 hours. Rec by interview only. Professional supervised experience in administrative, clinical, and community dietetics; meets American Dietetic Association requirements for registration eligibility. S, F grading.

583 Advances in Cereal Science and Technology 2 Prereq BC/BS 364. Background information, 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 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 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, S. Hokanson, F. Manzo-Robledo; Professors Emeritus, H. C. Kim.

Knowledge of languages in addition to English is essential in the modern world of rapid communication, international business, and multinational ventures in science and technology. The Department of Foreign Languages and Literatures helps 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 without 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 language; (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, visual, and computer-mediated materials are available.

Recognizing the need for students to reinforce in a practical way knowledge gained in the classroom, the department sponsors a wide variety of supplementary activities. The Maison Française, a living group where only French is spoken and where conversational activities are supervised by a resident native speaker, is open to students of sophomore standing and above. Visiting lecturers, foreign film showings, and other cultural events supplement the classroom experience.

The department offers courses of study leading to the degrees of Bachelor of Arts in Foreign Languages and Literatures (French, German, Russian, and Spanish) and Master of Arts in Foreign Languages and Literatures (Spanish).

**Degree Program Requirements**

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

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

A minimum of 30-36 hours beyond the 203 level (or the equivalent level in competence) in the major language is required for a Bachelor of Arts degree in Foreign Languages and Literatures. 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.

**Freshmen 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>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>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fren 102, if necessary, or Elective¹</td>
</tr>
<tr>
<td>Fren 315, 316, or 416</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
</tr>
</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>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
</tr>
<tr>
<td>Biological [B] Sciences (GER)</td>
</tr>
<tr>
<td>Fren 304</td>
</tr>
<tr>
<td>Elective¹</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,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>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
</tr>
<tr>
<td>Fren 308 [M] or 408 [M]</td>
</tr>
<tr>
<td>Fren 322</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
</tr>
<tr>
<td>Elective¹</td>
</tr>
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</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>
<td>2</td>
</tr>
<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>Elective¹</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>One from: Fren 306, 310, 407, or 408</td>
</tr>
<tr>
<td>One from: Fren 420, 421, 422, 423, 424, 425, or 427</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
</tr>
<tr>
<td>Electives¹</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.
### GERMAN DEGREE PROGRAM (121 HOURS)

**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>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GerEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Ger 101, if necessary, or Elective</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
</tr>
<tr>
<td>GerEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Ger 102, if necessary, or Elective</td>
</tr>
<tr>
<td>Science Elective [B,P] (GER)</td>
</tr>
</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts, &amp; Humanities, Intercultural, or Social Sciences [H,G,LS,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Ger 203</td>
<td>4</td>
</tr>
<tr>
<td>Ger 315</td>
<td>3</td>
</tr>
<tr>
<td>Physical [P] Sciences (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
</tr>
<tr>
<td>Ger 304</td>
</tr>
<tr>
<td>Ger 317</td>
</tr>
<tr>
<td>Elective</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,LS,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Ger 310 or 312</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ger 305</td>
</tr>
<tr>
<td>Ger 310 or 312</td>
</tr>
<tr>
<td>One from: Ger 422, 423, 424, 425, 426, or 427 [M]</td>
</tr>
<tr>
<td>Social Science [S,K] (GER)</td>
</tr>
<tr>
<td>Electives</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>3</td>
</tr>
<tr>
<td>Ger 320</td>
<td>3</td>
</tr>
<tr>
<td>One from: Ger 422, 423, 424, 425, 426, or 427 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ger 407 or 412</td>
</tr>
<tr>
<td>One from: Ger 422, 423, 424, 425, 426, or 427 [M]</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
</tr>
<tr>
<td>Electives</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.

### RUSSIAN AREA STUDIES DEGREE PROGRAM (120 HOURS)

**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>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GerEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Rus 101</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
</tr>
<tr>
<td>GerEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Science Elective [B,P] (GER)</td>
</tr>
</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,LS,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Ger 317 or Elective</td>
<td>3</td>
</tr>
<tr>
<td>Rus 315 or Elective</td>
<td>3</td>
</tr>
<tr>
<td>Rus 323 or 360</td>
<td>3</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,LS,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>One from: Rus 461, 462, 463, 465, 466; Pol S 412 or Rus 430</td>
<td>3</td>
</tr>
<tr>
<td>Rus 307 or 311 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Russian Area Elective</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>One from: Rus 461, 462, 463, 465, 466; Pol S 412 or Rus 430</td>
</tr>
<tr>
<td>Rus 307 or 311 [M]</td>
</tr>
<tr>
<td>Russian Area Elective</td>
</tr>
<tr>
<td>Elective</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</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>3</td>
</tr>
<tr>
<td>Russian Area Elective</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

1 The language summer course at Far Eastern State University Vladivostock (6 credits) is another possibility.

### SPANISH DEGREE PROGRAM (120 HOURS)

**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>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GerEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Span 101, if necessary, or Elective</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
</tr>
<tr>
<td>GerEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
</tr>
<tr>
<td>Span 102, if necessary, or Elective</td>
</tr>
</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological [B] Sciences (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Span 203, if necessary, or Elective</td>
<td>4</td>
</tr>
<tr>
<td>Spanish Electives</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
</tr>
<tr>
<td>Spanish Electives</td>
</tr>
<tr>
<td>Electives</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,LS,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Spanish Electives</td>
<td>5</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td></td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish Elective</td>
</tr>
<tr>
<td>Electives</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>3</td>
</tr>
<tr>
<td>Spanish Electives</td>
<td>3</td>
</tr>
<tr>
<td>Spanish Literature Elective</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>7</td>
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</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish Literature Elective</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
</tr>
<tr>
<td>Electives</td>
</tr>
</tbody>
</table>

1 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 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 beyond the 304-level is required. At least 6 of these hours must be in the target language, and at least 3 of the target language hours must...
be taken on a WSU campus. Fren 305, 306, Span 323, 324 may not be included in the minor. Upper-division courses taken pass, fail may not be included for credit toward the minor. No course may be repeated for credit toward the minor. No course may count for both the major and the minor.

Minor in Danish

The student must earn a minimum of 16 total hours in the language area, which may include credit for advanced standing or transfer credit of courses through 304. Six hours of the course work in the language area above the 304 level must be taken in residence. These 6 hours must include at least 3 credit hours in the target language. Upper-division courses (300 and above) graded pass, fail may not be included for credit toward the minor. Since advanced courses in Danish is taught under For L 300, the student is required to obtain written certification from the instructor that 6 hours of course work is above the 304 level.

Minor in French Area Studies

Both options in the minor require a minimum of 23 credit hours, chosen according to the following schedule of studies.


Minor in German Area Studies

The minor in German Area Studies requires 18 hours, at least 9 of which must be 300-400-level including Ger 310 or 312, 317, Hist 468; 9 credits from: Hist 386, 449, 450, 453, 454, Pol S 472 (in courses covering a broader geographical area than Germany, Austria and Switzerland, the student is expected to ask the professor for a German Area Studies topic for the semester project or term paper); a student paper on German Area Studies-related topic (it may be a paper from one of the above courses) submitted to the German Area Studies faculty. (Also strongly recommended: Hist 102).

Minor in Japanese Studies

The minor in Japanese Studies requires 22 hours: 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; CAC 151, 255, 354; CropS 360; Econ 470, 472; Hist 230, 231, 331, 430, 432, 433, 434; Pol S 413, 435; Span 323, 416, 434, 435.

Minor in Russian Area Studies

The minor in Russian Area Studies requires 20 hours, at least 8 of which must be 300-400-level. Option 1: Russia through the 19th Century; Hist 462; 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 coursework 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).1

340 Methods of Teaching Foreign Languages 3 Prereq two years foreign language. Survey of current methodology with emphasis on practical application in the classroom.

350 [S] Speech, Thought, and Culture 3 Same as Anth 350.

400 Special Topics 3 May be repeated for credit; cumulative maximum 6 hours. Prereq GenEd 110 or 111. Interdisciplinary study of foreign languages, literature, or culture.

422 [T] 20th-Century Issues in German and Latin American Film and Literature 3 Prereq completion of one Tier I and three Tier II courses. Comparison of film adaptations with their literary inspirations to give students an understanding of how cultures respond to contemporary conditions.

444 Instructional Technology for Foreign Language Learning 3 Prereq For L 340. The use of technology in the foreign language classroom; hands-on experience with equipment and multimedia materials. Credit not granted for both For L 444 and 544.

450 Descriptive Linguistics I 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.

579 Seminar in Scholarly Methodology 2 Bibliography and formal aspects of scholarly writing; general introduction to literary criticism.

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

Chinese

Chin

101 First Semester 4 (3-2) Fundamentals of speaking, reading, and writing. Cooperative course taught by WSU, open to UI students (Chin 101).1

102 Second Semester 4 (3-2) Prereq Chin 101. Continuation of Chin 101. Cooperative course taught by WSU, open to UI students (Chin 102).

203 (303) Third Semester 4 (3-2) Prereq Chin 102. Further development of speaking, reading, and writing skills. Cooperative course taught by WSU, open to UI students (Chin 201).1

307 Spoken Chinese 3 Prereq Chin 304. Course provides students with intensive practice in oral and listening skills. Taught mainly in Chinese.

Classics

Clas

101 Beginning Latin 4 For students who have had no Latin or who need a review course before taking advanced work.


103 Latin and Greek for Sciences 2 Latin and Greek roots for students of science, medicine, horticulture, etc.

341 Elementary Greek 4 Pronunciation, vocabulary, reading, and functional grammar. Cooperative course taught by UI (Grek 341), open to WSU students.

342 Elementary Greek 4 Pronunciation, vocabulary, reading, and functional grammar. Cooperative course taught by UI (Grek 342), open to WSU students.

349 Greek Language Lab 1 May be repeated for credit; cumulative maximum 2 hours. Basic skills. S, F grading. Cooperative course taught by UI (Grek 349), open to WSU students.

365 Survey of Latin Literature 3 From early Latin to the Middle Ages. Cooperative course taught by UI (Lati 365), open to WSU students.

1Not open to native speakers except with permission. Bilingual speakers should consult departmental guidelines for proper placement.
366 Survey of Latin Literature 3 From early Latin to the Middle Ages. Cooperative course taught by UI (Latn 366), open to WSU students.
369 Latin Language Lab 1 May be repeated for credit; cumulative maximum 2 hours. Prereq permission. Advanced-level expressive skills. S, F grading. Cooperative course taught by UI (Latn 369), open to WSU students.
404 Special Topics 1 May be repeated for credit; cumulative maximum 3 hours. Cooperative course taught by UI (Latn 404), open to WSU students.
411 Intermediate Greek 4 Readings in classical Greek prose and poetry. Cooperative course taught by UI (Latn 411), open to WSU students.
412 Intermediate Greek 4 Readings in classical Greek prose and poetry. Cooperative course taught by UI (Latn 442), open to WSU students.
461 Latin Literature of the Augustan Age 3 Cooperative course taught by UI (Latn 461), open to WSU students.
462 Latin Literature of the Augustan Age 3 Cooperative course taught by UI (Latn 463), open to WSU students.
463 Latin Literature of the Republic 3 Cooperative course taught by UI (Latn 464), open to WSU students.
464 Latin Literature of the Republic 3 Cooperative course taught by UI (Latn 464), open to WSU students.
465 Latin Literature of the Silver Age 3 Cooperative course taught by UI (FL/LA 465), open to WSU students.
466 Latin Literature of the Silver Age 3 Cooperative course taught by UI (FL/LA 466), open to WSU students.

French

Fren

101 First Semester 4 (3-2) Fundamentals of speaking, reading, and writing. Credit not granted for Fren 101, 102, and 104.1
102 Second Semester 4 (3-2) Prereq Fren 101. Continued development of basic skills in speaking, reading, and writing. Credit not granted for Fren 101, 102, and 104.1
104 Intensive French: Foundations of Language and Culture 4 Intensive first-year French, emphasizing reading, writing, oral expression and comprehension, cultural awareness. Serves as a prerequisite for Fren 203. Credit not granted for Fren 101, 102, and 104.1
203 Third Semester 4 (3-2) Prereq Fren 102. Grammar review and further development of speaking, reading, and writing skills.1
304 Intermediate 4 (3-2) Prereq Fren 203. Continued practice in spoken and written language; selected texts in a cultural context.1
305 Conversation 1 (0-3) May be repeated for credit; cumulative maximum 4 hours. Prereq Fren 304. Conversation practice in small groups.1
306 French for Reading Proficiency 3 Prereq Fren 304 or equivalent. Vocabulary building, contrastive English-French grammar, development of skills to increase reading speed and fluency.
307 Speaking Proficiency 3 Prereq Fren 304. Systematic development of speaking.1
308 [M] Composition 3 Prereq Fren 304. Systematic practice in writing.1
310 French for the Professions 3 Prereq Fren 304. Cooperative course in French for professional purposes; telephone and meeting role-plays, letter-writing, television, discussions of current events in the Francophone world.
315 [H] French Civilization and Culture 3 Cultural history of France from beginnings to present; comparison of French and American cultures; taught in English.
316 [I] French Civilization and the Francophone World 3 Study of relationship between France and its former colonies from a global perspective; complements Fren 315, readings, lectures, and discussions in English.
318 Topics in French Civilization—Study Abroad 3 Prereq Fren 304. Reading course shifting emphasis from language to literature in a cultural context.
327 Special Topics—Study Abroad 3 407 Advanced Practice in Speaking Proficiency 3 Prereq Fren 307. Development of oral skills on the advanced level, including delivery of brief formal presentations involving specialized vocabulary.1
409 Pronunciation and Phonetics 2 Prereq Fren 307 or 308. A theoretical and practical approach to French phonetics.
416 Seminar in French Civilization 3 Prereq Fren 307, 308, 320 or 322. May be repeated for credit; cumulative maximum 6 hours.
418 Topics in French Civilization—Study Abroad V 1-4.
424 French Literature of the 19th Century 3 Prereq Fren 320 or 322. Authors and works from the Romantic, Realist, Naturalist, and Symbolist Schools.
425 French Literature of the 20th Century 3 Prereq Fren 320 or 322. Authors and works from the pre-WW1, pre-WWII, post-war, and contemporaneous periods.
427 Seminar in French Language or Literature 3 May be repeated for credit. Prereq Fren 320 or 322.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.

German

Ger

101 First Semester 4 (3-2) Fundamentals of speaking, reading, and writing.1
102 Second Semester 4 (3-2) Prereq Ger 101. Continued development of basic skills in speaking, reading, and writing. Prereq Ger 101, 102, and 104.1
104 Intensive German: Foundations of Language and Culture 4 Intensive first-year German, emphasizing reading, writing, oral expression and comprehension, cultural awareness. Serves as a prerequisite for Ger 203. Credit not granted for Ger 101, 102, and 104.1
203 Third Semester 4 (3-2) Prereq Ger 102. Grammar review and further development of speaking, reading, and writing skills.1
304 Intermediate 4 (3-2) Prereq Ger 203. Continued practice in spoken and written language; selected texts in a cultural context.1
305 Conversation 1 (0-3) May be repeated for credit; cumulative maximum 4 hours. Prereq Ger 304. Conversation practice in small groups.1
306 German for Reading Proficiency 3 Prereq Ger 304 or equivalent. Vocabulary building, contrastive English-German grammar, development of skills to increase reading speed and fluency.
307 Speaking Proficiency 3 Prereq Ger 304. Systematic development of speaking.1
308 [M] Composition 3 Prereq Ger 304. Systematic practice in writing.1
310 German for the Professions 3 Prereq Ger 304. Cooperative course in German for professional purposes; telephone and meeting role-plays, letter-writing, television, discussions of current events in the Germanophone world.
315 [H] Germanic Civilization and Culture 3 The cultural development of the Germanic peoples to 1750; readings, lectures, and discussions in English.
317 [S] Contemporary German Culture and Society 3 Lectures, readings, and discussions in English; current social, political, economic, and cultural trends in Germany.
318 Topics in German Civilization Study Abroad 3 Prereq Ger 304. Credit not granted for Ger 201, open to WSU students.1
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, Junge Deutschland and the early Realists.
425 [M] German Literature of the Late 19th Century 3 Prereq Ger 320 or 322. Dramatic, lyric and prose texts of the Realists and the Naturalists.
426 [M] 20th Century German Studies: Topics 3 Prereq Ger 310, 312, or 320. Dramatic, lyric and prose texts of the Impressionists, Expressionists, and Dadaists.
427 Seminar in German Language or Literature 3 May be repeated for credit. Prereq Ger 320 or 322.
499 Special Problems V 1-4 May be repeated for credit. S, F grading.

Italian

Ital

101 First Semester—Study Abroad V 3-6 Introductory Italian. (Siena)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 3 May be repeated for credit; cumulative maximum 6 hours. (Siena).

Japanese

Japn

101 First Semester 5 (4-3) Fundamentals of speaking, reading, and writing. Cooperative course taught by UI (Japn 101), open to WSU students.1
102 Second Semester 5 (4-3) Prereq Japn 101. Continuation of Japn 101. Cooperative course taught by UI (Japn 102), open to WSU students.1
203 (303) Third Semester 5 (4-3) Prereq Japn 102 Conversation and reading of selected texts. Cooperative course taught by UI (Japn 201), open to WSU students.1
304 Intermediate 5 (4-3) Prereq Japn 303. Continued practice in spoken and written language; selected texts in a cultural context. Cooperative course taught by UI (Japn 202), open to WSU students.
318 Topics in Japanese—Study Abroad V 1-12 Prereq Japn 203.

1Not open to native speakers except with permission. Bilingual speakers should consult departmental guidelines for proper placement.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>First Semester Danish 4 Introduction to Danish; fundamentals of speaking, reading, and writing. Cooperative course taught by WSU, open to UI students (Scand 101).</td>
</tr>
<tr>
<td>202</td>
<td>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).</td>
</tr>
<tr>
<td>211</td>
<td>[M] Seminar in Russian Language 3 Prereq Rus 102. May be repeated for credit; cumulative maximum 6 hours. Special topics and projects in Russian language. Taught in Russian. Cooperative course taught by WSU, open to UI students (Rus 304).</td>
</tr>
<tr>
<td>215</td>
<td>Russian Civilization 3 Russian culture to 1917; readings, lectures, and discussions in English.</td>
</tr>
<tr>
<td>217</td>
<td>[G] Contemporary Russian Culture and Society 3 Readings, lectures, and discussions in English; current cultural and social trends in the former USSR.</td>
</tr>
<tr>
<td>218</td>
<td>Topics in Russian Study Abroad V 4-12 Prereq Rus 307. Topics and language study abroad in Russia.</td>
</tr>
<tr>
<td>223</td>
<td>[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.</td>
</tr>
<tr>
<td>230</td>
<td>[M] 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).</td>
</tr>
<tr>
<td>250</td>
<td>Reading and discussion of representative works of the specifically American period. S, F grading.</td>
</tr>
<tr>
<td>251</td>
<td>Spanish Literature of the 19th Century 3 Prereq Span 320. Drama, poetry, the short story, the comic artist, and novel in 19th-century Spanish literature.</td>
</tr>
<tr>
<td>252</td>
<td>Spanish Literature of the 20th Century 3 Prereq Span 320. Reading and discussion of representative works by 20th-century Spanish American writers.</td>
</tr>
<tr>
<td>253</td>
<td>Seminar in Spanish Language or Literature 3 May be repeated for credit; Prereq Span 320.</td>
</tr>
<tr>
<td>254</td>
<td>Advanced Spanish—Study Abroad V 1-12 Equivalent to Span 311, 407, 408.</td>
</tr>
<tr>
<td>255</td>
<td>Spanish American Literature of the 19th Century 3 Prereq Span 320. Reading and discussion of representative works by Spanish American writers of the 19th century.</td>
</tr>
<tr>
<td>256</td>
<td>Spanish American Literature of the 20th Century 3 Prereq Span 320. Reading and discussion of representative works by Spanish American writers of the 20th century.</td>
</tr>
<tr>
<td>257</td>
<td>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.</td>
</tr>
<tr>
<td>258</td>
<td>Special Problems V 1-4 May be repeated for credit. S, F grading.</td>
</tr>
<tr>
<td>259</td>
<td>Advanced Composition and Grammar Review 3 Prereq Span 308. Advanced writing practice in the language and continued review of grammatical rules.</td>
</tr>
<tr>
<td>260</td>
<td>Spanish Literature of the 19th Century 3 Prereq Span 320. Drama, poetry, the short story, the comic artist, and novel in 19th-century Spanish literature.</td>
</tr>
<tr>
<td>261</td>
<td>Latin American Film 3 History of Latin American cinema from a cultural perspective. Taught in English.</td>
</tr>
<tr>
<td>264</td>
<td>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.</td>
</tr>
<tr>
<td>265</td>
<td>Advanced Speaking Proficiency 3 Prereq Span 307. Systematic development of oral skills on the advanced level, including delivery of brief formal presentations involving specialized vocabulary.</td>
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<td>Spanish Literature of the 19th Century 3 Prereq Span 320. Drama, poetry, the short story, the comic artist, and novel in 19th-century Spanish literature.</td>
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</tr>
<tr>
<td>274</td>
<td>Special Problems V 1-4 May be repeated for credit. S, F grading.</td>
</tr>
<tr>
<td>275</td>
<td>Medieval Literature 3 Selected works.</td>
</tr>
<tr>
<td>276</td>
<td>Cervantes 3 Quixote plus selected critical works.</td>
</tr>
<tr>
<td>277</td>
<td>Seminar in Golden Age Literature 3 Reading and discussion of representative works of the Spanish Golden Age.</td>
</tr>
<tr>
<td>278</td>
<td>Topos in Nineteenth-Century Spanish Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Selected works and topics.</td>
</tr>
<tr>
<td>279</td>
<td>Topos in Twentieth-Century Spanish Literature 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Selected works and topics.</td>
</tr>
<tr>
<td>280</td>
<td>Seminar in Spanish Literature 3 May be repeated for credit.</td>
</tr>
<tr>
<td>281</td>
<td>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.</td>
</tr>
<tr>
<td>282</td>
<td>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.</td>
</tr>
<tr>
<td>283</td>
<td>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.</td>
</tr>
<tr>
<td>284</td>
<td>Seminar in Spanish American Literature 3 May be repeated for credit.</td>
</tr>
<tr>
<td>285</td>
<td>Beginning Instructional Practice 2 Prereq graduate standing. An introduction to foreign language instruction for beginning teaching assistants.</td>
</tr>
<tr>
<td>286</td>
<td>Advanced Instructional Practice 1 May be repeated for credit; cumulative maximum 4 hours. Supervised practical experience in foreign language teaching. S, F grading.</td>
</tr>
<tr>
<td>287</td>
<td>Research and Methods of Teaching Foreign Languages 3 Prereq graduate standing. Current research and theory-based methods in foreign language pedagogy.</td>
</tr>
</tbody>
</table>
Degree Program Requirements

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

Biological, Mathematical, and Physical Sciences

**B. Lentz, Coordinator**

This division of general studies is for students who are interested in interdisciplinary programs in science or mathematics which offer broader options in course selections than are possible within single departments. Students who wish to earn a Bachelor of Science degree will devise an approved, coherent program of study with the coordinator 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**

Major concentration: a minimum of 24 semester credits, including at least 15 300-400-level credits, must be completed in biological sciences, in mathematics or in a single physical science with a minimum 2.00 major concentration g.p.a. Students who complete one of the above major concentrations will receive a Bachelor of Science degree with a major concentration in general biological sciences (Gen B), general mathematics (Gen M) or general physical sciences (Gen P).

Minor concentration: a minimum of 15 semester credits, including at least 6 300-400-level credits, must be completed in another academic department, program or area published in the catalog with a minimum 2.0 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, genetics and cell biology, microbiology, zoology and approved biology-based courses in agriculture. Students who complete a Plan B curriculum receive a Bachelor of Science degree with a major concentration in general biological sciences (Gen B).

**Plan C—Three Related Areas in Physical Sciences**

A combination of physical sciences and mathematics courses of at least 39 credits in three or more departments or programs including at least 9 credits in each department or program and 21 300-400-level hours must be completed with at least a 2.0 g.p.a. in these courses. The related areas in 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 receive a Bachelor of Science degree with a major concentration in general physical sciences (Gen P).

Prerequisite Courses

**General Biological Sciences (Gen B):** One year biology, one semester introductory calculus, one year general chemistry, and one semester organic chemistry.

**General Physical Sciences (Gen P):** One year calculus, one year calculus-based physics, and one year general chemistry. (Students who plan a major concentration in chemistry should also include quantitative and organic chemistry. Physical geology is a prerequisite for 300-400-level geology courses.)

**General Mathematics (Gen M):** Three semesters of calculus and linear algebra.

Classical Studies

**R. S. Williams, Coordinator**

The classical studies option is designed for students who wish to obtain a broad understanding of the ancient Greek and Roman foundation of modern western civilization. Greek and Latin language study is an important part of the program in order to aid comprehension of classical thought, literature, and history. This major should be of great value for students contemplating careers in medicine, law, and business or graduate work in history, archaeology, or literature. It is not suitable for those who wish to teach Latin or Greek or enter graduate school in classics unless additional language study is undertaken.

The approach is interdisciplinary and flexible to allow students to pursue varied interests within a broad field. Students who major in classical studies will earn a Bachelor of Arts in Humanities degree.

**GENERAL STUDIES CLASSIC STUDIES DEGREE PROGRAM (120 HOURS)**

Each student must complete (1) the General Education Requirements and any additional requirements of the College of Sciences and Arts, (2) 120 semester hours which include 40 or more at the 300-400 level, (3) a second year (or its equivalent) of Greek or Latin language, which may be completed at the University of Idaho.

**Freshman Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Eng 101 [W]</td>
<td>GER</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A]</td>
<td>GER</td>
<td>3</td>
</tr>
<tr>
<td>Math Proficiency [N]</td>
<td>GER</td>
<td>3</td>
</tr>
<tr>
<td>Science Elective (GER)</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>
<td>Biological Sciences [B]</td>
<td>GER</td>
<td>4</td>
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<tr>
<td>Clas 101 or 341</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td></td>
<td>3</td>
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<tr>
<td>F A 201 [H]</td>
<td>GER</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A]</td>
<td>GER</td>
<td>3</td>
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</table>

**Sophomore Year**

**First Semester**

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<tr>
<th>Course Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>Clas Language Elective1</td>
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<td>4</td>
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<tr>
<td>Hum 101 [H]</td>
<td>GER</td>
<td>3</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td></td>
<td>3</td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clas Language Elective1</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Hist 341 [H] (GER)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Hum 103 [H] (GER)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
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 2.0 g.p.a. in these courses. Students will major in general humanities (Gen H) and will receive a Bachelor of Arts in Humanities.

Plan C—Three Related Areas in Social Sciences

A combination of social sciences courses of at least 39 credits involving three or more academic departments or programs, with a minimum of 9 credits in each of the three areas including at least 21 300-400-level credits with at least a 2.0 g.p.a. in these courses. Students will major in general social sciences (Gen S) and will receive a Bachelor of Arts in Social Sciences.

Electronic Media and Culture

B. Condon (Pullman), and T. Hunt (Vancouver), Coordinators

Electronic Media and Culture (EMC) is an option within General Studies that provides an interdisciplinary course of study leading to the BA in Humanities. The Electronic Media and Culture BA in Humanities aims to enable students:

- to acquire a historically grounded understanding of the role of computing and computers as media for communication and sites for human interaction;
- to develop intellectual tools to investigate the nature and implications of computer-mediated communications of all kinds;
- to develop an understanding of hypermedia and multimedia rhetorics;
- to develop the ability to compose for computer-based environments (DVD, web pages, etc.) both individually and as a team leader with collaborators in design, writing, and computing whose skills complement one’s own expertise;
- to understand how computing is transforming the nature of information; how information is accessed; and how knowledge is constructed, represented, stored, transmitted, and used; and
- to master the tools of electronic research and the skills of analysis, synthesis, extrapolation, organization, and symbolic translations needed to construct and apply knowledge.

The EMC curriculum draws on investigations in such areas as language and culture (anthropology, writing, the history and theory of rhetoric, linguistics); cognition and learning (psychology, linguistics, education); language and society (anthropology, sociology, rhetoric, communications, political science); and visual communications (fine arts); and information science. This program addresses a growing regional and national need for trained information technology (IT) and multimedia professionals, prepared for careers in information design and management, electronic publishing and research, educational technology, etc.

The EMC option emphasizes the following skills and sophistications:

- The competence to analyze end-user needs and preferences and apply them to the development of process

Course of Study (39 credits):

The EMC program can be completed in the junior and senior years, in part to better accommodate transfer students and students who discover their academic direction only after a year or two of college study. While several lower division courses (noted below) are recommended and can be counted in the program, all specifically required courses are upper division courses. The required 39 credits are a composed of a “core” of 20 credits, a “concentration” of at least 12 additional credits, and a senior capstone in the major (as distinct from the General Education capstone) of at least 3 credits.

GENERAL STUDIES ELECTRONIC MEDIA AND CULTURE DEGREE PROGRAM (120 HOURS)

Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<tr>
<td>Science Elective (GER)</td>
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Second Semester

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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Biological Sciences [B] (GER)</td>
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<td>F A 110</td>
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Sophomore Year

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<td>Engl 300</td>
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<tr>
<td>Engl 304</td>
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<tr>
<td>Liberal Arts [H,G,S,K,I] (GER)</td>
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<tr>
<td>Liberal Sciences [S,K] (GER)</td>
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<td>Elective</td>
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Second Semester

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<th>Hours</th>
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<tr>
<td>Engl 300</td>
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<td>Engl 301 or F A 332</td>
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Junior Year

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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>EMC Core</td>
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<tr>
<td>Engl 301 or F A 332</td>
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<td>Electives</td>
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<tr>
<td>Complete Writing Portfolio</td>
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Second Semester

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<td>Engl 355</td>
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Senior Year

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<td>EMC Concentration</td>
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<tr>
<td>Electives</td>
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</tbody>
</table>

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.
Second Semester  
EMC Concentration\(^1\) 3
Senior Seminar, Senior Thesis, or Internship 3
Tier III Capstone (GER) 3
Electives 6

\(^1\) Students are encouraged to take an introductory Fine Arts course and introductory Computer Science course. Up to 6 credits of such course work can be counted toward the 39 credits required in Electronic Media and Culture.

\(^2\) Students are expected to take three of the following as part of the “Core” in Electronic Media and Culture: Engl 338, Anth 355, Com 420, FA A 331, Psych 301.

\(^3\) Students are expected to complete an appropriate (as determined by the student's faculty advisor) “Concentration” of at least 12 upper-division credits in one of the following areas or a combination of two of them: "Language, Technology, and Culture"; "Hyper/multimedia Rhetoric and Composing"; and "Electronic Research and Knowledge Management."

International Area Studies

B. Frederick, Coordinator.

The International Area Studies area of General Studies is for students who have interests that are both international and interdisciplinary. Students may choose between these major concentrations: Latin America Area Studies, German Area Studies, French and Francophone Area Studies, and European Area Studies. (Please note that Asian Area Studies and Russian Area Studies majors are described elsewhere in this catalog).

Students who wish to earn a Bachelor of Arts in International Area Studies will devise an approved, coherent program of study with the coordinator and a designated advisor who is a specialist in the student’s area of interest. The program of study must fulfill an academic or career goal, include prerequisites consistent with the 300-400-level major coursework, satisfy the GER requirements and any additional requirements for the College of Liberal Arts, and include language proficiencies appropriate to the cultural area. The area studies major will consist of a minimum of 40 credits. No course in which C- or lower is earned will be counted toward the major. More details are available on the websites of WSU, the General Studies program, and the Foreign Languages Department.

Liberal Arts

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.

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

Second Semester  
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Communication Proficiency [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Linguistics Elective\(^1\) 3

Sophomore Year

First Semester  
Linguistics Elective\(^1\) 3
Math, Cpt S, or Stat Elective\(^2\) 3
Physical Sciences [P] (GER) 4
Social Sciences [S,K] (GER) 3
Elective 3

Second Semester  
Arts & Humanities [H,G] (GER) 3
Linguistics Elective\(^1\) 6
Phil Elective\(^2\) 3
Elective 3

Junior Year

First Semester  
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Linguistics Elective\(^1\) 3
300-level Foreign Language Elective\(^4\) 3
Emphasis Elective\(^5\) 3
Elective 3

Complete Writing Portfolio

Second Semester  
Intercultural [L,G,K] (GER) 3
Linguistics Elective\(^1\) 3
300-level Foreign Language Elective\(^4\) 3
Emphasis Elective\(^5\) 3
Elective 3

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.

Senior Year

First Semester  
Linguistics Elective\(^1\) 3
300-400-level Electives 12

Second Semester  
GenEd 111 [A] (GER) 3
300-400-level Electives 12

\(^1\) Students must take 21 hours or more, including at least one historical course: Anh 350, 450, 499, Engl 256, 354, 458, 499.

\(^2\) Students must take 3-12 hours depending upon special emphasis: Cpt S 150, 450; Math 107, 171, 172, 205, 212; Stat 360.

\(^3\) Students must take 3-12 hours depending upon emphasis: Phil 201, 401, 410.

\(^4\) Students must take 6-18 hours depending on special emphasis. The 6-hour minimum, if elected, must be at the 300-level or higher.

\(^5\) 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 Elective (GER) 4

Second Semester  
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Communication Proficiency [C,W] (GER) 3

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See School of Molecular Biosciences.

GENETICS AND CELL BIOLOGY


Geology is the study of the Earth, its composition, structure, origin and evolution. Virtually every aspect of modern life is in some way dependent on the science of geology. For example it is the geologist’s job to discover new reserves of energy and raw materials, evaluate groundwater quality and quantity for drinking water supply, assess geologic hazards in land-use planning and unravel the mechanisms of continental drift and biological evolution.

Both general and advanced training is offered in most specializations in geology. The lower-division courses are designed to provide a strong foundation for those who major in geology as well as a stimulating introduction to earth science for the non-major. The 300-400-level courses provide training for professional geological work as well as preparation for postgraduate study.

The department has modern teaching facilities and special equipment, including an electron microprobe, X-ray diffraction and fluorescence instrumentation, inductively coupled plasma mass spectrometer, dioxine extraction lines and isotope mass spectrometer, gas chromatographs and carbon analyzers, drilling rig, groundwater field demonstration site, transmitted and reflected light microscopes. There are active research programs in igneous petrology, geochemistry and mineralogy, structural geology and tectonics, economic geology, groundwater and contaminant hydrology, sedimentology and stratigraphy.

The department offers courses of study leading to the degrees of Bachelor of Science in Geology, Master of Science in Geology, and Doctor of Philosophy (Geology).

Degree Program Requirements

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

Candidates for a B.S. degree in geology follow the curriculum outlined below. A minimum of 120 semester hours of credit is required for graduation, including a minimum of 40 semester hours of credit in 300-400-level course work with a 2.0 minimum g.p.a. overall and in the major.

GEOLOGY DEGREE PROGRAM

(FRESHMAN YEAR)

First Semester
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 111 [A] (GER) 3
Geol 101 [P] or 102 [P] (GER) 4
Math 107, if necessary 4

Second Semester
Chem 106 [P] (GER) 4
ComSt 102 [C] (GER) 3

(SOPHOMORE YEAR)

First Semester
GenEd 111 [A] (GER) 3
Math 140 [N] or 171 [N] (GER) 4

Second Semester
Geol 210 [P] (GER) 3
Geol 350 [M] 4
Geol 351 1
Math 172, Cpt S 150, or Stat 414 4
Phys 101 [P] or 201 [P] (GER) 4

JUNIOR YEAR

First Semester
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Geol 356 3
Phys 102 [P] or 202 [P] (GER) 4

Second Semester
Arts & Humanities [H,G] (GER) 3
Social Sciences [S,K] (GER) 3
Complete Writing Portfolio

(Senior Year)

First Semester
Foreign Language, if necessary 4
Geology Electives 6
Elective 3

Second Semester
Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) 3
Econ 102 [S] (GER) 3
Geol 340 [M] 4
Geol 362 2
Elective 3

Year 3, Summer Session: Geol 308 [M] 6

1 B or better required; if less than a B, Engl 402 is required.
2 C or better required.

Honors Students

A senior thesis or enrollment in Geol 499 is required.

Minor in Geology

A student with 90 semester hours may certify a minor. A minor requires a minimum of 16 semester hours of letter-graded geology coursework, half of which must be in 300-400-level course work. A minimum 2.0 g.p.a. in geology minor course work is required.

Preparation for Graduate Study

As preparation for work toward an advanced degree in geology, a student should have completed, or plan to take without graduate credit, the following or their equivalents: Geol 102, 210, 340, 350, 308, 310, 320, 355, 356, 362; one year of general physics; one year of general inorganic chemistry; mathematics through one semester of calculus.
Description of Courses

Geology

101 [P] Introduction to Geology 4 (3-3) Introductory physical geology for non-science majors; emphasis on western U.S. Credit not granted for more than one of Geol 101, 102, 180.

102 [P] Physical Geology 4 (3-3) For science majors and honors students. Modern concepts of earth science; mineral rock, resource, and map study. Field trip required. Credit not granted for more than one of Geol 101, 102, 180.

103 The Solar System 3 Overview of the results of modern planetary exploration, geological processes and environments on planets and moons in our solar system. Field trip required.

150 [Q] Conflict and Debate in Geological Sciences 4 (3-3) Examples in geology of how science is done, how it advances, and what constitutes scientific work. Field trip required.

180 [P] Honors Geology 4 (3-3) Prereq honors student or by interest of fossil inference to physical geology with emphasis on original research and scientific writing. Credit not granted for more than one of Geol 101, 102, 180. Field trip required.

201 Geology of the National Parks 2 Prereq Geol 210. Significant geologic features, processes, and geologic history of the national parks. Field trip optional.

206 Field Petrology 3 (2-3) Prereq Geol 101 or 102. Hand sample analysis, petrogenesis and field relations of rocks. Field trips required.

210 [P] Evolution and Earth History 3 (2-3) Prereq Geol 101 or 102; Rec Biol 102. History and development of the Earth’s physical features and its inhabitants. Field trip required.

221 Field Trip 1 (0-3) May be repeated for credit. Prereq Geol 210. One-week field trip to study geology of a selected area of the western United States. S, F grading.

260 Quantitative Concepts in Geology 2 (1-3) Prereq Chem 105; Geol 350 or c//; Math 107 or c//; Phys 101 or 201. Basic mathematical tools and physical principles for geologic problem solving. Field trip required.

300 Vertebrate Paleontology and Evolution 3 Prereq Geol 210. Vertebrate evolution with focus on dinosaurs including origins, physiology, behavior, and relationships.

308 [M] Geology Field Camp 6 (0-18) Prereq junior standing; Geol 340, 350. Detailed geologic mapping of an area; practice in methods of geologic field work. Cooperative course taught jointly by WSU and UI (Geol 401).

310 Invertebrate Paleontology 3 (2-3) Prereq Geol 210. Invertebrate evolution with focus on fossils including origins, physiology, behavior, and relationships.

315 Water and the Earth 3 (2-3) Prereq Chem 106 and Geol 101; or 260; Math 140, 171, or c//; Phys 102 or 202. Global hydrologic cycle, including rivers and weathering, groundwater, rainwater and the atmosphere, oceans, human impacts. Field research required.


322 [P] Geology of the Pacific Northwest 3 Prereq Geol 101 or 102. Physical geology of the Pacific Northwest, focusing on geological processes important in its evolution. Field trips required. Credit not granted for both Geol 322 and 323.

323 [P] Geology of the Pacific Northwest 4 (3-3) Prereq Geol 101 or 102. Physical geology of the Pacific Northwest focusing on geological processes important to its evolution. Field trips required. Credit not granted for both Geol 322 and 323.


350 [M] Mineralogy and Crystallography 4 (2-6) Prereq Chem 101 or 105; Geol 101 or 102. Composition, physical properties, structure, crystallography, identification, and origin of minerals. Field trip required.

351 (355) Optical Mineralogy 1 Prereq c// in Geol 350 or by permission. Elements of optical crystallography as applied to identification of minerals.

356 Igneous Petrology 3 (2-3) Prereq c// in Geol 351. Origin, evolution, and eruption of magmas; emphasizes mineralogy, textures, chemical composition, and physical form of igneous rock. Field trip required.

362 Metamorphic Petrology 2 (1-3) Prereq Geol 356. Mineralogy and petrology of metamorphic rocks using the polarizing microscope. Field trip required.

390 [P] Living on the Edge: Global Climate Change and Earth History 3 Prereq junior standing. Global earth system; ocean, earth, atmosphere, biosphere, and cryosphere; human impact on the climate system; climate change data predictions; debates.

403 Environmental Geology 3 Prereq Geol 101 or 102. Geologic hazards and geologic problems associated with human activities. Optional field trip.

405 Geophysics 4 (3-3) Prereq Geol 340. Theory and application of geophysical methods for hydrology, environmental, engineering, exploration, and structural geology; review of techniques. Credit not granted for both Geol 405 and 505.


426 Geological Engineering Principles 3 Prereq 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 (Geol/EE 453), open to WSU students.

428 Geostatistics 3 Same as Stat 428. Cooperative course taught by UI (Geol/Stat 428), open to WSU students.

444 Seismic Hazard Analysis 3 Prereq Geol 101, Phys 101. Examines the geology of earthquakes from the mechanics of failure to seismic waves to seismology associated with all variety of fault types in a variety of tectonic settings. Cooperative course taught by UI (Geol 444), open to WSU students.

450 Pedology 3 (2-3) Same as Soils 451. Cooperative course taught by UI (Geol/Soil 451), open to WSU students.


475 Groundwater 2 (2-3) Prereq C E 317; or Geol 315; or all of the following four courses: Chem 106; Geol 101; Math 140 or 172; and Phys 101 or 202. Introduction to groundwater occurrence, movement, quality, and resource management, emphasizing physical and biogeochemical principles. Field trip required.

480 Introductory Geochemistry 3 Prereq Chem 106, Geol 350. The chemistry of Earth materials and processes.

483 Radiogenic Isotopes and Geochronology 3 Chem 105 and 106 or equivalent; Geol 480 or by permission. Radiogenic isotopes and their uses as chronometers (radiometric dating) and as tracers of earth evolution and differentiation. Cooperative course taught jointly, open to UI students (Geol 483).

491 Remote Sensing and Geologic Applications 3 (2-3) Prereq 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. Prereq major in Geol or related field. Research papers presented by students, faculty, and visiting scientists on geological research. S, F grading.

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

506 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 Prereq Geol 310, 320. Advanced problems and new techniques in paleontology from current literature. Cooperative course taught by WSU, open to UI students (Geol 511).

515 Paleocology 3 Ecologic dynamics as applied to the paleontologic record; preservation constraints; animal-sediment interactions; organisms’ role in the relative time scale. Field trip required. Cooperative course taught by UI (Geol 515), open to WSU students.

520 Advanced Topics in Sedimentary Rocks 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq Geol 320. Modern aspects of sedimentary rocks. Cooperative course taught by WSU, open to UI students (Geol 520). Field trip required.

521 Clastic Depositional Systems 3 (2-3) Prereq Geol 320. Clastic sedimentary environments; architectural elements and facies analysis. Cooperative course taught by WSU, open to UI students (Geol 528). Field trip required.

523 Advanced Topics in Stratigraphy 3 May be repeated for credit. Prereq Geol 421. Cooperative course taught by WSU, open to UI students (Geol 523).

525 Carbonate Depositional Systems 3 (2-3) Prereq Geol 320. Modern carbonate environments and processes; ancient carbonate rock sequences; carbonate platform-to-basin transition; diagenesis of carbonate rocks. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 529).

526 Geological Engineering Principles 3 Prereq graduate standing. Graduate-level counterpart of Geol 426; additional requirements. Credit not granted for both Geol 426 and 526.
527 Sedimentary Petrography 3 (1-4) Description and classification of sedimentary rocks in thin sections and hand specimens. Field trip required. Cooperative course taught by UI (Geol 527), open to WSU students.

528 Petrology of Carbonate Rocks 3 (2-3) Prereq Geol 320. Origin, classification distribution, depositional environments, and diagenesis of modern and ancient carbonates; emphasis on petrographic analysis. Field trip required. Cooperative course taught by UI (Geol 526), open to WSU students.

529 Geologic Development of North America 3 Prereq Geol 310, 421. Tectonic, magnetic, and sedimentary sequence studies of North American continent through time; concepts of metal and petroleum enrichment related to time and geological processes. Field trip required. Cooperative course taught by UI (Geol 532), open to WSU students.

540 Tectonics 3 Prereq Geol 340. Nature and origin of the Earth's major tectonic features. Cooperative course taught by WSU, open to UI students (Geol 548).

541 Structural Analysis 3 (2-3) Prereq Geol 340. Structural analysis of complexly deformed rocks in orogenic belts. Field trip required. Cooperative course taught by WSU, open to UI students (Geol 541).

546 Fault Mechanics 3 Prereq Geol 340 or equivalent. Examination of fault mechanics; internal fault architectures; fault slip distributions; relationship to rock properties; echelon fault systems, as well as earthquake behavior and seismic hazard recognition. Field trip required. Cooperative course taught by UI (Geol 546), open to WSU students.

550 Advanced Mineralogy 3 Prereq Chem 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.

552 X-ray Analysis in Geology 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.

554 Physical Petrology 3 Prereq Geol 356. The applications of continuum mechanics and fluid dynamics to the generation, rise, storage, and eruption of mass magmas. Cooperative course taught by UI (Geol 554), open to WSU students.

557 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 metallic 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 3 (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).

573 Advanced Topics in Economic Geology 2 May be repeated for credit. Prereq Geol 470. Ore-forming process or deposit type combining literature synthesis, theoretical evaluation and field trip inspection. Cooperative course taught by WSU, open to UI students (Geol 573). Field trip required.

574 Advanced Remote Sensing 3 (1-4) Same as SoilS 574.

575 Seminar in Remote Sensing 1 Same as SoilS 575.

577 Advanced Groundwater Hydraulics 3 Same as C.E. 577.

579 Groundwater Geochemistry V 2-4 May be repeated for credit; cumulative maximum 4 hours. Prereq Chem 331, Geol 475. Organic and inorganic aqueous geochemistry; controls on groundwater contaminant fate. Cooperative course taught by WSU, open to UI students (Hydro 566).

582 Petrologic Phase Equilibria 3 Prereq graduate standing. Thermodynamic and graphical analysis of phase equilibria in igneous and metamorphic rock systems.

583 Radiogenic Isotopes and Geochronology 3 Graduate-level counterpart of Geol 483; additional requirements. Credit not granted for both Geol 483 and 583. Cooperative course taught jointly, open to UI students (Geol 483).

584 Stable Isotope Geochemistry 3 Principles and applications of isotope geochemistry in the geological sciences.

588 Isotope Geology 4 Prereq Geol 480. Geologically useful radioactive isotopes; geochronology and isotopes as tracers. Cooperative course taught by UI (Geol 588), open to WSU students.

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).

594 Advanced Topics in Geology V 1-4 May be repeated for credit; cumulative maximum 6 hours. Topics of current interest in geology.

598 Graduate Seminar 1 May be repeated for credit; cumulative maximum 4 hours. Prereq graduate student in Geol or related field. Papers presented by students, faculty, and visiting scientists on geological research. S, F grading.

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

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

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

800 Doctoral Research, Dissertations, 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

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

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
- 300-400-level Electives 6
- Tier III Capstone (GER) 3

Second Semester
- Biological [B] or Physical [P] Sciences (GER) 4
- Communication Proficiency [C,W] (GER) 3
- GenEd 111 [A] (GER) 3
- Intercultural [I,G,K] (GER) 3
- Social Sciences [S,K] (GER) 3

Sophomore Year

First Semester
- 100-200-level Hist Electives 6
- Arts & Humanities [H,G] (GER) or Social Sciences [H,G,L,S,K] (GER) 6
- Biological [B] or Physical [P] Sciences (GER) 4

Second Semester
- 100-200-level Degree Program Course 3
- 300-400-level Hist Electives 6
- Foreign Language, if necessary, or Elective 3 or 4

Junior Year

First Semester
- 100-200-level Degree Program Course 3
- 300-400-level Hist Electives 6
- Foreign Language, if necessary, or Elective 3 or 4
- Hist 300 or Hist Elective (any level) 3
- Complete Writing Portfolio

Second Semester
- 300-400-level Degree Program Course 3
- 300-400-level Hist Elective 3
- 300-400-level Electives 6
- Hist 300 3

Senior Year

First Semester
- 300-400-level Hist Electives 6
- 300-400-level Degree Program Course 3
- 300-400-level Electives 6

Second Semester
- Hist 469 3

300-400-level Electives 6
Tier III Capstone (GER) 3

1 History Electives must include 6 hours US history, 6 hours European history, and 9 hours Non-Western/Global history.

2 Courses in the same or in related disciplines with the advisor’s approval; students are encouraged to explore, in consultation with their advisor, a double-major or strong minor in a complementary subject field.

SOCIAL STUDIES 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 certification must apply for admission to the 4-12 Initial 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

First Semester
- Anth 101 [S] or Hist 101 [H] (GER) 3
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Math Proficiency [N] (GER) 3 or 4
- Science Elective (GER) 4

Second Semester
- Biological [B] or Physical [P] Sciences (GER) 4
- CAC 101 [I], 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
- Soc 101 [S] or Hist 102 [H] (GER) 3

Sophomore Year

First Semester
- Biological [B] or Physical [P] Sciences (GER) 4
- Econ 101 [S] or 102 [S] (GER) 3
- Hist 101 [H] or Anth 101 [S] (GER) 3
- Hist 110 [S] (GER) 3
- Pol S 101 [S] or Psych 105 [S] (GER) 3

Second Semester
- Engl 201 [W], 301 [W], or 302 [W] (GER) 3 or 4
- Hist 102 or Soc 101 [S] (GER) 3
- Hist 111 [S] (GER) 3
- Hist 230, 231, 270, 272, 273, or 275 3
- Pol S 101 [S] or Psych 105 [S] (GER) 3

Junior Year

First Semester
- 300-400-level Hist Elective 3
- 300-400-level Social Studies Elective 3
- Foreign Language, if necessary, or Elective 3

Second Semester
- T & L 415 16
- T & L 450 2
- Electives 9-12

Senior Year

First Semester
- Hist 480 3
- Tier III Capstone (GER) 3
- T & L 404 3
- Elective 3

Second Semester
- Hist 402 3
- T & L 301 3

Fifth Year
- T & L 415 16

1 If student elects W St 200, the [I] GER requirement remains to be fulfilled.
2 Students may elect to use these credits toward an additional certification area.
3 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.

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
- Science Elective (GER) 4

Second Semester
- Biological [B] or Physical [P] Sciences (GER) 4
- CAC 101 [I], 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
- Soc 101 [S] or Hist 102 [H] (GER) 3

Junior Year

First Semester
- 300-400-level Hist Elective 3
- 300-400-level Social Studies Elective 3
- Foreign Language, if necessary, or Elective 3

Second Semester
- T & L 300 1
- T & L 328 2

Fifth Year
- T & L 415 16

1 Students may elect to use these credits toward an additional certification area.
2 Approved seminar may double for 3 credits of either History or Social Studies electives.

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Hist 101 3
Hist 110 3
Pol S 101 [S] or Psych 105 [S] (GER) 3

Second Semester

Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Hist 102 3
Hist 111 3
Hist 230, 231, 270, 272, 273, or 275 3
Supporting Endorsement1 3

Junior Year

First Semester

300-400-level Hist Electives 6
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Hist 300 3
Supporting Endorsement2 3
T & L 300 1
Complete Writing Portfolio

Second Semester

300-400-level Hist Elective or Hist 300 3
Hist 422 3
Supporting Endorsement2 3
T & L 415 16
T & L 450 2
EdPsy 402 2

First Semester Hours

Hist 480 3
300-400-level Hist Elective 3
Hist 469 3
Supporting Endorsement2 3
T & L 303 3
T & L 317 3
T & L 328 2

Second Semester Hours

300-400-level Hist Elective 3
Hist 480 3
Supporting Endorsement2 3
Tier III Capstone (GER) 3
T & L 404 3

Fifth Year

First Semester

EdPsy 402 2
Supporting Endorsement or Electives2 3
T & L 450 2
Elective 3

Second Semester

T & L 415 16

1 If student elects W St 200, the [I] GER requirement remains to be fulfilled.
2 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 study.

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.

Hist 110 [S] American History to 1877 3 Social, economic, cultural history of British mainland colonies/United States to 1877.

Hist 111 [S] American History Since 1877 3 Social, economic, cultural history of United States, 1877 to present.

Hist 150 [S] [D] Peoples of the United States 3 Examination of the peoples of the United States from the beginnings of the colonial era to the present.

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

Hist 201 [K] Asian/Pacific American History 3 Same as CAC 211.

Hist 205 [H] [D] African American History 3 Same as CAC 235.

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

Hist 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.

Hist 231 [K] Latin America, The National Period 3 Inves- tigation of broad themes, individual national histories, and United States policy in Latin America over the past two centuries.

Hist 255 [S] [D] Chica/o History 3 Same as CAC 255.

Hist 270 [K] India: History and Culture 3 Development of civilization; and contemporary societies of India and South Asia.

Hist 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.

Hist 273 [G] Foundations of Islamic Civilization 3 Main ideas and institutions that have characterized Islamic civilization since its founding, presented thematically.

Hist 275 [K] Introduction to East Asian Culture 3 Civilizations of China and Japan.

Hist 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.

Hist 299 Model United Nations 1 May be repeated for credit; cumulative maximum 8 hours. Provides students with background of United Nations and prepares them to participate in the Model U.N. conference during spring semester in New York. Cooperative course taught by UI (IS 200/400), open to WSU students.


Hist 306 [K] Cultures and Peoples of the Middle East 3 Same as Anth 306.

Hist 308 [K] North American Indian History, Precontact to Present 3 History of North American Indian peoples from circa 1350 to present.

Hist 313 [S] Civil Rights Movement in America 3 Same as CAC 335.

Hist 314 [H] [D] American Roots: Immigration, Migration, and Ethnic Identity 3 An analysis of immigration to migration within the U.S. including political and social consequences and the experiences of ethnic groups since the early nineteenth century.

Hist 320 [S] [M] American Agriculture and Rural Life 3 Same as Ag Ec 320.

Hist 321 (424) [H] [D] U.S. Popular Culture, 1800 to 1930 3 Sports, early movies and radio, vaudeville, minstrel shows, circuses, Wild West shows, music, and other popular arts in historical context.

Hist 322 [H] [D] U.S. Popular Culture Since 1930 3 Movies, radio, television, sports, music, and other popular arts in historical context.

Hist 325 [S] [D] Food in the United States 3 Acceptance, preparation, and acquisition of particular foods reveals the ethnic, cultural, and gender differences of peoples in the U. S.

Hist 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.

Hist 335 [K] Women in Latin American History 3 Survey of women’s changing roles throughout Latin America from precolonial to present.

Hist 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.

Hist 340 [H] Ancient Greece 3 History and culture of the preChristian Greek civilization.

Hist 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.

Hist 342 [H] History of England to 1485 3 English his- tory; intellectual and cultural development.

Hist 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.

Hist 345 Topics in History Study Abroad 3 May be re- peated for credit; cumulative maximum 6 hours.

Hist 348 History of Scandinavia 3 A history of Scandinavia from earliest historical times to the present.

Hist 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.

Hist 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.

Hist 351 Modern European Women’s History, Since 1800 3 Explores the experience of European women and cultural ideals about gender from a historical perspective.

Hist 370 [G] Civilization of Classical India 3 Aspects of arts, literature, music, mythology, philosophy, and religion of India to A.D. 1000, treated in historical and cultural context.
373 [G] Chinese Civilization 3 Growth of Chinese civilization from the dawn of history to the present.


380 [S] History of Medicine 3 Medicine in English-speaking societies, Middle Ages to present; development of medical care as a social institution.

381 [S] Science in Western Civilization Through Newton 3 Development of Western science and its influence on European culture and society.

382 [S] Science in Western Civilization from Newton to Einstein 3 Development of modern science and its influence on Western culture and society.

386 World War II in Europe 3 Causes for war; military operations; economic mobilization; social and cultural change; occupation and resistance; the Holocaust; the legacy of the war.

387 World War II in Asia and the Pacific 3 Imperial rivalries in Asia; Japanese militarism; military, ideological and social aspects of the war; the atomic bomb; memory of the war.

388 US and Vietnam 3 Course and consequences of US involvement in Indo-China, focusing on the causes and conduct of the US Vietnam conflict from 1945 to the present.

395 Topics in History 3 May be repeated for credit; cumulative maximum 6 hours. Analytical study of selected historical movements and events.

398 [H] [D] History of Women in the American West 3 The multicultural history of women in the west through women's literature, archives, and oral history.

400 History in Media 3 Representation of historical people and events through different media e.g., text, film, video, and computers.

408 [T] [D] Indians of the Northwest 3 Same as CAC 475.

409 [S] American Environmental History 3 Prereq completion of one Tier I and three Tier II courses. A history of environmental change, ideas of nature, natural resource development, conservation policies, science and environmental policy.

411 American Diplomatic History, 1776-1914 3 Policies and principles characteristic of American diplomacy from 1776 to 1914. Credit not granted for both Hist 411 and 511.

412 American Diplomatic History in the 20th Century 3 Credit not granted for both Hist 412 and 512.

413 [M] Early American History to 1750 3 The cultures and interactions of Native Americans, Europeans, and Africans; development of colonial American societies and institutions.

414 The Era of the American Revolution 3 The origins of the American Revolution, the War of Independence, and the emergence of republican government and society.

415 Jeffersonian-Jacksonian America 3 Social and political history of the United States from 1789 to 1845; Jeffersonian and Jacksonian eras. Credit not granted for both Hist 415 and 515.

416 Civil War and Reconstruction 3 The Civil War as a problem in historical causation and social, political, and economic impact of the war. Credit not granted for both Hist 416 and 516.

417 Rise of Modern America 3 Response to industrialism in the Gilded Age and the reform movements of Populism and Progressivism. Credit not granted for both Hist 417 and 517.

418 United States, 1845-1945 5 America through World War I, cultural tensions of the Twenties, and the crises of Depression and WWII. Credit not granted for both Hist 418 and 518.

419 United States, 1945-Present 3 International and domestic impact of the Cold War, era of McCarthyism, American aspirations, tensions and conflicts in the post-industrial era. Credit not granted for both Hist 419 and 519.

420 American Constitutional History 3 Prereq Hist 110 or Pol S 101. Credit not granted for both Hist 420 and 520.

421 The American West 3 Multicultural evolution of the frontier experience and western America; environment, economic development, gender, class and race emphasized. Credit not granted for both Hist 421 and 521.

422 History of the Pacific Northwest 3 Fullfills the teaching certification requirement in state history and government in Washington and other Pacific Northwest states. Credit not granted for both Hist 422 and 522.

423 Radicals, Reformers, and Romantics: The Impact 3 Changing thought and its impact in the United States from colonial times to the present. Credit not granted for both Hist 423 and 523.

425 [I] The City in History 3 Prereq completion of one Tier I and three Tier II courses. Description and comparison of the city through history in European and non-Western cultures.

427 [M] Public History: Theory and Methodology 3 An introduction to the broad range of non-traditional careers in history. Credit not granted for both Hist 427 and 527.

430 [M] History of Mexico 3 War of independence, 19th century Mexico and the liberal-conservative struggle; modern Mexico since the Revolution of 1910. Credit not granted for both Hist 430 and 530.

432 20th Century Latin America 3 Contemporary developments, policies and trends in the Latin American states. Credit not granted for both Hist 432 and 532.

433 History of Cuba and the Caribbean 3 Historical development of the Caribbean, with emphasis on Cuba, from the Spanish arrival to Castro's revolution. Credit not granted for both Hist 433 and 533.

434 History of Central America 3 Social and political development in Central America; reasons for dictators and radical social changes. Credit not granted for both Hist 434 and 534.

435 [T] European Expansion Overseas, 1400-1800 3 Prereq completion of one Tier I and three Tier II courses. The factors underlying European overseas expansion before 1800 and its impact on indigenous societies and world trading patterns.

436 [S] Imperialism in the Modern World 3 Prereq completion of one Tier I and three Tier II courses. History of imperialism (colonial, economic, territorial, cultural) since 1800 as a global phenomenon.

437 Topics in History—Study Abroad 3

438 Topics in History—Study Abroad 3

440 The Early Middle Ages, 330-1050 3 Western Europe, the Byzantine Empire, and Islam from the dissolution of classical Roman civilization to the 11th century. Credit not granted for both Hist 440 and 540.

441 The Later Middle Ages, 1050-1500 3 Western European and Byzantine civilizations from the 11th century revival to the advent of the Renaissance in the West.

442 Topics in History Study Abroad 3

443 Topics in History Study Abroad 3

444 [H] The Renaissance 3 Prereq completion of one Tier I and three Tier II courses. Political, cultural, intellectual, and religious history of Europe, 1500-1650.


446 Age of Louis XIV: Europe 1600-1789 3 Early modern Europe emphasizing artistic, intellectual, and political trends.

447 Europe in the French Revolutionary and Napoleonic Eras, 1789 to 1815 3 Credit not granted for both Hist 447 and 547.

449 Europe and Two World Wars, 1914-1945 3 Political, intellectual, economic, and international aspects of European life during and between two world wars. Credit not granted for both Hist 449 and 549.

450 [M] Europe Since 1945 3 Europe from the end of World War II to the present; the Cold War, European integration, social and intellectual life. Credit not granted for both Hist 450 and 550.

451 Topics in History—Study Abroad 3

452 Topics in History—Study Abroad 3

453 Age of Revolution: Europe, 1815-1870 3 The consolidation of industrial society and the nation-state in nineteenth-century Europe. Credit not granted for both Hist 453 and 553.

454 Age of Imperialism: Europe, 1870-1914 3 The rise of Europe to world predominence and the crisis of the European order. Credit not granted for both Hist 454 and 554.

455 From the Tudor Revolution to the Glorious Revolution 3 England in the age of the Protestant Reformation. Credit not granted for both Hist 455 and 555.

459 Modern Britain 3 Britain and the Empire from the Napoleonic wars to the present. Credit not granted for both Hist 459 and 559.

461 Medieval Russia 1147-1700 3 Political, economic, social, and cultural developments in Russia from the foundation of Moscow (1147) through the accession of Peter I (1700).

462 History of Imperial Russia 3 History and culture of Imperial Russia from Peter the Great to the 1905 revolution. Credit not granted for both Hist 462 and 562.


465 East-Central Europe 3 History, government, and culture of the countries between Germany and the Soviet Union; emphasis on the 20th century. Credit not granted for both Hist 465 and 565.

466 [T] History of the Cold War, 1944-present 3 Prereq completion of one Tier I and three Tier II courses. Exploration of the 50 year "cold" conflict between the U.S. and USSR and its political, social, economic, and cultural consequences for the world.

467 Modern France 3 The history of France from the revolution of 1789 to the present.

468 Hitler and Nazi Germany 3 Origins and rise of Nazism; state, society and culture in the Third Reich; Nazi racial ideology; world war; the Holocaust. Credit not granted for both Hist 468 and 568.

469 [M] Seminar in History 3 May be repeated for credit. Prereq Hist 300.


472 [M] 20th Century Middle East 3 Development 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 427.

487 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.

495 Space, Place, and Power in History: Historical Geography in Global Perspective 3 Introduction to the discipline of historical geography; geographical and spatial approaches to European, North American, and Asian history.

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

497 Seminar 3 May be repeated for credit; cumulative maximum 6 hours.

498 History Internship V 1-12 May be repeated for credit; cumulative maximum 12 hours. Prereq major or minor in Hist. Participation as intern in public or private sectors. Credit not granted for both Hist 498 and 598.

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

510 Field Course in American History 3 May be repeated for credit. Readings and interpretive problems of American history.

511 American Diplomatic History 1776-1914 3 Graduate-level counterpart of Hist 411; additional requirements. Credit not granted for both Hist 411 and 511.

512 American Diplomatic History in the 20th Century 3 Graduate-level counterpart of Hist 412; additional requirements. Credit not granted for both Hist 412 and 512.

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

515 Jefferson-Jacksonian America 3 Graduate-level counterpart of Hist 415; additional requirements. Credit not granted for both Hist 415 and 515.

516 Civil War and Reconstruction 3 Graduate-level counterpart of Hist 416; additional requirements. Credit not granted for both Hist 416 and 516.

517 Rise of Modern America 3 Graduate-level counterpart of Hist 417; additional requirements. Credit not granted for both Hist 417 and 517.

518 United States, 1914-1945 3 Graduate-level counterpart of Hist 418; additional requirements. Credit not granted for both Hist 418 and 518.

519 United States, 1945-Present 3 Graduate-level counterpart of Hist 419; additional requirements. Credit not granted for both Hist 419 and 519.

520 American Constitutional History 3 Graduate-level counterpart of Hist 420; additional requirements. Credit not granted for both Hist 420 and 520.

521 The American West 3 Graduate-level counterpart of Hist 421; additional requirements. Credit not granted for both Hist 421 and 521.

522 History of the Pacific Northwest 3 Graduate-level counterpart of Hist 422; additional requirements. Credit not granted for both Hist 422 and 522.

523 Radicals, Reformers, and Romantics: The Impact 3 Graduate-level counterpart of Hist 423; additional requirements. Credit not granted for both Hist 423 and 523.

525 Seminar in American History 3 May be repeated for credit.

527 Public History Theory and Methodology 3 Graduate-level counterpart of Hist 427; additional requirements. Credit not granted for both Hist 427 and 527.

528 Seminar in Public History 3 May be repeated for credit; cumulative maximum 6 hours. The development of skills at the graduate level to be used in nontraditional careers for historians.

529 Interpreting History through Material Culture 3 Historical interpretation to work on major historic preservation and museum projects.

530 History of Mexico 3 Prereq graduate standing. Graduate-level counterpart of Hist 430; additional requirements. Credit not granted for both Hist 430 and 530.

532 20th Century Latin America 3 Prereq graduate standing. Graduate-level counterpart of Hist 432; additional requirements. Credit not granted for both Hist 432 and 532.

533 History of Cuba and the Caribbean 3 Prereq graduate standing. Graduate-level counterpart of Hist 433; additional requirements. Credit not granted for both Hist 433 and 533.

534 History of Central America 3 Prereq graduate standing. Graduate-level counterpart of Hist 434; additional requirements. Credit not granted for both Hist 434 and 534.

535 Field Course in Latin American History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in Latin American history.

540 Seminar in European History 3 May be repeated for credit.

547 Europe in the French Revolutionary and Napoleonic Era, 1789 to 1815 3 Graduate-level counterpart of Hist 447; additional requirements. Credit not granted for both Hist 447 and 547.

549 Europe and Two World Wars, 1914-1945 3 Graduate-level counterpart of Hist 449; additional requirements. Credit not granted for both Hist 449 and 549.

550 Europe Since 1945 3 Graduate-level counterpart of Hist 450; additional requirements. Credit not granted for both Hist 450 and 550.

553 Age of Revolution: Europe, 1815-1870 3 Graduate-level counterpart of Hist 453; additional requirements. Credit not granted for both Hist 453 and 553.

554 Age of Imperialism: Europe, 1870-1914 3 Graduate-level counterpart of Hist 454; additional requirements. Credit not granted for both Hist 454 and 554.

555 From the Tudor Revolution to the Glorious Revolution 3 Graduate-level counterpart of Hist 455; additional requirements. Credit not granted for both Hist 455 and 555.

559 Modern Britain 3 Graduate-level counterpart of Hist 459; additional requirements. Credit not granted for both Hist 459 and 559.

560 Field Course in Early European History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and issues in early European history.

562 History of Imperial Russia 3 Graduate-level counterpart of Hist 462; additional requirements. Credit not granted for both Hist 462 and 562.

563 History of the Soviet Union 3 Graduate-level counterpart of Hist 463; additional requirements. Credit not granted for both Hist 463 and 563.

565 East-Central Europe 3 Graduate-level counterpart of Hist 465; additional requirements. Credit not granted for both Hist 465 and 565.

567 Modern France 3 Graduate-level counterpart of Hist 467; additional requirements. Credit not granted for both Hist 467 and 567.

568 Hitler and Nazi Germany 3 Graduate-level counterpart of Hist 468; additional requirements. Credit not granted for both 468 and 568.

569 Field Course in Modern European History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and 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 Topics in World History 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Readings in themes and literature of a global approach to history.

572 20th Century Middle East 3 Graduate-level counterpart of Hist 472; additional requirements. Credit not granted for both Hist 472 and 572.

575 Field Course in Women's History 3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Readings and interpretive problems in women's history.

576 Revolutionary China, 1800 to Present 3 Graduate-level counterpart of Hist 476; additional requirements. Credit not granted for both Hist 476 and 576.

577 Modern Japanese History 3 Graduate-level counterpart of Hist 477; additional requirements. Credit not granted for both Hist 477 and 577.

578 Field Course in Asian History 3 May be repeated for credit; cumulative maximum 9 hours. Readings and interpretive problems in Asian history.

580 Historiography 3

581 American Historiography 3

590 Politics of Developing Nations 3 Graduate-level counterpart of Hist 490; additional requirements. Credit not granted for both Hist 490 and 590.

595 The Teaching of History in College V 1 or 2 May be repeated for credit; cumulative maximum 5 hours. Theory, problems, and methods of teaching history at the college level.

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

597 Seminar in History 2 or 3 May be repeated for credit.
Honors College

M. F. Wack, Interim Dean.

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 world 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 admitted to the University Honors College as incoming first-year students may petition to enter the UHC any time after the end of their first semester but no later than the beginning of their junior year. For continued enrollment in the University Honors College, students must maintain an overall B+ average (3.2). Students in the UHC are not required to complete the General Education Requirements for graduation.

Students who satisfactorily complete all UHC requirements and a cumulative grade point average of 3.2, will receive a University Honors Certificate of Completion provided they have completed a minimum of 14 graded credits of honors courses.

The mathematics requirement for students in the University Honors College can be met in a number of ways (see footnote 1).

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 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. In addition, students complete a Senior Thesis or Project in the junior or senior year which is a capstone experience. A few selected majors will fulfill this requirement through coursework. Each student must choose an academic advisor and complete a significant piece of writing. Research, internship, community service, and education abroad can be used to satisfy this requirement. An oral presentation is included. Selected students will receive a “Pass with Distinction” on their final transcript.

Each semester, students enrolled in the Honors College take one to three honors courses in addition to their major courses. The suggested schedule of studies, distinguishing the honors courses over four years, is as follows:

Freshman Year

First Semester
Engl 198 or 199
Math requirement or social science 198

Second Semester
Engl 198 or 199
Math requirement or social science 198

Freshman or Sophomore Year

Choose three:
Anth 198, Econ 198, Hist 198, Pol S 198, Psych 198, Soc 198

Choose one:
U H 260, Hum 198*, Phil 198

Sophomore Year

Biol 298 (spring only)*
Ph S 298 (fall only)*

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
Optional: U H 430 (Education Abroad Practicum and Research)

*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.

†Phil and Hum can be taken from the freshman year on.

‡Students taking biological science laboratory courses for their majors may be exempt from this requirement.

‡Students taking physical science laboratory courses for their majors may be exempt from this requirement.

‡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.

Description of Courses

A S 198 Animal Science Honors 3
Anth 198 Anthropology Honors 3
Biol 298 Biological Science Honors 4 (3-3)
Chem 115 Chemical Principles Honors I 4 (3-3)
Chem 116 Chemistry Principles Honors II 4 (3-3)
Econ 198 Economics Honors 3
Engl 198 English Composition Honors 3
Engl 199 English Composition and Literature Honors 3
Geol 180 Geology Honors 4 (3-3)
Hist 198 History Honors 3
Hum 198 Humanities Honors 3
Phil 198 Philosophy Honors 3
Ph S 298 Physical Science Honors 4 (3-3)
Phys 205 Physics Honors I 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 Freshmen 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.

330 Development of Western Civilization 3 Examination of the literary, cultural, philosophical, and historical traditions within western civilization. Required of all Honors College students in their junior or senior year.

350 Development of Global Civilizations 3 Cultural and historical traditions of one or more civilizations; primary focus on Asian, African, Middle Eastern, and South American civilizations. Required of all Honors College students in their junior or senior year.

400 Honors Culture and Arts Practicum V 1-3 May be repeated for credit; cumulative maximum 6 hours. May be used to fulfill the independent study requirement for the Honors College. S, F grading.

430 Education Abroad Practicum and Research V 1-4 By interview only. Special assignments and research related to education abroad. S, F grading.
440 Domain of the Arts 3 An examination, frequently comparative, of the visual, literary, environmental, and performing arts. Required of all Honors College students in their senior year.

450 Honors Thesis or Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Thesis or project directed by student’s major department. S, F grading. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

451 Honors Interdisciplinary Thesis/Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. In-depth reading and writing project based upon original research and work; supervised by faculty members from two or more departments. S, F grading. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

452 Honors Community Service Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Supervised academic experience based on community service or designed to assist in solving particular social problems; formal research paper. S, F grading. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

453 Honors Internship Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Supervised experiential learning project combining academic training with practical experience within one’s career field or other areas; formal research paper. S, F grading. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

454 Honors Teaching Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Classroom and teaching experience; results are presented in a formal research paper. S, F grading. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

455 Honors Education Abroad Project V 1-3 May be repeated for credit; cumulative maximum 3 hours. Supervised writing and research carried out while participating in a WSU-sponsored exchange. S, F grading. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

456 Honors Team Research Projects V 1-3 May be repeated for credit; cumulative maximum 3 hours. Collaborative writing and research experience guided by one or more faculty members; collaborative project and individually produced formal research papers. S, F grading. Credit not granted for more than one of U H 450, 451, 452, 453, 454, 455, 456.

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

Honors College

Department of Horticulture and Landscape Architecture


HORTICULTURE

Courses in horticulture are designed to give instruction in fruit, vegetable, and ornamental production, handling, utilization, and management. Emphasis is on developing an understanding of plant growth and development fundamental to crop management. A production and management emphasis is designed to prepare students to be professionals in production, handling and processing, marketing, consulting, government, management, and related fields. A science emphasis is designed to prepare students for graduate study and careers in research and teaching.

The department offers an undergraduate minor in the areas of fruit and vegetable production or environmental horticulture.

Horticultural production and management students are encouraged to minor in business administration or agricultural economics. Horticultural science students are encouraged to take additional courses in chemistry, biochemistry, genetics, mathematics, and physics.

An interdisciplinary curriculum in integrated pest management is available to those students whose interests span the areas of horticulture and pest management. The curriculum is described under the entomology section of this bulletin.

The department offers courses of study leading to the degrees of Bachelor of Science in Horticulture, Bachelor of Science in Landscape Architecture, Master of Science in Horticulture, Master of Science in Landscape Architecture, and Doctor of Philosophy.

Degree Program Requirements

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

Students in horticulture may focus on environmental horticulture, fruits and vegetables, or tree fruit management.

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

ENVIRONMENTAL HORTICULTURE DEGREE PROGRAM (133 HOURS) ✯FYDA

Freshman Year

First Semester

Hours

Arts & Humanities [H,G] (GER) 3
Bot 120 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3

Second Semester

Hours

Chem 102 [P] or 106 [P] (GER) 4
ComSt 102 [C] or H D 205 [C] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Hort 201 4
L A 264 3

Sophomore Year

First Semester

Hours

Chem 240 or 340 3 or 4
Hort 231 3
Hort 234 3
Intercultural [L,G,K] (GER) 3
SoilS 201 3

Second Semester

Hours

Ag Ec 201 [S] or Econ 102 [S] (GER) 3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Hort 232 3
Hort 251 4
Math Proficiency [N] (GER) 3

Summer Session—Hort 399 3

Junior Year

First Semester

Hours

Business or Science Emphasis1 6
Bot 320 4
Hort 331 3
Hort 356 1
PI P 429 3
Complete Writing Portfolio

Second Semester

Hours

Business or Science Emphasis1 6
Cpt S Elective 3 or 4
Entom 340 3
SoilS 441 3

Senior Year

First Semester

Hours

Business or Science Emphasis2 3
Hort 310 or 313 3
Hort 320 3
Hort 321 1
Hort 418 [M] 3
Hort 438 3

Second Semester

Hours

Business or Science Emphasis2 3
Hort 416 3
Hort 425 [M] 3
Hort 439 3
IPM Elective 2 or 3
Tier III Capstone (GER) 3

Business emphasis—Acctg 230 and 6 additional credits in Agricultural Economics and/or Business Administration are required

1Science emphasis—Chem 105, 106, 340, and 342; BC/BP 364; GenCB 150 or 301; and Stat 412 or Math 171 are required.

2Business emphasis—Acctg 230 and 6 additional credits in Agricultural Economics and/or Business Administration are required

FRUIT AND VEGETABLE HORTICULTURE DEGREE PROGRAM (121 HOURS) ✯FYDA

Freshman Year

First Semester

Hours

Bot 120 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3

Second Semester

Hours

Chem 102 [P] or 106 [P] (GER) 4
ComSt 102 [C] or H D 205 [C] (GER) 3
GenEd 110 [A] or 111 [A] (GER) 3
Hort 201 4
L A 264 3

FYDA
### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (Ger)</td>
<td>3</td>
</tr>
<tr>
<td>Chem 240</td>
<td>4</td>
</tr>
<tr>
<td>Hort 234</td>
<td>3</td>
</tr>
<tr>
<td>Hort 310 &amp; 311; 313; or 320 &amp; 321</td>
<td>3 or 4</td>
</tr>
<tr>
<td>SoilS 201</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<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 Science [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Bot 320</td>
<td>4</td>
</tr>
<tr>
<td>Hort 251</td>
<td>4</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hort 310 &amp; 311; 313; or 320 &amp; 321</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Hort 356</td>
<td>1</td>
</tr>
<tr>
<td>Hort Elective</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>PI P 429</td>
<td>3</td>
</tr>
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</table>

**Complete Writing Portfolio**

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entom 340</td>
<td>3</td>
</tr>
<tr>
<td>Environmental Hort Elective</td>
<td>3</td>
</tr>
<tr>
<td>GenCB 150 or 301</td>
<td>3 or 4</td>
</tr>
<tr>
<td>SoilS 441</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Summer Session—Hort 399</td>
<td>3</td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hort 418 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Hort 310 &amp; 311; 313; or 320 &amp; 321</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</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>Hort 416</td>
<td>3</td>
</tr>
<tr>
<td>IPM Elective</td>
<td>2 or 3</td>
</tr>
<tr>
<td>Hort 425 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

### 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 the educational emphasis is on applied aspects of tree fruit production and management through courses, orchard practicum experiences and internships. Wenatchee Valley College, located in the heart of Washington’s tree fruit industry, has teaching orchards and well equipped facilities. The second half of the program is taken at Washington State University where courses, laboratories and research experience provide students with an advanced knowledge of the science, technology and management of tree fruit production systems. Additional courses are taken to increase the breadth of knowledge about the diversity of horticultural crops and awareness of current issues in horticultural science.

### Freshman Year (Wenatchee Valley College)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
</tr>
<tr>
<td>Agri 153</td>
<td>4</td>
</tr>
<tr>
<td>Agri 161</td>
<td>5</td>
</tr>
<tr>
<td>Chem 110 {WSU [P] GER}</td>
<td>5</td>
</tr>
<tr>
<td>Engl 101 {WSU [P] GER}</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Winter Quarter</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri 152</td>
<td>4</td>
</tr>
<tr>
<td>Agri 162</td>
<td>5</td>
</tr>
<tr>
<td>Biol 122 {WSU [B] GER}</td>
<td>5</td>
</tr>
<tr>
<td>CIS 115</td>
<td>5</td>
</tr>
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</table>

### Spring Quarter | Hours |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri 154</td>
<td>2</td>
</tr>
<tr>
<td>Agri 163</td>
<td>5</td>
</tr>
<tr>
<td>Chem 111 {WSU [P] GER}</td>
<td>5</td>
</tr>
<tr>
<td>Math 201 {WSU [N] GER}</td>
<td>5</td>
</tr>
</tbody>
</table>

### Summer Quarter | Hours |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri 115</td>
<td>5</td>
</tr>
<tr>
<td>Agri 155</td>
<td>2</td>
</tr>
</tbody>
</table>

### Sophomore Year (Wenatchee Valley College)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
</tr>
<tr>
<td>Agri 242</td>
<td>3</td>
</tr>
<tr>
<td>Agri 264</td>
<td>5</td>
</tr>
<tr>
<td>Agri 292</td>
<td>4</td>
</tr>
<tr>
<td>Spch 220 {WSU [C] GER}</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Winter Quarter</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri 218</td>
<td>4</td>
</tr>
<tr>
<td>Agri 265</td>
<td>5</td>
</tr>
<tr>
<td>Econ 202 {WSU [S] GER}</td>
<td>5</td>
</tr>
<tr>
<td>Foreign Language Elective</td>
<td>5</td>
</tr>
</tbody>
</table>

### Spring Quarter | Hours |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri 243</td>
<td>4</td>
</tr>
<tr>
<td>Agri 266</td>
<td>5</td>
</tr>
<tr>
<td>Agri 292</td>
<td>4</td>
</tr>
<tr>
<td>Spch 220 {WSU [C] GER}</td>
<td>5</td>
</tr>
</tbody>
</table>

### Summer Quarter | Hours |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri 267</td>
<td>5</td>
</tr>
<tr>
<td>Agri 292</td>
<td>4</td>
</tr>
<tr>
<td>Foreign Language Elective</td>
<td>5</td>
</tr>
</tbody>
</table>

### Junior Year (Washington State University)

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 240</td>
<td>4</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hort 499</td>
<td>4</td>
</tr>
<tr>
<td>Hort Elective</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

**Complete Writing Portfolio**

<table>
<thead>
<tr>
<th>Spring Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenCB 150 or 301</td>
<td>3 or 4</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Hort 251</td>
<td>4</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Senior Year (Washington State University)

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bot 320</td>
<td>4</td>
</tr>
<tr>
<td>Hort 356</td>
<td>1</td>
</tr>
<tr>
<td>Hort 418 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Hort/AG Elective</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Mgt Elective</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hort 416</td>
</tr>
<tr>
<td>Hort 421 [M]</td>
</tr>
<tr>
<td>Hort 425 [M]</td>
</tr>
<tr>
<td>SoilS 441</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
</tr>
</tbody>
</table>

### 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

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

### PRE-LANDSCAPE ARCHITECTURE

Prelandscape architecture (preLA) is a two-year, nondegree course of study that is intended to prepare undergraduate students for the advanced professional curriculum in the upper division. The preLA curriculum concentrates on General Education Requirements (GERs) and basic professional courses. General Education Requirement (GER) courses should be selected with the assistance of a landscape architecture 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>
</tr>
</thead>
<tbody>
<tr>
<td>Bot 120 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<tr>
<td>ES/RP 150 [Q] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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### Second Semester

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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 [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>LA 101</td>
<td>3</td>
</tr>
<tr>
<td>LA 260</td>
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<tr>
<td>LA 262</td>
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### Second Semester

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### 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 (BLA). Completion of the five-year program totaling 154 credits leads to the degree of Bachelor of Landscape Architecture and allows the graduate to enter the profession. At least three additional years of professional experience and successful completion of the landscape architectural license examination are necessary for registration as a licensed landscape architect in most states.

To be admitted to the major of LA, 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 only to 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 pre-LA curriculum may apply to the professional program. The entire fourth year of the program is conducted at the Interdisciplinary Design Institute on the WSU Spokane 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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<tbody>
<tr>
<td>Biol 372</td>
<td>3</td>
</tr>
<tr>
<td>Bot 462, NATRS 300, or L A 380</td>
<td>3</td>
</tr>
<tr>
<td>Hort 331</td>
<td>3</td>
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<tr>
<td>LA 362</td>
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<td>L A 366</td>
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<tr>
<td>SoilS 201</td>
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### Second Semester

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<th>Hours</th>
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### Description of Courses

#### Horticulture

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<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Hort 101</td>
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#### Plant Biotechnology

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#### Plant Science

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<th>Course</th>
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#### Professional Work Experience

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<th>Course</th>
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<tr>
<td>Professional Work Experience</td>
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1. Students will select two specialization options of 9 credits each from the following: Business, Horticulture/Plant Science, Natural Resources/Ecology, Urban Design, Public Policy/Planning, Computer Applications, Self-Directed.
405 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Prereq BC/BP 364, Bot 320, GenCB 301. Genetic, molecular, cellular and evolutionary aspects of plant reproductive strategies and their manipulations. Credit not granted for both Hort 405 and 505.

416 Advanced Horticultural Crop Physiology 3 Prereq Hort 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 (PSc 418). Credit not granted for both Hort 418 and 518.

420 Potato Physiology and Production Technology 2 (1-3) Prereq Bot 320. Plant and tuber physiology; physical, chemical, physiological and technical concepts of production, storage, and processing of potatoes. Field trip required. Credit not granted for both Hort 420 and 520. Cooperative course taught by WSU, open to UI students (PSc 420).

421 [M] Fruit Crops Management 3 Prereq 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 I 3 (2-3) Prereq Hort 234. Fall and winter production practices of greenhouse and nursery crops. Field trip required. Cooperative course taught by WSU, open to UI students (PSc 430). Credit not granted for both Hort 438 and 538.

439 Ornamental Plant Production II 3 (2-3) Prereq Hort 234. Production requirements for spring greenhouse and nursery crops; garden center management considerations. Field trip required. Credit not granted for both Hort 439 and 539. Cooperative course taught by WSU, open to UI students (PSc 431).

445 [M] Plant Breeding 3 Same as Crop S 445.

469 Seed Production 3 Same as Crop S 469.

480 Agricultural Issues 1 Prereq Biol 103, junior standing. Facts regarding current issues about pollution, the environment, marketing, and endangered species; formulation of position statements regarding current issues.

490 Potato Science 3 Prereq Hort 416. History, botanical characteristics, seed physiology and production, plant population, physiology of growth, and pest management; factors influencing maturation, harvest, yield, grade, bruise control, storage, and quality maintenance; economies of production and research on a global basis. Credit not granted for both Hort 490 and 590. Cooperative course taught by UI (PSc 490), open to WSU students.

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

503 Advanced Topics in Horticulture V 1-4 May be repeated for credit; cumulative maximum 8 hours. Prereq Bot 320. Current topics and research techniques in horticulture.

505 Genetic and Molecular Aspects of Plant Reproduction 2 or 3 Graduate-level counterpart of Hort 405; additional requirements. Credit not granted for both Hort 405 and 505.

509 Seminar I 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 I 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 I May be repeated for credit; cumulative maximum 4. A cross-discipline seminar, including botany, crop and soil sciences, horticulture, plant pathology, and plant physiology.

516 Advanced Horticultural Crop Physiology 3 Graduate-level counterpart of Hort 416; additional requirements. Credit not granted for both Hort 416 and 516.

518 Post-Harvest Biology and Technology 3 (2-3) Prereq graduate standing. Graduate-level counterpart of Hort 418; additional requirements. Credit not granted for both Hort 418 and 518. Cooperative course taught by WSU, open to UI students. Cooperative course taught by WSU, open to UI students (PSc 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 (PSc 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 (PSc 533).

538 Ornamental Plant Production I 3 (2-3) Graduate-level counterpart of Hort 438; additional requirements. Credit not granted for both Hort 438 and 538. Cooperative course taught by WSU, open to UI students (PSc 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 (PSc 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 (PSc 590), open to WSU students.

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

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

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

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

Description of Courses

Landscape Architecture

L A 101 Landscape Architecture Graphics 3 (1-6) Basic mechanical and freehand drawing; use of various drafting media, two- and three-dimensional drawing, lettering, and rendering techniques.

102 Introduction to Computer Graphics in Landscape Architecture 3 (2-3) Computer-aided analysis, design, graphic techniques using AutoCAD, Intell iCAD, LandCAD2D, to gain 2- and 3-D design, analysis, drafting, rendering, and web format skills.

201 [M] The Built Environment 3 Same as Arch 202.

250 Beginning Landscape Design and Construction 3 (2-3) Prereq sophomore standing; by interview only. Basic landscape architecture design and construction for small spaces.

260 History of Landscape Architecture 3 Historical development in the practice and profession of landscape architecture throughout the world, circa B.C. to present. Cooperative course taught jointly by WSU and UI (L A 539).

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.

265 Landscape Design 3 For nonmajors. Design theory and principles; site design factors; design process application; construction criteria; graphic construction communication; landfill; circulation systems; plants used.

299 Professional Work Experience: Contracting and Maintenance 1 or 2 Prereq major in preLA or L A. Project planned with and approved by faculty as professional work experience; written report and presentation to faculty required.

362 Landscape Architectural Design III 4 (2-6) Prereq L A 263, junior in L A. Professional site design processes; concentration on planting and site planning, design with urban community, ecological, and open-space projects.

363 Landscape Architectural Design IV 4 (2-6) Prereq L A 263, junior in L A. Professional site design processes; concentration on recreation facilities and site planning within residential, urban, institutional, and regional projects.

365 Landscape Architectural Construction I 4 (2-6) Prereq L A 262. Basic grading and surface drainage facilities, subsurface drainage systems, horizontal and vertical road design, site design, and construction document techniques.


380 Ecological Applications in Design 3 (2-3) Prereq junior standing. Cooperation with Landscape Architecture or instructor's permission. Fundamental concepts of ecology, particularly from population, community, landscape, restoration, and historical ecology, as they relate to planning and design.
485 Professional Work Experience: Office Practice 1 or 2 May be repeated for credit; cumulative maximum 4 hours. Prerequisite junior in L A. Planned professional work experience in design and office practice as approved by faculty; written report and presentation to faculty required. S, F grading.

425 Issues in Landscape Evolution and Design Theory 3 Prerequisite senior standing. Investigation of historical relationships between humans and environment; exploration of major theoretical approaches to design, planning, and management of landscapes.

440 Advanced Application in Computer-Aided Design 3 Prerequisite 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 Prerequisite senior standing. History, theory, methods, and processes in regional planning; contemporary issues and professional practice.

460 Interdisciplinary Design Studio 5 (2-6) Prerequisite senior standing in L A. Interdisciplinary design/problem solving in an urban environment; collaboration with students in other design professions; real-world, service-based learning problems.

467 Regional Landscape Inventory and Analysis 4 (2-6) Prerequisite Biol 120, Geol 101 or SoilS 201. Application of ecological planning process for landscape inventory and analysis.

468 [M] Senior Creative Project 4 Prerequisite L A 475. Individually developed studio and scholarly project conducted with a faculty mentor; demonstration of advanced verbal, graphic, and written presentations required.

470 Landscape Architectural Design V 4 (1-9) Prerequisite senior in L A. Advanced design and individual landscape architectural design and planning projects; professional applications of site design theory and design processes.

475 Senior Project Proposal 2 Prerequisite senior in L A. Program planning for senior project. S, F grading.

480 Professional Practice 2 Prerequisite senior in L A. Current office practices, design and construction management techniques; introduction to construction contract legal requirements within the practice of landscape architecture. Cooperative course taught jointly by WSU and UI (LA 358).

485 [M] Senior Creative Project I 4 (0-8) Prerequisite L A 425. Individually developed studio or scholarly project conducted with faculty advisor; collection, analysis, and presentation of project information.

486 [M] Senior Creative Project II 4 (0-8) Prerequisite L A 485. Individually developed studio or scholarly project conducted with faculty advisor; synthesis of information, solution development, and documentation.

491 Topics in Design 3 Prerequisite junior standing.

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

510 Philosophy and Rassay in Landscape Architecture 3 Prerequisite graduate standing. Natural and cultural processes that characterize the interaction between humans and the landscape.

511 Methodology and Communication in Landscape Architecture 3 Prerequisite 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) Prerequisite graduate standing. Biophysical characteristics of the Northern Rocky Mountain regional landscape.

521 Cultural Interpretation of the Regional Landscape 4 (2-4) Prerequisite graduate standing. Cultural characteristics of the Northern Rock Mountain regional landscape.

600 Special Projects or Independent Study 5 Variable credit. S, F grading.

700 Master’s Research, Thesis, and/or Examination 5 Variable Credit. S, F grading.

Program in Hotel and Restaurant Administration

Director, W. T. Umbreit; Taco Bell Distinguished Professor, W. Maynard; Ivar Haglund Distinguished Professor, D. Rafterford; Associate Professor, C. Becker, K. Kendall, M. C. Paxson, M. Stewart; Assistant Professor and Coordinator Swiss Center, W. H. Samenfink; Culinary Educator, G. Fritz; Director External Relations and Placement, A. Lauma; Lecturers, W. Costen, R. Harrington; Professors Emeriti, P. Diaz, L. Kreck, D. Smith.

The program provides instruction at WSU Pullman and also to qualified transfer students in Brig, Switzerland. This program provides specialized study of the major organizational and administrative problems of the hotel and restaurant industry. The program is intended to prepare graduates for the managerial opportunities available in the industry here and abroad. The curriculum provides for the well-rounded education of the hotel, restaurant, club, and institutional executive. It includes courses in the arts and sciences, economics, business administration, and foods, as well as in hotel and restaurant management. The course of study leads to the degree of Bachelor of Arts in Hotel and Restaurant Administration.

Certification Requirements

Pre-Hotel and Restaurant Administration (PreHA) Major Certification Requirements. Certification requirements for the pre-hotel and restaurant administration major include completion of 24 semester hours, 6 hours of which must be in Acctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Mgt 101, or MIS 250; a 2.0 cumulative g.p.a. and a 2.0 business g.p.a.

Hotel and Restaurant Administration (HA) Major Certification Requirements. To be eligible for certification as a major in hotel and restaurant administration, students must have earned at least 60 semester hours credit, including all of the following courses: Acctg 230, 231, B Law 210, Dec S 215, Econ 101, 102, Enlg 101, Math 201, 202, MIS 250, and meet current standards of a cumulative g.p.a. of at least 2.5. All students are eligible to petition for the consideration of alternative criteria. A 2.0 cumulative business g.p.a. is required for graduation.

Degree Program Requirements

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

All students majoring in hotel and restaurant administration must see their 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 202; Math 201; MIS 250. Enrollment in 300-level CBE business and hotel courses is restricted to those students who have met these requirements and certified as HA majors.

All students majoring in hotel and restaurant administration must complete 50% of their course work outside of the College of Business and Economics. Nine hours of economics and four hours of Dec S 215 are counted as outside of the CBE to meet this 50% rule.

Residence Requirements: 1) At least 50% of business core and major specialization course requirements must be taken at WSU; 2) At least nine 300-400-level business/economics/hotel courses must be taken in residence at WSU; and 3) The last 30 hours of course work must be taken at WSU.

The chair of the department and/or the dean of the college must approve in writing any portion of the 300-400-level credit which is to be satisfied by transfer, correspondence, independent study, or other credit which may not carry WSU grade points. Additional transfer, correspondence, and independent study credit (within university limits on these credits) may count toward the 120 hours required for the degree and/or satisfy requirements other than major courses.

Only general elective courses that are not GERs, 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)

Freshman Year Hours

First Semester
Econ 101 or 102 [S] [S] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
H A 181 3
Math 201 3

Second Semester
Econ 101 or 102 [S] [S] (GER) 3
FSHN 120 4
Oral Com [C] (GER) 3
Math 202 [N] (GER) 3
Tier 1 Science [Q] (GER) 3

Sophomore Year Hours

First Semester
Acctg 230 3
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 3 or 4
GenEd 111 [A] (GER) 3
H A 220 3
MIS 250 3

Second Semester
Acctg 231 3
B Law 210 3
Dec S 215 4
H A 258 2
H A 280 3

162
Junior Year

First Semester  Hours  
Engl 402 [W] or 403 [W] (GER)  3  
H A 358  3  
Mgt 301  3  
Mktg 360  3  
Physical Sciences [P] (GER)  3 or 4  
Complete Writing Portfolio  
or Semester Abroad In Switzerland

Second Semester  Hours  
Fin 325  3  
H A 381 [M]  3  
H A 491  3  
H A Elective  3  
Soc or Psych [S,K] (GER)  3  
or Semester Abroad In Switzerland

Senior Year  

First Semester  Hours  
Econ 301  3  
Intercultural [I,G,K] (GER)  3  
H A 320  1  
H A 480 [M]  3  
MIS 350  3  

Second Semester  Hours  
H A 495  3  
H A Elective  3  
Mgt 450  3  
Pol Sci Elective  3  
Tier III Capstone (GER)  3  

Minor in Hotel and Restaurant Administration

To be eligible to certify in the hotel and restaurant administration minor, students must have a cumulative g.p.a. of 2.5. A minor in hotel and restaurant administration requires at least 16 hours of credit, 8 of which must be 300-400-level, with an overall g.p.a. of at least a 2.0 in the required courses. Courses for the minors may not be taken pass/fail. A total of 6 hours of transfer work may be counted toward the minor requirements for courses at the 100- or 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 structures of the hospitality service industry. Cooperative course taught by WSU, open to UI students (RcMgt/Rec 181).

H A 201 Quantity Food Production 3 Principles of menu writing, sanitation and food preparation applied to management of quantity food production and service.

H A 220 Introduction to Industry Experience 1 Preparations for work in hospitality/business organizations; resume writing, interview skills, use of Career Services, career dress. S, F grading.

H A 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).

H A 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.

H A 280 Lodging Systems and Procedures 3 Management functions relating to the planning and operational policies of various hotel departments.

H A 284 Managed Services 3 Management systems of the segment of the hospitality industry relating to contract and self-operated management companies.

H A 301 Introduction to Conventions and Meetings Industry 3 Prereq junior standing. Overview of industry, including components, interrelationships, economics and theory.

H A 310 Hospitality Industry Financial Control 3 Prereq Acctg 231; junior standing. International control through financial and accounting systems for hotels and restaurants.


H A 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. S, F grading.

H A 325 Club Management 3 Prereq H A 220. Theory, organization, structure and management of public assembly facilities, including private structures.

H A 349 Applied Industrial Relations 3 Prereq H A 381. Labor relations; history, organization, and elections of bargaining agents, negotiation and administration of contracts.

H A 350 International Tourism 3 International and domestic tourism; effects of tourism on the society.

H A 351 Association Management 3 Prereq H A 301. Theory, organization, structure and management of voluntary associations; economics and role in convention industry.

H A 352 Convention Facilities Management 3 Prereq H A 301. Facilities, design, construction, organization and management of public assembly facilities, including private structures.

H A 354 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.

H A 355 Marketing Strategy and Development 3 Prereq Mktg 360. Theory and practice; problems in guest relations, special sales efforts, intramural promotion, research.

H A 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.

H A 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.

H A 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.


357 Club Management 2 Prereq junior standing. The identification of managerial problems unique to club operations and their potential solutions.


382 Multi-Unit Management 3 Prereq H A 381. Concepts and principles involved in managing multiple restaurant units; finance, marketing, human resources, operations, and financial management. Special attendance hours may be required.

383 Meeting and Convention Management 3 Prereq H A 301. Theory and practice of meeting/convention/event management, including goals, organization on- and off-site operations, evaluation.

386 Applied Industrial Relations 2 Prereq junior standing. Labor relations; history, organization, and elections of bargaining agents, negotiation and administration of contracts.

435 International Tourism 3 International and domestic tourism; effects of tourism on the society.

440 Association Management 3 Prereq H A 301. Theory, organization, structure and management of voluntary associations; economics and role in convention industry.

450 Convention Facilities Management 3 Prereq H A 301. Facilities, 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.
Department of Human Development


Students seeking a bachelor of arts degree in this department focus on human development across the lifespan as it occurs within the family, and is linked to a variety of contexts within communities. The program centers on understanding the complexity of physical, social, cognitive, and affective individual development with emphasis on development within the family. The curriculum examines human and family development across the lifespan (i.e., child, adolescent, younger and older adults). Opportunities are also available to become state certified as a teacher in preschool to third grade or as a family and consumer sciences teacher in junior high or senior high school.

In addition to the teaching certifications, the department offers two emphasis areas. The first emphasis is human development. Within this emphasis students prepare to work with children, adolescents, or older adults in a variety of professional settings. These may include positions in foster parent programs, adoption agencies, various child care or head start programs, teen centers, nursing homes, and other community-based programs for the elderly. The second emphasis is family studies. Students choosing this emphasis will be prepared for a wide range of careers, most of which focus on some aspect of services offered to families or family members by public agencies and/or private business.

Students completing a human development emphasis or family emphasis degree are required to complete a certified minor or approved certificate of study in another department. A minor or certificate of study should be selected in consultation with a human development faculty advisor, preferably by the end of the third semester. The Bachelor of Arts degree in Human Development requires a cumulative g.p.a. of 2.5 or better in all H D courses and other courses accepted for the H D core. Students must achieve a cumulative g.p.a. of 2.5 or better in courses used to fulfill requirements for the Human Development and Early Childhood minors.

Both human development and family emphases provide preparation for graduate work leading to teaching, research, counseling, or administrative positions in social service, resource management, or pre-family therapy.

The department also offers a Master of Arts degree in Human Development. 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)  

Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Semester</td>
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</tr>
<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)</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
</tr>
<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>
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<td>H D 201</td>
<td>3</td>
</tr>
<tr>
<td>H D 204</td>
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<td>Sophomore Year</td>
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<td>First Semester</td>
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</tr>
<tr>
<td>Biological [B] Sciences (GER)</td>
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<tr>
<td>H D 203</td>
<td>3</td>
</tr>
<tr>
<td>H D Elective</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
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<tr>
<td>H D 202</td>
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<tr>
<td>H D 310</td>
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<tr>
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<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>Junior Year</td>
<td></td>
</tr>
<tr>
<td>First Semester</td>
<td></td>
</tr>
<tr>
<td>H D Emphasis 320 [0-2] or 420 [M]</td>
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<tr>
<td>H D Elective</td>
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<td>Minor Elective</td>
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<tr>
<td>Electives</td>
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<td>Complete Writing Portfolio</td>
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<td>Second Semester</td>
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<td>H D Electives</td>
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Senior Year

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>First Semester</td>
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<td>H D 330</td>
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<td>H D Elective</td>
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<td>Minor Elective</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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<td>Elective</td>
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</tr>
<tr>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>H D 410 [M]</td>
<td>3</td>
</tr>
<tr>
<td>H D 446 or 498</td>
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<tr>
<td>Electives</td>
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</table>


1 Psych 105 [S] or Soc 101 [S] are strongly recommended.
2 FSHN 130 [B] is strongly recommended.
3 Courses are only offered during this semester each year.
4 A minor must be decided at the end of the third semester.
5 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 anytime 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. H D 330 should be taken no more than one to two semesters before taking the internship.

Teaching Certificate Program

Students majoring in human development may choose to become certified in the State of Washington to teach in preschool through third grade (P-3), and kindergartners 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>H D 201</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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</tr>
<tr>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>H D 202</td>
<td>3</td>
</tr>
<tr>
<td>H D 204</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>3 or 4</td>
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<td>Psych 105 [S] (GER)</td>
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Sophomore Year

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>H D 320</td>
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<tr>
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<td>Elective</td>
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</tr>
<tr>
<td>Second Semester</td>
<td></td>
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<tr>
<td>AMT Elective</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>ComSt 102 [C] (GER)</td>
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<tr>
<td>Engl 201 [W], 301 [W], 302 [W] (GER)</td>
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**Junior Year**

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<tr>
<td>Ag Ed 440¹</td>
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<td>H D 304</td>
<td>3</td>
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<tr>
<td>AMT Elective²</td>
<td>3</td>
<td>H D 342, ³</td>
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<td>H D 350³</td>
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<td>Math 252 [N] (GER)</td>
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<td>H D 479</td>
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<td>Physical Sciences [P] (GER)</td>
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<tr>
<td>T &amp; L 302⁴</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>English 201 [W] (GER)</td>
</tr>
<tr>
<td>3</td>
<td>Biological Sciences [B] (GER)</td>
</tr>
<tr>
<td>3</td>
<td>Math 251¹, ³</td>
</tr>
<tr>
<td>3</td>
<td>Mus 153 [H] (GER)³</td>
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</tbody>
</table>

¹ Courses are only offered during this semester each year.
² H D 302 strongly recommended.
³ Select two from: AMT 215, 216, 317.
⁴ Econ 101 [S] or 102 [S] strongly recommended.

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>H D 302</td>
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<tr>
<td>T &amp; L 306</td>
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<td>T &amp; L 371</td>
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<td>T &amp; L 400</td>
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<td>T &amp; L 483</td>
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**Second Semester**

<table>
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<tr>
<th>Hours</th>
<th>Courses</th>
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<tbody>
<tr>
<td>3</td>
<td>H D 350³</td>
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<tr>
<td>6</td>
<td>H D 446⁴</td>
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<tr>
<td>3</td>
<td>Intercultural Studies [I,G,K] (GER)</td>
</tr>
<tr>
<td>3</td>
<td>T &amp; L 390</td>
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<td>3</td>
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<td>H D 430</td>
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<tr>
<td>3</td>
<td>H D 449</td>
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<tr>
<td>3</td>
<td>Sp Ed 301</td>
</tr>
<tr>
<td>3</td>
<td>Tier III Capstone (GER)</td>
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</tbody>
</table>

**Minor in 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 408, 410, or 420. Completion of this set of courses also provides a supporting endorsement in early childhood education for students completing a major in elementary education.

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**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
<td>H D 342, ³</td>
<td>4</td>
</tr>
<tr>
<td>Gen Ed 110 [A] (GER)</td>
<td>3</td>
<td>Math 252 [N] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Psych 105 [S,K] (GER)</td>
<td>3</td>
<td>Physical Sciences [P] (GER)</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Science [B, P, Q] (GER)</td>
<td>3 or 4</td>
<td>T &amp; L 300</td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>English 201 [W] (GER)</td>
</tr>
<tr>
<td>3</td>
<td>Biological Sciences [B] (GER)</td>
</tr>
<tr>
<td>3</td>
<td>Math 251¹, ³</td>
</tr>
<tr>
<td>3</td>
<td>Mus 153 [H] (GER)³</td>
</tr>
</tbody>
</table>

¹ FSHN 130 [B] is strongly recommended.
² Engl 201 or 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.

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**Minor in Aging**

The Department of Human Development administers the Program in Aging, a minor available to all WSU undergraduate students, including Human Development majors. Students may opt to earn a Certificate in Gerontology in conjunction with completing requirements for the Program in Aging (see Program in Aging). Refer to criteria outlined in the Program in Aging and contact Margaret Young at 335-9203 or email yougmg@mail.wsu.edu.

**Description of Courses**

**Human Development**

**H D 101** [S] Human Development Across the Lifespan 3 Overview of lifespan development from a psychosocial ecological perspective; individuals, families, organizations, and communities and their interrelationships.

**H D 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.

**H D 202** Human Development - Middle Childhood Through Adolescence 3 In-depth study of childhood through adolescence; parent-child relationships; socialization; and course of family crisis, using a family systemic approach, including principles used in intervention strategies.


**H D 205** [C] Communication in Human Relations 3 Developing an understanding of human behavior and learning skills in communication and leadership.

**H D 300 Child Abuse and Neglect** 3 Prereq 6 hours in Anth, H D, Psych, or Soc. Examination of causes, identification, reporting, and treatment of children who are abused or neglected.

**H D 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.

**H D 302 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.

**H D 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.

**H D 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.

**H D 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.

**H D 330 Professional Preparation** 2 Prereq 12 hours in H D. Human service career preparation through: career exploration; relating students’ skills and educational plans to professional plans; cover letters; resumes; interviewing.
334 [S] Principles of Community Development 3 Same as R S 334.
341 Learning and Guidance in Early Childhood 3 Prereq H D 101 or 201; 204. Theories of child guidance; understanding of child behavior; strategies and techniques for effective group and individual guidance of young children.
342 Curriculum for Early Childhood Programs 4(3-3) Prereq H D 101, 201, 204. Planning and implementation of developmentally appropriate curriculum for use in programs serving young children.
345 Managing Behavior in Early Childhood Settings 3 Prereq H D 101 or 201; 204. Principles and strategies for management of children’s individual and group behavior in early childhood settings; professional and ethical responsibilities.
346 Middle Childhood and School Age Care 3 Prereq 6 hours in H D, Psych, or Soc. Understanding development in middle childhood (approximately 5-12 years); understanding and planning school age care programs.
350 [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, language, and other types of diversity.
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.
403 [T] Families in Poverty 3 Prereq H D 101, 204; or 6 hours in H D or social sciences; completion of one Tier I and three Tier II courses. Examining poverty in US and globally; description of groups most often poor; identification of effective solutions and successful interventions.
406 Work and Family 3 Prereq 6 hours in Anth, H D, Psych, or Soc. Issues related to work and family; workplace environments; fostering effective policy responses to family needs; role of work-family coordination. Credit not granted for both H D 406 and 506.
407 Directed Teaching: Agriculture and Home Economics V 4-10 Same as Ag Ed 407.
408 Advanced Adolescent Development 3 Prereq 6 hours in Anth, H D, Psych, or Soc. In-depth examination of theories and research; developmental issues and prevention and intervention programs for school-aged child and adolescent.
409 Current Consumer Issues 3 Prereq 6 hours in Anth, H D, Psych, or Soc. Analysis of the consumer role; ecological perspective; interaction of consumer, government, market; effects on communities, families, and individuals.
410 [M] Public Policy Issues Impacting Families and Individuals 3 Prereq 6 hours in Anth, H D, Psych, or Soc. Family policy issues in a changing society; ecological perspective; relationship of public policy to communities, organizations, families, and individuals.
412 Adult Development and Learning 3 Prereq 6 hrs of H D, Psych, or Soc. Understanding growth and change in adulthood with application of effective learning and teaching practices with adult populations.
420 [M] Application of Human Development Theories 3 Prereq 6 hours in Anth, H D, Psych, or Soc. In-depth examination of theories and their use in understanding individual development in context of family and community.
423 Fundamentals of Participatory Research 3 Same as R S 423.
428 Housing America’s Families 3 Housing, furnishings, and equipment as they influence family well-being, and families’ housing choices as affected by social, psychological, economic, technological, and political factors. Cooperative course taught by UI (FCS 428), open to WSU students.
430 Professional Skills for Working with Individuals and Families 3 Prereq 3 hours in H D; juniorstanding. Development of skills important for effective human service professionals: communication, group dynamics, supervision, leadership, ethical behavior, cultural sensitivity, and others.
446 Practicum in Early Childhood Programs V 3 (0-9) to 6 (0-18) May be repeated for credit; cumulative maximum 12 hours. Prereq H D 341, 342. Teaching in department’s child development laboratory; emphasis on skill building in working with diverse groups and building partnerships with families.
449 Seminar in Early Childhood Education 3 Prereq H D 341, 342. Identification and examination of current issues and trends in early childhood education with emphasis on child, family, and community concerns.
464 Administration of Early Childhood Programs 3 Organization, administration, and management of early childhood programs: finance, program development, service delivery, personnel concerns, resource development, and evaluation. Available ONLY as a Distance Learning Flexible Enrollment Course.
482 Child Assessment and Evaluation 3 Prereq H D 201; 6 additional hours in H D. Understanding aspects of assessment and evaluation of young children; selection, administration, summary development, ethics and professional responsibilities, evaluation and follow-up.
485 Participation in Human Development Research V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq 9 hours in H D; junior standing. Supervised participation in faculty research including data collection, analysis, literature review, preparation of findings. S, F grading.
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 with private organizations, businesses, or government agencies; interaction with professionals in related fields. S, F grading.
499 Special Problems V 1-4 May be repeated for credit. S.F grading.
506 Work and Family 3 Graduate-level counterpart of H D 406; additional requirements. Credit not granted for both H D 406 and 506.
510 Proseminar in Human Development I Introductory to human development profession, departmental faculty and their research, WSU resources, conducting research, writing thesis; preparation for field placement.
511 Theory and Substance of Human Development I 3 Prereq graduate standing. Human development theories; application to life span development, cultural variations, resources, problem solving, interaction of families and individuals with other systems.
512 Theory and Substance of Human Development II 3 Prereq H D 511. Continuation of 511; theory and application to concepts and issues in human development.
513 Research Methods in Human Development I 3 Prereq graduate standing. Introduction to process of research and methods in human development; techniques of research, data collection, and data analysis procedures. Cooperative course taught by UI, open to WSU students (FCS 521).
514 Research Methods in Human Development II 3 Prereq H D 513. Integration of formal decision making into the social science research process; procedures appropriate for experimental, quasi-experimental and field research. Cooperative course taught by WSU, open to UI students (FCS 522).
515 Seminar 2 Prereq H D 510, 512, 514, 598 or c/. Application of knowledge in professional settings, analysis and integration of internship experience with theoretical and substantive expertise.
520 Adolescence 3 Prereq graduate standing. In-depth examination of theories and research, developmental issues and prevention and intervention programs for school-aged child and adolescents.
535 Program Development in Child, Family, and Consumer Sciences 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 work in all socioeconomic and age groups. Cooperative course taught by UI (FCS 560), open to WSU students.
800 Doctoral Research, Dissertation, and/or Examination Variable credit. For Interdisciplinary PhD only. S, F grading.

Department of Kinesiology and Leisure Studies

Professor and Acting Department Chair: D. Warner; Professors: L. Bruya, K. DePauw; Associate Professors: S. Blank, R. Doornink, M. Mowatt; Assistant Professors: C. Christie, E. C. Johnson, C. 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

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

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.


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, MvtSt 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

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
<th>Course</th>
<th>Credits</th>
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<tbody>
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<td>Engl 101</td>
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<td>3</td>
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<td>MvtSt 262</td>
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<td>MvtSt 364</td>
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<td>PEACT 112</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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### Junior Year

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<td>Ath T 400 Series</td>
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<td>GenEd 111 [A] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<th>Course</th>
<th>Credits</th>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Chem 240</td>
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### 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:

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<th>Freshman Year</th>
<th>Hours</th>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>First Semester</td>
<td>Hours</td>
<td>Course</td>
<td>Credits</td>
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<td>Ath T 465</td>
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<td>Ath T 465</td>
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<td>MvtSt 466</td>
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<td>MvtSt 466</td>
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<td>Ath T 400 Series</td>
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<td>MvtSt 415</td>
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<tr>
<td>RLS 482 or SpMgt 477</td>
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<td>RLS 482 or SpMgt 477</td>
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<td>Tier III Capstone (GER)</td>
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<tr>
<td>Electives</td>
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### Exercise Science, Clinical/Basic Physiology Degree Program (131 Hours)

<table>
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<th>Hours</th>
<th>Course</th>
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<td>ExSci 470</td>
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<td>ExSci 470</td>
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<tr>
<td>ExSci 476</td>
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<td>ExSci 476</td>
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<tr>
<td>H Ed 361</td>
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<td>H Ed 361</td>
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<tr>
<td>MvtSt 415</td>
<td>3</td>
<td>MvtSt 415</td>
<td>3</td>
</tr>
<tr>
<td>MvtSt 461 [M]</td>
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<td>MvtSt 461 [M]</td>
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<tr>
<td>Recommended Course (optional)</td>
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<table>
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<th>Course</th>
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<tr>
<td>ExSci 370</td>
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<td>ExSci 480</td>
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<tr>
<td>H Ed 363</td>
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<td>H Ed 363</td>
<td>2</td>
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<tr>
<td>MvtSt 362</td>
<td>3</td>
<td>MvtSt 362</td>
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</tr>
<tr>
<td>Recommended Course (optional)</td>
<td>3</td>
<td>Recommended Course (optional)</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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### Summer of Fourth Year

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<tr>
<td>ExSci 491</td>
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### Exercise Science, Fitness/Applied Physiology Degree Program (132 Hours)

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<tr>
<th>Jr Year</th>
<th>Hours</th>
<th>Course</th>
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<tbody>
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<td>First Semester</td>
<td>Hours</td>
<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>ExSci 370</td>
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<td>ExSci 463</td>
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1 For the clinical/basic physiology degree program, take Biol 103. For the fitness/applied degree program, take Biol 102.
2 For the clinical/basic physiology degree program, take Biol 104. For the fitness/applied degree program, take 2 credits of PEACT.
<table>
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<th>Hours</th>
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<td>MvtSt 415</td>
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<td>Second Semester</td>
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<td>ExSci 370</td>
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<td>ExSci 480</td>
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<td>MvtSt 362</td>
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<td>MvtSt 461 [M]</td>
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<td>Summer of Fourth Year</td>
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<tr>
<td>ExSci 491</td>
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**HEALTH AND FITNESS DEGREE PROGRAM (131 HOURS)**

This major program prepares individuals to teach physical education, health and fitness at the elementary and/or secondary levels. At all levels of instruction, individuals will acquire knowledge and skills necessary to maintain an active life involving movement, physical fitness and proper nutrition. Students will participate in activities that are designed to help them understand and value important health and fitness concepts and the contributions they make to a healthy lifestyle. Specific information involving teacher certification and admission to the teacher certification program can be found under the Department of Teaching and Learning.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
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**Sophomore Year**

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<td>PEACT Elective</td>
<td>1</td>
</tr>
<tr>
<td>T &amp; L 328</td>
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<tr>
<td>T &amp; L 404</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>ExSci 380</td>
<td>3</td>
</tr>
<tr>
<td>MvtSt 393</td>
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<td>MvtSt 415</td>
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<tr>
<td>MvtSt 484</td>
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<tr>
<td>T &amp; L 450</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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<td>Second Semester</td>
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<tr>
<td>T &amp; L 415 (student teaching)</td>
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</table>

**MOVEMENT STUDIES DEGREE PROGRAM (120 HOURS)**

See MOVEMENT STUDIES for courses formally listed as KINESIOLOGY.

This major program prepares students in Movement Science, Clinical/Basic Physiology, Exercise Science, Fitness/Applied Physiology, and/or Sport Management.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>FSHN 130 [B] (GER) or 233</td>
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<tr>
<td>H Ed 363</td>
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<tr>
<td>MvtSt 199</td>
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<tr>
<td>Psych 105 [S] (GER)</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biol 103 [B] (GER)</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>MvtSt 262</td>
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<td>MvtSt 364</td>
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<td>T &amp; L 301</td>
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**Sophomore Year**

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</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>H Ed 361</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<td>ComSt 102 [C] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<td>Physical Science [P] (GER)</td>
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<td>RLS 285</td>
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**Second Semester**

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<tr>
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<td>MvtSt 311</td>
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<td>MvtSt 313</td>
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<tr>
<td>MvtSt 481</td>
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<tr>
<td>Zool 251</td>
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**Junior Year**

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<td>MvtSt 362</td>
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<td>PEACT Elective</td>
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<tr>
<td>Elective Core</td>
</tr>
<tr>
<td>Electives</td>
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</tbody>
</table>

**Departmental Minors**


Health and Wellness: FSHN 130, H Ed 361, 363, PEACT (2 hours), MvtSt 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.

Sport Management: See Department of Educational Leadership and Counseling Psychology.

**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 admissions 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. Credit. PEACT activity course credit is granted on the basis of 1 credit for two one-hour classes per week. PEACT courses may not be repeated for credit, with the exception of PEACT 200 Special Topics (1 credit hour, repeatable to a maximum of 4 hours). Only 8 hours of PEACT credit may be applied toward graduation credit.

*Courses are graded A, S, or F, except as noted.*

**Physical Education Activity**

**PEACT**
1. **101** Beginning Conditioning, S, F grading.
2. **102** Beginning Conditioning ROTC
3. **105** Beginning Wrestling
4. **106** Self Defense
5. **107** Beginning Judo
6. **108** Karate
8. **114** Beginning Gym Tumbling
9. **116** Gymnastics
10. **118** Adapted Physical Education
11. **119** Aerobic Dance, S, F grading.
12. **120** American Social Dance Men
13. **121** American Social Dance Women
14. **122** Beginning Ballet
15. **124** Tap Dancing
16. **126** Beginning Mod Dance
17. **127** Beginning Jazz Dance
18. **128** Beginning Swimming
19. **130** Diving
20. **131** Scuba Diving
22. **133** Water Aerobics, S, F grading.
23. **134** Conditioning Skiing, S, F grading.
24. **135** Aqua Fitness
25. **137** Boating Safety Instruction
27. **140** Jogging, S, F grading.
28. **141** Beginning Golf
29. **142** Beginning Bowling
30. **145** Beginning Fencing Men
31. **146** Beginning Fencing Women
32. **147** Beginning Rollerskating and Rollerblading
33. **148** Beginning Badminton
34. **150** Beginning Tennis
35. **152** Pocket Billiards
36. **153** Ultimate Frisbee
37. **154** Beginning Racquetball
38. **158** Beginning Volleyball
39. **160** Beginning Flag Football, S, F grading.
40. **162** Beginning Basketball, S, F grading.
41. **164** Beginning Soccer
42. **174** Beginning Skiing, S, F grading.
43. **177** Intermediate Racquetball
44. **181** Beginning Roller Hockey
45. **200** Special Topics
46. **201** Intermediate Conditioning ROTC
47. **208** Intermediate Karate
48. **220** Advanced Social Dance Men
49. **221** Advanced Social Dance Women
50. **222** Intermediate Ballet
51. **224** Intermediate Tap Dance
52. **227** Intermediate Jazz Dance
53. **228** Intermediate Swimming
54. **231** Advanced Scuba Diving
55. **234** Emergency Water Safety
56. **235** Lifeguarding
57. **236** Lifesaving Recertification
58. **241** Intermediate Golf
59. **242** Advanced Golf
60. **243** Intermediate Bowling
61. **245** Intermediate Fencing Men
62. **246** Intermediate Fencing Women
63. **247** Advanced Racquetball
64. **250** Intermediate Tennis
65. **251** Advanced Tennis
66. **253** Advanced Ultimate Frisbee
67. **258** Intermediate Volleyball
68. **259** Advanced Volleyball
70. **262** Intermediate Basketball, S, F grading.
71. **264** Intermediate Soccer
72. **265** Advanced Soccer
73. **266** Fly Fishing
74. **274** Intermediate Karate
75. **275** Advanced Skating, S, F grading.
76. **278** Intermediate Roller Hockey
77. **282** Competitive Roller Hockey

**Athletic Training**

**Ath T**

1. **266** Care and Prevention of Athletic Injuries 3 (2-3) Prereq MvSt 262 or UI. Administration of school sports health care program; prevention, treatment, and rehabilitation of sports injuries.
2. **305** Nutrition Related to Fitness and Sport 3 (2-3) Prereq FSHN 130 or 233. Identification of energy, macro/micro nutrient and fluid requirements during exercise; evaluation of dietary regimens and ergogenic aids for pre and post competition, weight maintenance, and wellness. Cooperative course taught by UI (FCS 305), open to WSU students.
3. **311** Kinesthetic Training 3 Prereq ExSci 264, MvSt 262, PEACT 112. Basic information and guidelines for enhancement of athletic performance, injury prevention, rehabilitation and general fitness.
4. **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.
5. **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).
6. **391** Advanced Strength Training 3 Prereq MvSt 311. Advanced methods as they apply to the enhancement of athletic performance, injury prevention, rehabilitation and general fitness.
7. **411** Advanced Strength Training 3 Prereq MvSt 311. Advanced methods as they apply to the enhancement of athletic performance, injury prevention, rehabilitation and general fitness.
12. **445** 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 445).
13. **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).
14. **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).
15. **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).
16. **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).
17. **490** Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Prereq Ath T 266, MvSt 262. S, F grading.
18. **491** Athletic Training Clinical Internship 3 (0-9) By interview only. Beginning techniques in management of sport injury/illness under supervision of a certified athletic trainer. S, F grading.
19. **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.
20. **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.
21. **499** Special Problems V 1-4 May be repeated for credit. S, F grading.

**Exercise Science**

**ExSci**

1. **264** (364) Nutrition 3 (2-3) Physiological, mechanical, and health-related basis of fitness practices.
2. **370** Physical Assessment 1 (0-3) May be repeated for credit; cumulative maximum 4 hours. Prereq ExSci 364. Application of common physiological/physical measurements in a variety of subjects. S, F grading.
3. **380** Introduction to Exercise Physiology 3 Prereq Zool 251. Introduction to exercise physiology as it relates to sport, physical training, and performance.
4. **463** Physiology of Exercise 4 (3-3) Prereq ExSci 380, MvSt 262 or Zool 315; Zool 251. Advanced undergraduate exercise physiology with emphasis on mechanisms regulating physiological responses to exercise across the life span.
7. **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.
Health Education

H Ed

262 (363) First Aid 2 (1-3) First aid; CPR; accident prevention; American Red Cross certification awarded to those who qualify.

361 Health and Wellness 3 Knowledge of the multidimensional aspects of wellness and concepts necessary for a positive lifestyle through self-assessment.

463 Methods of First Aid Instruction 2 (1-3) Prereq Red Cross First aid and CPR certificate. Red Cross Standard First Aid and CPR instructor training; certification to those who qualify.

481 Health Education Methods 3 Prereq H Ed 361. Methods and materials for teaching Health Education.

490 Instructional Practicum V 1-4 May be repeated for credit; cumulative maximum 6 hours. Same as MvtSt 490. S, F grading.

496 Special Topics V 1-3 May be repeated for credit; cumulative maximum 9 hours. Special topics in health promotion for the aged. Cooperative course taught by WSU, open to UI students (PE 552).

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

Kinesiology

Kin

501 Trends and Issues in Kinesiology 3 May be repeated for credit; cumulative maximum 6 hours. Exploration of trends and issues in kinesiology.

552 Neurological Impairment and Motor Behavior 3 Neuropsychological components of normal and abnormal motor behavior as a result of neurological impairments/dysfunction in children through the aged. Cooperative course taught by WSU, open to UI students (PE 551).

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 552).

554 Sport and Individuals with Disabilities 3 Issues and opportunities in sport for individuals with disabilities. Cooperative course taught by WSU, open to UI students (PE 554).

560 Epidemiology, Exercise and Health 3 Prereq graduate standing. Epidemiological approach to the study of health benefits/risks of exercise in youth, adults, women and ethnic groups.

562 Pediatric Exercise Physiology 3 Rec MvtSt 463. Influence of physical development on physiological responses of children and adolescents to exercise and training.

563 Exercise and Immune Response 3 Rec MvtSt 463. Influence of physical exercise on immune response and consequent impact on host susceptibility to disease and infection.

564 Mechanical Analysis of Motor Activity 3 Prereq MvtSt 463. Basic laws of mechanics applied to motor activities. Cooperative course taught by WSU, open to UI students (PE 564).

565 Advanced Physiology of Exercise I 3 Rec MvtSt 463. Bioenergetic, striated muscle metabo- lism, and neuroendocrine responses to exercise and training.

566 Biomechanics 3 Prereq MvtSt 564. Biological and mechanical aspects of human movement. Cooperative course taught by WSU, open to UI students (PE 566).

567 Advanced Physiology of Exercise II 3 Rec MvtSt 463. Pulmonary, circulatory, thermoregulatory, fluid balance and physiological system integration responses to exercise and training.

568 Fitness Assessment and Prescription 3 Prereq MvtSt 463. Development of skills in testing analysis, and prescription for health-related fitness. Cooperative course taught by UI (PE 593), open to WSU students.

573 Philosophical Perspectives of Sport and Physical Activity 3 Ontological, ethical, aesthetic views of physical activity.

574 Social and Cultural Issues of Physical Activity and Sport 3 Exploration, analysis and understanding of human movement in the context of the individual, cultural, and physical environments.

578 Sports in Society 3 The social significance of sport and the process of sport research.

579 Psychology and Physical Activity 3 Current research findings in psychology pertinent to the teaching and coaching of physical activities.


582 Observation and Analysis of Teaching Physical Activity 3 (2-3) Systematic approach to observation/analysis of teaching physical activity; evaluation of instructional process. Cooperative course taught jointly by WSU and UI (PE 552).

583 Teaching Strategies in Physical Activity 3 Research materials and methods related to effective teaching in physical education.

585 Curriculum Development in K-12 Physical Education 3 (2-3) Principles of curriculum construction and the process of curricular development. Cooperative course taught jointly by WSU and UI (PE 554).


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 1 (0-3) May be repeated for credit; cumulative maximum 4 hours. By interview only. Supervised experience in college teaching. S, F grading.

599 Special Problems 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.

600 Special Problems, Directed Study, and/or Examination 3 Variable credit. S, F grading.

609 Doctoral Research, Dissertation, and/or Examination 3 Variable credit. S, F grading.

Movement Studies

MvtSt

196 (Kin) Introductory Topics 1 May be repeated for credit; cumulative maximum 4 hours. Physical Movement promoting health, dance, health sports.


262 (Kin) Human Anatomy 4 (3-3) Comprehensive survey of the structure and organization of the human body; emphasis on skeletal, cardiovascular, nervous, and respiratory systems. Cooperative course taught by WSU, open to UI students (PE 261).

289 (Kin) Introduction to Youth Sports 2 Same as RLS 289.

296 (Kin) Applied Computer Technology 1 (0-3) Application of scholarly concepts with the help of multimedia technology.

313 (Kin) Behavioral Aspects of Human Movement 3 Prereq Psych 105 or Soc 101. Psychological, sociological, and anthropological concepts which relate to human movement and human performance.

314 (Kin) Philosophy of Human Movement 3 The philosophical dimensions of physical education, sport, and dance.

317 (Kin) Practicum and Seminar 3 (1-6) 10 hours in the subject-matter major, S, F grading.

362 (Kin) Biomechanics 3 Prereq junior standing; MvtSt 262 or Zool 315; math proficiency requirement. Anatomical and mechanical influences on human movement.

384 (Kin) 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 (Kin) 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 (Kin) 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.

392 (Kin) 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 (Kin) 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 (Kin) Assessment 3 (2-3) Prereq senior in KLS. Program evaluation of human techniques for curriculum pertaining to human movement.

1 Combined maximum for MvtSt and RLS 300-level practicum courses 8 hours.
461 (Kin) [M] Motor Skill Acquisition 3 Motor learning and motor control areas; neural mecha-
nisms, practice, feedback, retention, and transfer application of theoretical concepts.

473 (Kin) Physical Education for Grades K-8 2 (1-3) Materials, management methods, lab experi-
ences for teaching physical education K-8.

475 (Kin) Marginality and Movement 3 Under-
standing of the current status of women’s sports participation in the U.S. and of the woman partici-
pant herself.

481 (Kin) Analysis of Human Movement 3 (2-3) Development of knowledge and skills which as-
sist the physical education teacher in planning for and responding to student skill learning.

483 (Kin) Fitness Education Methods 3 (2-3) Prereq MVtsI 481. Basic principles, theory, practice of
development and maintenance of fitness for health and physical performance; emphasis on
application for teachers.

484 (Kin) Principles of Movement for Individuals with Disabilities 3 Knowledge, understanding,
and skills for teaching movement activities to in-
dividuals with disabilities.

490 (Kin) Instructional Practicum V 1-4 May be
repeated for credit; cumulative maximum 6 hours. S, F grading.

496 (Kin) Special Topics 1 May be repeated for
credit; cumulative maximum 4 hours. Physical
education, leisure, recreation, dance, health sports.

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

Recreation and Leisure Studies

RLS

110 Recreation for Special Populations 3 History, etiology, characteristics, services, resources, pro-
fessional competencies and opportunities; recre-
ation programs. Credit not granted for both RLS
110 and 383. Cooperative course taught by UI
(Rec 110), open to WSU students.

221 Outdoor Recreation 4 (2-6) Experiential learn-
ing of outdoor recreation skills and techniques.
Field trips required. S, F grading.

229 Nature and the American Experience V 1-6
May be repeated for credit; cumulative max-
umum 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 con-
ditions: 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; socio-eco-
nomic 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 maxi-
umum 6 hours. Field study and readings in outdoor
recreation administrative, managerial, and plan-
ing.

289 Introduction to Youth Sports 2 Coaching phi-
losophy; sport psychology, conditioning, and
pedagogy; physiology; legal aspects; recrea-
tional youth sports programs.

321 Social Psychology of Leisure and Recreation 3
Prereq Psych 105, Soc 101 or 102; RLS 275, 285; certified major in RLS. Presentation, inter-
pretation and discussion of research and literature re-
lated to the social psychological aspects of leis-
ure and recreation.

330 Therapeutic Recreation Programs for People with
Disabilities 3 Prereq RLS 110. Prevalent disabili-
ting conditions (including etiology, symptom-
tatology, and characteristics), and their impli-
cations for programming intervention in clinical
settings. Field trip required. Cooperative course
taught by UI (Rec 330), open to WSU students.

341 Commercial Recreation 3 Prereq RLS 275, 285.
Identification, organization, and functions of the
various types of commercial recreation busi-
nesses; marketing recreation and leisure services.

342 Therapeutic Recreation in Psychiatric Settings
3 Prereq 10 hours outside experience. Therapeu-
tic recreation delivery in psychiatric settings, in-
cluding long-term settings such as state hospitals,
acute inpatient psychiatric settings, and commu-
nity mental health centers; major psychiatric dis-
orders; how to work as a part of an interdiscipli-
nary team, and the viable role of recreation in the
treatment process. Cooperative course taught by
UI (Rec 342), open to WSU students.

344 Assessment and Evaluation in Therapeutic Recrea-
tion 2 Standardized assessment and evalua-
tion tools currently used in therapeutic recreation
services; integration of assessment practices into
therapeutic recreation programs and how to
choose standardized tools appropriate to both cli-
ent and professional setting; practical assessment
situations. Cooperative course taught by UI
(Rec 341), open to WSU students.

365 Recreation for the Elderly 3 Recreation pro-
gramming 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.

371 Wildland Recreation 3 Same as NATRS 371.

375 Recreation Programming 3 (2-3) Prereq RLS
285; certified major in RLS. Current principles
and practices in recreation programming.

383 Therapeutic Recreation Service 3 Prereq RLS
285. Foundations for therapeutic recreation ser-
viceRecreation for people with disabilities and older adults. Credit not granted for both RLS 110 and 383.

388 Urban Parks 3 RLS 285. Problems, methods,
and techniques of park resource man-
agement in urban parks.

390 Practicum in Commercial Recreation V 1-0 (3-4)
may be repeated for credit, cumula-
tive maximum 8 hours. By interview only.
Supervised practicum. S, F grading.

391 Practicum in Municipal/Agency V 1 (0-3) to 4
(0-12) May be repeated for credit; cumulative
maximum 8 hours. By interview only. Superv-

392 Practicum in Parks/Facilities V 1 (0-3) to
4 (0-12) May be repeated for credit; cumulative
maximum 8 hours. By interview only. Supervi-
sed practicum. S, F grading.

393 Practicum in Therapeutic Recreation V 1 (0-3) to
4 (0-12) May be repeated for credit; cumula-
tive maximum 8 hours. By interview only.
Supervised practicum. S, F grading.

394 Practicum in Recreation Research V 1 (0-3) to
4 (0-12) By interview only. May be repeated for
credit; cumulative maximum 8 hours. Supervised practicum. S, F Grading.

421 [M] Assessment in Recreation and Leisure 3
Prereq RLS 321 or approved stat course; Rec
Math 205. Designing, implementing, and inter-
preting the information generated by instruments
which evaluate recreation and leisure needs, leis-
ure service programs, and personnel.

430 Problems in Therapeutic Recreation 3 Prob-
lems encountered in the delivery of therapeutic
recreation services to clients with special needs.
Cooperative course taught by UI (Rec 435), open
to WSU students.

431 Medical Terminology 1 Basic concepts of medi-
cal terminology and symbols related to working
with people with disabilities. Cooperative course
taught by UI (Rec 431), open to WSU students.

435 Comprehensive Planning and Operations in
Leisure Services 3 Prereq RLS 321, 375. Tech-
niques and problem solving in the planning and
operation of leisure services. Credit not granted
for both RLS 435 and 535.

467 Therapeutic Recreation for People with Devel-
opmental Disabilities 3 Prereq RLS 110. Program-
ing models for people with development-
dal disabilities; TR intervention from develop-
mental sequencing to community reintegra-
tion; assessment and treatment planning incorpo-
ated into lab experience. Field trip re-
quired. Cooperative course taught by UI (Rec
467), open to WSU students.

473 Physical Education for Grades K-8 2 (1-3)
Same as MvSt 473.

475 Leisure Services Administration 3 Prereq RLS
375. Financing and organizing leisure services,
with attention to public recreation agencies.

481 [M] Leisure Services Administration 3 Prereq
RLS 375. Principles underlying the orga-
nization, management and administration of leis-
ure service delivery systems.

482 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 (REC 482).

484 Principles of Movement for Individuals with
Disabilities 3 Same as MvSt 484.

488 [M] Current Trends in Parks and Recreation 3
Prereq RLS 475. Current trends and issues in parks
and recreation; professional development, intern-
ship procedures, and employment procedures.

490 Instructional Practicum V 1-4 May be repeated
for credit; cumulative maximum 6 hours. Same
as MvSt 490. S, F grading.

491 Internship V 10-12 Prereq RLS 481, 488; 1000
hours practical experience. By interview only. Su-
upervised practicum in agency or business. S, F
grading.

496 Special Topics V 1-3 May be repeated for credit;
cumulative maximum 6 hours.

497 Special Topics V 1-3 May be repeated for credit;
cumulative maximum 6 hours.

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

520 Current Trends in Leisure Services 1 Histori-
cal development and possible outcomes of cur-
rent trends and issues in leisure services.

521 Program Development and Supervision 3 Lei-
sure programming process including development
and evaluation techniques; application of pro-
gramming theory to the supervision of programs.
Lib A
497 Extended Degree Program Internship V 2-16 May be repeated for credit; cumulative maximum 16 hours. Prereq junior standing. Extended Degree Program student participation as paid or unpaid intern in a government unit or a non-profit organization.

Program in Materials Science


Materials science includes the principles and practice of designing, synthesizing, characterizing, preparing, and fabricating useful materials. The Materials Science Program accepts qualified bachelor’s and master’s graduates in the sciences and engineering who now wish to pursue graduate research for a PhD in the area where the disciplines overlap. A broad range of topics is included under this program and it is usual for students to select one of the following tracks within materials science:

- **CHEMICAL PHYSICS** track emphasizes condensed matter and atomic and molecular physics and chemistry, including application of spectroscopy to synthesis, irradiation effects at surfaces, thin film phenomena, and layered and atomic structures.

- **MATERIALS ENGINEERING** track emphasizes the methodology and principles relating the structure of metals, polymers, and ceramics to their mechanical, physical, and chemical properties and their utilization.

- **MATHEMATICAL PHYSICS AND CHEMISTRY** track emphasizes applications of condensed matter, atomic and molecular physics and chemistry to improve understanding of the processing and characterization of materials. Students who plan a career in materials science are expected to obtain a strong foundation in mathematics, physics, and chemistry.

Requirements for the Materials Science PhD include a minimum of 72 credit hours of which at least 34 hours are advanced courses in chemistry, engineering, and physics. Students must attend the materials science seminar program. Additional required courses (23 hours or more) vary with the chosen track and the research programs of individual students. In the chemical physics track, students are required to study quantum mechanics, atomic and molecular physics, atomic and molecular phenomena, and group theory which should be supplemented with a selection from advanced chemistry, physics and materials engineering courses. In the materials engineering track the required courses are mechanical properties and applied mathematics to be supplemented with selected materials science engineering and related courses. In the materials physics and chemistry track students must take quantum mechanics which should be supplemented by advanced courses in chemistry, engineering, and physics.

An original research dissertation (Mat S 800) is required. After admission to candidacy for the degree, students select a research supervisor from the materials science faculty. A broad spectrum of contemporary research areas is available.

**Description of Courses**

**Liberal Arts Courses**

**Description of Course**

**Liberal Arts**

**Program in Materials Science**

**Materials Science**

**Mat S**

**Current Topics in Materials Science** V 1-3 May be repeated for credit. Recent advances and current research at the forefront of materials science.

**Crystal Plasticity** 3 Same as MSE 513.

**Phase Transformations** 3 Same as MSE 516.

**Special Topics V 1-3** May be repeated for credit. Selected topics of current interest in advanced materials science.

**Microscopic Analysis of Solid Surfaces** 3 Modern spectroscopic methods for microscopic analysis of solid surfaces; emphasizes electron, ion, laser, and X-ray techniques.

**Seminar 1** May be repeated for credit; cumulative maximum 3 hours. Same as MSE 520.

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

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

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1 Combined maximum for MvSt and RLS 300-level practicum courses 8 hours.

**Department of Pure and Applied Mathematics**


The Department of Pure and Applied Mathematics provides undergraduate instruction and training in all major fields of mathematics. The numerous service courses taught by the department reflect the growing importance of mathematics in an increasing number of other disciplines.

Undergraduate training for mathematics majors is provided at WSU in the following seven options: Actuarial Science, Applied Statistics, Computational Mathematics, Mathematical Modeling, Operations Research, Secondary Mathematics Teaching, and Theoretical Mathematics. The first six options prepare students for careers related to the respective fields, while the option in Theoretical Mathematics is the traditional curriculum for Mathematics majors. Talented undergraduate majors in mathematics are given individual and small group instruction outside of class, sometimes resulting in research publications.

The mathematics major also prepares students for
graduate study in such fields as business, economics, management science and computer science, as well as mathematics and statistics.

Graduate study and specialization are offered by the department in both classical and modern areas. The Doctor of Arts and the PhD with Teaching Emphasis programs are specially designed for future college teachers, while the several options in applied mathematics, which include an internship experience, provide graduate preparation for mathematical careers in business and industry.

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 m Apache Point Telescope which can be operated remotely from the WSU campus.

All freshmen and transfer students are required to take the Mathematics Placement Test (MPT). The MPT will be waived only if the student has already completed a college mathematics course with a grade of C or higher OR has an appropriate quantitative SAT percentile OR has passed an SAT Advanced Placement Test in Mathematics. See our website for cutoffs required on the various tests: www.sci.wsu.edu/math/placement. The MPT requirement is also waived for transfer students who have already satisfied General Education Requirements (GERs) and do not intend to take a mathematics course at WSU.

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.

### Degree Program Requirements

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

There is a core of requirements common to all of the mathematical sciences options. Students are required to take the core courses and to complete one of the degree programs listed below.

A major in mathematics requires Math 171, 172, 220, 273, 300, 315; 360 or 443; 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**

<table>
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<th>Course</th>
<th>Hours</th>
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<tr>
<td>Degree Program Course, if necessary</td>
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<td>Engl 101 [W] (GER)</td>
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**Second Semester**

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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Math 171 [N] (GER)</td>
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* Students in Actuarial Science take Econ 101 [S] (GER).

### ACTUARIAL DEGREE PROGRAM (127 HOURS)

#### Freshman Year

**Second Semester**

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<th>Course</th>
<th>Hours</th>
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<tr>
<td>Cpt S 150 or two of Cpt S 153, 203, or 251</td>
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<tr>
<td>Econ 102 [S] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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### Sophomore Year

**First Semester**

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<th>Course</th>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Math 273</td>
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<td>Phys 201 [P] (GER)</td>
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**Second Semester**

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<th>Hours</th>
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<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<td>Intercultural [I,G,K] (GER)</td>
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<td>Math 300</td>
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<tr>
<td>Math 315</td>
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### Junior Year

**First Semester**

<table>
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<tr>
<td>Accetg 230</td>
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<td>Engl 402 [W] (GER)</td>
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<td>Math 364</td>
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<td>Math 420</td>
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**Second Semester**

<table>
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<tr>
<td>Accetg 231</td>
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<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>B Law 210</td>
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<td>Math 340</td>
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<td>Math 421 [M]</td>
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### Senior Year

**First Semester**

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<th>Course</th>
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<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<td>Ins 320</td>
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<td>Math 401 [M]</td>
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<td>Math 448</td>
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**Second Semester**

<table>
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<tr>
<td>Econ 301</td>
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<td>Econ 411</td>
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<td>Math 398</td>
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<tr>
<td>Math 402 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Math 464</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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### APPLIED STATISTICS DEGREE PROGRAM (124 HOURS)

#### Freshman Year

**Second Semester**

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<th>Course</th>
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<tbody>
<tr>
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<td>Cpt S 150 or two of Cpt S 153, 203, or 251</td>
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### Sophomore Year

**First Semester**

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Math 220</td>
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<tr>
<td>Math 273</td>
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<td>Phys 201 [P] (GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 300</td>
<td>3</td>
</tr>
<tr>
<td>Math 315</td>
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<td>Math 360</td>
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### Junior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Engl 402 [W] (GER)</td>
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<tr>
<td>Math 364</td>
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<tr>
<td>Math 420</td>
<td>3</td>
</tr>
<tr>
<td>Math 443</td>
<td>3</td>
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<td>Tier III Capstone (GER)</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</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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<td>Cpt S 250</td>
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<td>Math 398</td>
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<td>Math 421</td>
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<td>Math 442</td>
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### Senior Year

**First Semester**

<table>
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<th>Course</th>
<th>Hours</th>
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<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<td>Dec S 418</td>
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<td>Math 417</td>
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<td>Math 401 [M]</td>
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<td>Stat 530i</td>
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**Second Semester**

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<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
<td>3</td>
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<tr>
<td>Math 402 [M]</td>
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<td>Math 448</td>
<td>3</td>
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<td>Math 464</td>
<td>3</td>
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<tr>
<td>Statistics Electivei</td>
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* Strongly recommended.

### COMPUTATIONAL DEGREE PROGRAM (122 HOURS)

#### Freshman Year

**Second Semester**

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<td>Cpt S 203</td>
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<td>Math 172</td>
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<td>Social Sciences [S,K] (GER)</td>
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### Sophomore Year

**First Semester**

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<th>Course</th>
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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<td>Math 220</td>
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<td>Math 273</td>
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<td>Phys 201 [P] (GER)</td>
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**Second Semester**

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<th>Course</th>
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<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<tr>
<td>Operational Modeling Degree Programs (122 Hours)</td>
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**SECONDARY MATHEMATICS TEACHING DEGREE PROGRAM (135 HOURS)**

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<td>GenEd 111 [A] (GER)</td>
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</tr>
<tr>
<td>Sophomore Yr</td>
<td>1st Sem</td>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<td></td>
<td></td>
<td>Math 300</td>
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<td>Math 315</td>
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<td>Math 360</td>
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<td>2nd Sem</td>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<td>Math 360</td>
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<td>Electives</td>
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<tr>
<td>Junior Yr</td>
<td>1st Sem</td>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<td>2nd Sem</td>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<td>Math 300</td>
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<td>Math 360</td>
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<td>Electives</td>
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**OPERATIONS RESEARCH DEGREE PROGRAMS (122 HOURS)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester</th>
<th>Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Yr</td>
<td>2nd Sem</td>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cpt S 153</td>
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</tr>
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<td>Sophomore Yr</td>
<td>1st Sem</td>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<td></td>
<td>Math 300</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2nd Sem</td>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 300</td>
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<td></td>
<td></td>
<td>Math 315</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Math 364</td>
<td>3</td>
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<tr>
<td>Junior Yr</td>
<td>1st Sem</td>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<td></td>
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<td>Math 300</td>
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<td>Math 360</td>
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<td>2nd Sem</td>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
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<td></td>
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<td>Math 300</td>
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<td>Math 315</td>
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<td>Math 360</td>
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<tr>
<td></td>
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<td>Electives</td>
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</table>

Department of Pure and Applied Mathematics
### Second Semester  
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Math 320 [M] or 421 [M]</td>
<td>3</td>
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<tr>
<td>Math Elective</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
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</table>

**Directed Teaching**  
T & L 415  
16

### THEORETICAL MATHEMATICS DEGREE PROGRAM (122 HOURS)

**Freshman Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Second</td>
<td>ComSt 102 [C] (GER)</td>
<td>3</td>
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<tr>
<td></td>
<td>Cpt S 150 or two of Cpt S 153, 203, or 251</td>
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<tr>
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<td>GenEd 111 [A] (GER)</td>
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<tr>
<td></td>
<td>Math 172</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Social Sciences [S,K] (GER)</td>
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**Sophomore Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First</td>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td></td>
<td>Math 220</td>
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<td>Math 273</td>
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<tr>
<td></td>
<td>Phys 201 [P] (GER)</td>
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<tr>
<td>Second</td>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
<td>4</td>
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<tr>
<td></td>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td></td>
<td>Math 300</td>
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<td>Math 315</td>
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<td>Math 360 or 443</td>
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**Junior Year**

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<th>Semester</th>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First</td>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<td>Engl 402 [W] (GER)</td>
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<tr>
<td></td>
<td>Math 302 or 453</td>
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<td>Math 420</td>
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<td>Elective</td>
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<tr>
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<td>Complete Writing Portfolio</td>
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### Second Semester  
<table>
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<th>Course</th>
<th>Hours</th>
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<tbody>
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<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER)</td>
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<tr>
<td>Math 375 or 415</td>
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<td>Math 398</td>
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<td>Math 421 [M]</td>
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<tr>
<td>Math 441</td>
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<td>Electives</td>
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**Senior Year**

<table>
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<tr>
<th>Semester</th>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First</td>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER)</td>
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</tr>
<tr>
<td></td>
<td>Math 401 [M]</td>
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<td>Math Elective</td>
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<td>Electives</td>
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<tr>
<td>Second</td>
<td>Math 303, 325, or 464</td>
<td>3</td>
</tr>
<tr>
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<td>Math 402 [M]</td>
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<td>Tier III Capstone (GER)</td>
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<tr>
<td></td>
<td>Electives</td>
<td>6</td>
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</tbody>
</table>

### Certification Requirements

1. Applications for certification are accepted at any time during fall and spring semesters. Decisions are made within ten working days of receipt of application. Application forms are available in the Mathematics Department office and at the Student Advising and Learning Center (SALC), Lighty 260.
2. Applications are evaluated, and certification decided, by a faculty committee.
3. Applicants must have an overall grade point average of at least 2.0.
4. The mathematics core consists of Math 171, 172, 220. This core (or its equivalent for transfer students) must be completed before application.
5. Students with at least a 2.5 grade point average in the mathematics core will be certified automatically. Those with less than a 2.0 g.p.a. in the mathematics core will normally not be certified. Others will be considered on a case-by-case basis.
6. Appeals on certification decisions are considered by the department chairperson.
7. Students who are denied certification may reapply after completing at least 12 more semester hours, whereupon decisions are based on grades in mathematics, science, and computer science courses; cumulative grade point average and grade patterns; and a personal interview.
8. Certified students whose cumulative grade point average or grade point average in mathematics courses numbered 171 and above falls below 2.0 for two consecutive semesters, or who are academically deficient, are subject to decertification.
9. Applications for recertification are handled in the same manner as certification applications for those previously denied.
10. Women and minorities are encouraged to apply. Special consideration will be given to affirmative action candidates.

### Mathematics Minor

A mathematics minor requires 18 hours, with at least 9 hours of 300-400-level credits (excluding Math 330, 351, 431, 497). The g.p.a. requirements for the major (see graduation requirements) also apply to the minor in mathematics.

Courses required for either the major or minor may not be taken pass, fail.

### 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

**Math**

- **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, 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.

- **301 [N] Advanced Calculus I 3** Prereq Math 101 or satisfactory math placement score. Nature and scope of modern mathematics, relations to other disciplines.

- **312 [N] Introduction to Statistical Methods** 4 3-3 Same as Stat 212.

- **316 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 C or better. Logical and historical development of present-day number systems and associated algorithms; methods of problem solving.

252 [N] Mathematics for Elementary School Teachers II 3 Prereq one year high school geometry; Math 251. Informal approach to basic ideas: mensuration, geometrical constructions, similarity, congruence, symmetry, probability, counting principles, measures of central tendency, graphical representation.

273 Calculus III 2 Prereq Math 172; 220 or c//. Calculus of functions of several variables.

283 Honors Calculus III 2 Prereq Math 182 or by permission. Multivariable calculus with emphasis on conceptual development and problem solving.


302 Theory of Numbers 3 Prereq Math 172, 220. Divisibility properties of integers; congruences; Diophantine equations; quadratic residues.


315 Differential Equations 3 Prereq Math 220, 273. Linear differential equations and systems; series, numerical and qualitative approaches; applications.

320 [M] Elementary Modern Algebra 3 Prereq Math 220. Algebra as a deductive system; number systems; groups, rings, and fields.

325 Elementary Combinatorics 3 Prereq Math 220. Introduction to combinatorial theory: counting methods, binomial coefficients and identities, generating functions, occurrence relations, inclusion-exclusion methods.


351 Mathematics for Elementary School Teachers III 3 Prereq Math 252. Geometric transformations, coordinate methods in geometry, applications of school mathematics, mathematics software.


364 Principles of Optimization 3 Prereq Math 202 or 220. Algebra of linear inequalities; duality; graphs, transport networks; linear programming; special algorithms; nonlinear programming; selected applications.

375 Vector Analysis 3 Prereq Math 315. Line integrals, gradient, curl, divergence; Stokes’ theorems.

397 Mathematicians at Work 1 Introduction to various options in mathematics and the oral, written and leadership skills required for success in the field.

398 Mathematical Snapshots 1 Prereq Math 172. Character, life work, and historical importance of mathematicians from various eras and branches of mathematics.

401 [M] Introduction to Analysis I 3 Prereq Math 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 stat course. Current topics in probability and statistics of mutual interest to faculty and students. Credit not granted for both Math 410 and 510.

415 Intermediate Differential Equations 3 Prereq Math 315. Linear systems; qualitative theory (existence, uniqueness, stability, periodicity); boundary-value problems; applications.

416 Simulation Methods 3 Prereq Cpt S 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 Biol 430, or c// Math 172, 251. For preselected teachers. New curricula and pedagogical techniques for middle school/high school instruction in science and mathematics. Credit not granted for both Math 431 and 531.

432 Foundations of Secondary School Mathematics 3 Prereq 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.

433 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 433 and 534.

435 Astronomy and Astrophysics 3 May be repeated for credit; cumulative maximum 6 hours. Same as Astr 435.

439 Applications of School Mathematics 3 Prereq Math 432. For preselected teachers. Role of application in the classroom; examples using arithmetic, algebra, geometry, counting principles and probability; teaching concepts in applications. Credit not granted for both Math 439 and 539.

440 Applied Mathematics I 3 Prereq Math 315. Partial differential equations; Fourier series and integrals; Bessel functions; calculus of variations; vector calculus; applications. Credit not granted for both Math 440 and 540.

441 Applied Mathematics II 3 Prereq Math 315. Complex variable theory including analytic functions, infinite series, residues, and conformal mapping; Laplace transforms; applications. Credit not granted for both Math 441 and 541.

443 Applied Probability 3 Prereq Math 172, 220. Axioms of probability theory; random variables; expectation; generating function; law of large numbers; central limit theorem; Markov chains. Cooperative course taught jointly by WSU and UI (Math 451).

448 Numerical Analysis 3 Prereq FORTRAN, C, or other programming language; Math 315. Fundamentals of numerical computation; finding 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, network, Eulerian and Hamiltonian paths, matrix representations, construction of algorithms. Credit not normally granted for both Math 453 and 553.

456 Introduction to Statistical Theory 3 Prereq Math 430 or 443. Sampling distributions; hypothesis testing and estimation; maximum likelihood; likelihood ratio tests; theory of least squares; nonparametrics. Cooperative course taught jointly by WSU and UI (Math 452). Credit not granted for both Math 456 and 556.

461 metallurgical Control and Optimization 3 Basics of process control and optimization applied to metallurgical engineering. Cooperative course taught by UI (Met 461), open to WSU students.

464 Operations Research and Game Theory 3 Prereq Math 273. Linear and integer programming; optimization problems; applications to economic and military strategies; rectangular games; minimax theory. Cooperative course taught by WSU, open to UI students (Math 464).

466 Optimization in Networks 3 Prereq Math 325 or 364, or knowledge of linear programming. Formulation and solution of network optimization problems including shortest path, maximal flow, minimum cost flow, assignment, covering, postman, and salesman. Credit not granted for both Math 466 and 566.

481 Topics in Analysis 3 May be repeated for credit.
518 Mathematical and Scientific Visualization 3
Prereq graduate standing. Graduate-level counter-
part of Math 418; additional requirements.
Credit not granted for both Math 418 and 518.

520 Linear Algebra 3
Prereq graduate standing. Graduate-level counterpart of Math 420; addi-
tional requirements. Credit not granted for both Math 420 and 520.

521 Algebraic Structures 3
Prereq graduate standing. Graduate-level counterpart of Math 421; addi-
tional requirements. Credit not granted for both Math 421 and 521.

523 Statistical Methods for Engineers and Scientists 3
Prereq graduate standing. Graduate-level counterpart of Math 423; additional requirements. Credit not granted for both Math 423 and 523.

525 General Topology 3
Prereq Math 420. 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).

526 Advanced Topology 3
Prereq Math 421, 525. General topology; basic ideas of algebraic topol-
ogy. Cooperative course taught jointly by WSU and UI (Math 512).

527 Algebraic Topology 3
Prereq Math 526. Basic homotopy theory and application. Cooperative
course taught by UI (Math 523), open to WSU students.

528 Algebraic Topology 3
Prereq Math 527. Continu-
ation of Math 527. Cooperative course taught by UI (Math 524), open to WSU students.

531 Topics in Science and Mathematics Teaching 1 or 2
Prereq may be repeated for credit. Graduate-level counterpart of Math 431; additional requirements. Credit not granted for both Math 431 and 531.

532 Foundations of Secondary School Mathematics 2
Prereq graduate standing. Graduate-level counterpart of Math 432; additional requirements. Credit not granted for both Math 432 and 532.

534 Approaches to Mathematics Teaching 2
Prereq graduate standing. Graduate-level counterpart of Math 434; additional requirements. Credit not granted for both Math 434 and 534.

536 Statistical Computing 3
(2-3) Same as Stat 536.

538 Topics in Modern Astrophysics 3
May be re-
peated for credit; cumulative maximum 9 hours. Same as Astr 538.

539 Applications of School Mathematics 3
Prereq graduate standing. Graduate-level counterpart of Math 439; additional requirements. Credit not granted for both Math 439 and 539.

540 Applied Mathematics I 3
Prereq graduate stand-
ing. Graduate-level counterpart of Math 440; additional requirements. Credit not granted for both Math 440 and 540.

541 Applied Mathematics II 3
Prereq graduate stand-
ing. Graduate-level counterpart of Math 441; additional requirements. Credit not granted for both Math 441 and 541.

543 Approximation Theory 3
Univariate poly-
nomial and rational approximation techniques; ap-
proximation using splines and wavelets; selected
topics in multivariate approximation; algorithms for approxima-
tion. Cooperative course taught by WSU, open to UI students (Math 543).

544 Advanced Matrix Computations 3
Prereq Math 448. Advanced topics in the solution of linear sys-
tem and eigenvalue problems, including parallel matrix computations. Cooperative course taught by WSU, open to UI students (Math 544).

545 Numerical Analysis of Evolution Equations 3
Prereq Math 448. Discretization and numerical solution of partial differential equations of evolu-
tion; stability, consistency, and convergence; shocks; conservation of forms. Cooperative course taught by WSU, open to UI students (Math 545).

546 Numerical Analysis of Elliptic PDEs 3
Prereq Math 448. Methods of discretizing elliptic partial
differential equations and solving the resulting
systems of equations; error analysis. Cooperative course
taught by WSU, open to UI students (Math 547).

548 Numerical Analysis 3
Prereq graduate standing. Graduate-level counterpart of Math 448; addi-
tional requirements. Credit not granted for both Math 448 and 548.

550 Advanced Topics in Geometry 3
Projective, af-
line, and non-Euclidean geometries and their
relation to abstract algebra and differential geom-
etry. Cooperative course taught by WSU, open to UI students (Math 554).

551 Ring Theory 3
Ideals, quotient rings, modules, radicals, semi-simple Artinian rings, Noetherian rings. Cooperative course taught by UI (Math 551), open to WSU students.

552 Galois Theory 3
Field extensions, auto-
morphisms, normality, splitting fields, radical
extension, finite fields, separability. Cooperative course
taught by UI (Math 552), open to WSU students.

553 Graph Theory 3
Prereq graduate standing. Graduate-level counterpart of Math 453; addi-
tional requirements. Credit not granted for both Math 453 and 553.

554 Linear Algebra 3
Prereq Math 420. Vector spaces, direct sums, quotient spaces, similarity, Jordan forms, inner products, eigenvalues, eigen-
vectors, spectral theory. Cooperative course
taught by UI (Math 550), open to WSU students.

555 Topics in Combinatorics 3
May be repeated for
credit; cumulative maximum 6 hours. Combin-
torics, generating functions, recurrence relations, inclusion-exclusion, counting theory; experimen-
tal design, graph theory.

556 Introduction to Statistical Theory 3
Prereq graduate standing. Graduate-level counterpart of Math 456; addi-
tional requirements. Credit not granted for both Math 456 and 556.

561 Partial Differential Equations I 3
Prereq Math 402. Partial differential equations and other func-
tional equations: general theory, methods of so-
lution, applications. Cooperative course taught by WSU, open to UI students (Math 540).

561 Partial Differential Equations II 3
Prereq Math 560. Continuation of Math 560. Cooperative course
taught by WSU, open to UI students (Math 542).

562 Secondary School Mathematics 3
Same as T & L 562. Cooperative course taught jointly by
WSU and UI (Math 504).

563 Mathematical Genetics 3
Prereq GenCB 301;
Stat 412, 430, or 443. Statistical approaches to Mendelian and population genetics; theories and estimation of genetic parameters; testing genetic hypotheses.

564 Topics in Optimization 3
May be repeated for credit. Prereq advanced multivariable calculus and a programming language; Rec Math 464, 544. Advanced topics in the theory and comput-
ing methodology in optimization with emphasis on real-life algorithmic implementations.

Cooperative course taught by WSU, open to UI stu-
dents (Math 564).
566 Optimization in Networks 3 Prereq graduate standing. Graduate-level counterpart of Math 466; additional requirements. Credit not granted for both Math 466 and 566.

568 Statistical Theory I 3 Prereq Math 273; 430 or 443. Probability spaces, combinatorics, multidimensional random variables, characteristic function, special distributions, limit theorems, stochastic processes, order statistics. Cooperative course taught by WSU, open to UI students (Stat 548).

569 Statistical Theory II 3 Prereq Math 568. Continuation of Math 568. Statistical inferences; estimation and testing hypotheses; regression analysis; sequential analysis and nonparametric methods. Cooperative course taught by WSU, open to UI students (Stat 549).

570 Mathematical Foundations of Continuum Mechanics I 3 Prereq advanced calculus and differential equations. The basic mathematical theory of continuum mechanics and its relation to perturbation techniques and stability methods. Cooperative course taught by WSU, open to UI students (Math 570).

571 Mathematical Foundations of Continuum Mechanics II 3 Prereq Math 570. Continuation of Math 570. Cooperative course taught by WSU, open to UI students (Math 573).

573 Reliability Theory 3 Prereq Math 430, 443. Statistical concepts; stochastic material strengths and lifetimes; strength vs safety analysis; reliability of coherent systems; maintenance models; complex systems. Cooperative course taught jointly by WSU and UI (Stat 571).

581 Seminar in Analysis V 1-3 May be repeated for credit. Cooperative course taught jointly by WSU and UI (Math 541).

582 Seminar in Algebra V 1-3 May be repeated for credit. Cooperative course taught jointly by WSU and UI (Math 561).

583 Seminar in Applied Mathematics V 1-3 May be repeated for credit. Cooperative course taught by WSU, open to UI students (Math 583).

584 Seminar in Topology and Geometry V 1-3 May be repeated for credit. Cooperative course taught by WSU, open to UI students (Math 584).

585 Seminar in Number Theory V 1-3 May be repeated for credit. Cooperative course taught by WSU, open to UI students (Math 587).

586 Topics in Mathematical Modeling in Natural Sciences V 1-3 May be repeated for credit; cumulative maximum 12 hours. Selected topics in the mathematical modeling of physical and biological phenomena. Cooperative course taught by WSU, open to UI students (Math 588).

589 Seminar in Precalculus Mathematics Education 3 Same as T & L 563.

590 Seminar in Undergraduate Mathematics Instruction V 1-3 May be repeated for credit; cumulative maximum 6 hours. Curricular and other problems of teaching mathematics to undergraduates.

591 Seminar in the History of Mathematics I 1 Topics in the history of mathematics to 1800.

592 Seminar in the History of Mathematics II 1 Topics in the history of mathematics from 1800 to present.

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

602 Internship V 2-12 May be repeated for credit. Prereq 40 hours graduate work. A structured internship from three to nine months; teaching at the postsecondary level or applied work in a non-academic environment. S, F grading.

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

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

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

School of Mechanical and Materials Engineering

Professor and School Director: B. R. Ramaprian (Interim); Professors: S. D. Antolovich, C. T. Cro owe, J. L. Ding, W. J. Graham, D. V. Hutton, K. G. Lynn, D. B. Masson, B. R. Ramaprian, D. E. Stock, T. R. Trott, H. M. Zbib; Associate Professors, S. Jayaram, W. E. Johns, B. Q. Li, M. G. Nor ton, C. Peszkszki, C. D. Richar ds, R. F. Richar ds, P. G. Vaida ia; Assistant Professors, D. F. Bahr, A. Bandyopadhyay, U. Jayaram, L. V. Smith; Tri-Cities: Associate Professor and Program Coordinator, R. W. Westph al; Professor, L. C. Olson; Associate Professor, W. C. Kints e, Assistant Professor, A. Hassan; Vancouver: Associate Professor and Program Coordinator, J. C. Swear engen, Associate Professor A. Segall, Assistant Professors, H. Gur ock, and T. S. Mclla ren.

MECHANICAL ENGINEERING

The mechanical engineering program is concerned with (a) the use and economical conversion of energy from natural sources into other useful energy to provide power, light, heat, cooling and transportation, (b) the design and production of machines to lighten the burden of human work, (c) the creative planning, development and operation of systems for using energy, machines and resources, and (d) the processing of materials into useful products. Employment opportunities for graduates exist in the areas of mechanical design, systems design, equipment development, manufacturing, CAD/CAM, project engineering, production management, applied research and sales and service.

The curriculum emphasizes foundation courses at the third year which are fundamental to all aspects of mechanical engineering. These courses emphasize both analysis and design while accompanying laboratory courses provide opportunities for hands-on experiences. Computer applications are interwoven throughout the program. In the fourth year each student selects two electives to build upon material from the foundation courses. The undergraduate program is completed with courses in integrated design of mechanical and thermal systems as well as a capstone laboratory course. Graduates are prepared to enter the field as engineers or to continue into a graduate program. An engineering internship program is available for students to gain industrial experience during their academic careers. 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 Materials Science and Engineering (accredited by the Accrediting Board for Engineering and Technology) and the Master of Science in Materials Science and Engineering. The school participates in the interdisciplinary program leading to the degree of Doctor of Philosophy (Engineering Science) and an interdisciplinary program leading to the Doctor of Philosophy (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 continuing 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 manufacturing process, a mechanical element of a manufacturing process, tooling for manufacturing, and machine
Degree Program Requirements

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

Students in the Four-Year Degree Agreement program must certify on time, take all indicated courses in first two years, follow remainder of schedule, and have an MSE or M E advisor throughout entire program.

MATERIALS SCIENCE AND ENGINEERING DEGREE PROGRAM (129 HOURS)  ✔FYDA

Freshman Year
First Semester   Hours
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 171 [N] (GER) 4
MSE 110 2
Second Semester   Hours
Biological Sciences [B] (GER) 3
Chem 106 [P] (GER) 4
Cpt S 203 2
GenEd 111 [A] (GER) 3
Math 172 4

Sophomore Year
First Semester   Hours
Arts & Humanities [H,G] (GER) 3
C E 211 3
Econ 102 [S] (GER) 3
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4
Second Semester   Hours
C E 215 3
Intercultural [L,G,K] (GER) 3
Math 315 3
MSE 301 3
Phys 202 [P] (GER) 4

Junior Year
First Semester   Hours
E E 304 2
M E 310 3
MSE 302 3
MSE 312 3
MSE 320 2
Physical Science Elective 3
Complete Writing Portfolio
Second Semester   Hours
Engineering Science Elective 3
M E 316 [M] 3
MSE 316 3
MSE 321 3
MSE 323 1
Physical Science Elective 3

Senior Year
First Semester   Hours
M E 416 3
MSE 401 3
MSE 402 3
MSE 403 3
MSE 413 3
MSE 425 [M] 2
Second Semester   Hours
Engl 402 [W] (GER) 3
MSE 404 3
MSE 426 [M] 2
MSE 450 1
Technical Elective 3
Tier III Capstone [H,G,S,K] (GER) 3

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.

1 Upper-division C E, Ch E, Chem, Cpt S, E E, Math, M E, Phys, or Stat course.

MECHANICAL ENGINEERING DEGREE PROGRAM (128 HOURS)  ✔FYDA

Freshman Year
First Semester   Hours
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 120 2
M E 103 3
Second Semester   Hours
Biological Sciences [B] (GER) 3
Chem 106 [P] (GER) 4
GenEd 111 [A] (GER) 3
M E 120 2
Math 172 4

Sophomore Year
First Semester   Hours
C E 211 3
Cpt S 203 or 251 2
Econ 102 [S] (GER) 3
Math 220 2
Math 273 2
Phys 201 [P] (GER) 4
Second Semester   Hours
Arts & Humanities [H,G] (GER) 3
C E 212 3
C E 215 3
M E 320 1
Math 315 3
Phys 202 [P] (GER) 4

Junior Year
First Semester   Hours
E E 304 2
M E 301 3
M E 303 3
M E 313 3
M E 316 [M] 3
MSE 301 3
Complete Writing Portfolio
Second Semester   Hours
M E 305 2
M E 310 3
M E 311 1
M E 348 3
M E 404 3
M E 414 3

Senior Year
First Semester   Hours
E E 305 2
Intercultural [L,G,K] (GER) 3
M E 349 1
M E 402 3
Technical Elective 3
Technical Elective 3
Second Semester   Hours
Communication Proficiency [C,W] (GER) 3
M E 406 [M] 3
M E 416 3
Tier III Capstone [H,G,S,K] (GER) 3
Technical Elective 3

1 Technical Elective in M E or MSE.
2 Upper-division Math, Stat, or Computer Science (Cpt S 430 or 445, C E 463).
3 Engl 402 is recommended.

MANUFACTURING ENGINEERING DEGREE PROGRAM (128 HOURS)

Freshman Year
First Semester   Hours
Chem 105 [P] (GER) 4
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math 103 3
Math 171 [N] (GER) 4
Second Semester   Hours
Chem 106 [P] (GER) 4
Econ 102 [S] (GER) 3
GenEd 111 [A] (GER) 3
M E 120 2
Math 172 4
### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H, G] (GER)</td>
<td>3</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>C E 211</td>
<td>3</td>
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<tr>
<td>Math 220</td>
<td>2</td>
</tr>
<tr>
<td>Math 273</td>
<td>2</td>
</tr>
<tr>
<td>Phys 201 [P] (GER)</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C E 212</td>
<td>3</td>
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<tr>
<td>C E 215</td>
<td>3</td>
</tr>
<tr>
<td>Cpt S 251</td>
<td>2</td>
</tr>
<tr>
<td>Math 315</td>
<td>3</td>
</tr>
<tr>
<td>Phys 202 [P] (GER)</td>
<td>4</td>
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### Junior Year (Vancouver Campus)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>E E 304</td>
<td>2</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>M E 303</td>
<td>3</td>
</tr>
<tr>
<td>M E 316 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Math 360</td>
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<tr>
<td>MSE 301</td>
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<table>
<thead>
<tr>
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<th>Hours</th>
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<tbody>
<tr>
<td>E E 305</td>
<td>2</td>
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<tr>
<td>M E 310</td>
<td>3</td>
</tr>
<tr>
<td>M E 311</td>
<td>1</td>
</tr>
<tr>
<td>M E 375</td>
<td>3</td>
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<tr>
<td>M E 404</td>
<td>3</td>
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<tr>
<td>M E 414</td>
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### Senior Year (Vancouver Campus)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C E 463</td>
<td>3</td>
</tr>
<tr>
<td>M E 325</td>
<td>3</td>
</tr>
<tr>
<td>M E 400</td>
<td>2</td>
</tr>
<tr>
<td>M E 474</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone [H,G,S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mfg Engineering Elective</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 402 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>M E 410 [M]</td>
<td>2</td>
</tr>
<tr>
<td>M E 416 or 420</td>
<td>3</td>
</tr>
<tr>
<td>M E 475</td>
<td>3</td>
</tr>
<tr>
<td>Mfg Engineering Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

### MATERIALS SCIENCE AND ENGINEERING MINOR

A minor in MSE requires 16 credits of 300-400-level MSE courses including MSE 301 and three of the following five courses: MSE 401, 402, 403, 404, and 413. Students may include M E 310 and 320.

### 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 CE 211, Chem 105, Engrl 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 strongly recommended prior to transfer to minimize the time required at Washington State University to complete the bachelor's degree requirements.

The requirements for direct entry into the mechanical engineering or materials science and engineering programs upon transfer are the same as listed for certification. Transfer student applications will be handled by the Admissions Office and sent to the school so that students do not need to make a separate application to the school.

### Preparation for Graduate Study

Before undertaking graduate study, a student should have completed substantially the equivalent of the above schedule of studies. Students from other scientific disciplines (such as physics, chemistry, mathematics) are encouraged to apply. Specific details concerning prerequisites for such students are worked out on an individual basis.

### Description of Courses

#### Mechanical Engineering

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>103 Engineering Graphics 3</td>
<td>(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).</td>
</tr>
<tr>
<td>120 Innovation in Design 2</td>
<td>Engineering and architectural creativity; role, function, enhancement, integration in design methods.</td>
</tr>
</tbody>
</table>

### School of Mechanical and Materials Engineering
School of Mechanical and Materials Engineering

402 Thermal Systems Design 3 Prereq ME 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/c, major in engr. Conduction, radiation, and convection heat transfer; analytical, numerical, experimental results for solids, liquids, and gases; heat exchanger design. Cooperative course taught jointly by WSU and UI (ME 345).

405 Thermal Engineering 3 Prereq M E 404 or c/c. Heat, mass, and momentum transfer in thermal systems and system components; computer-aided analysis; optimization and design of thermal systems.

406 [M] Experimental Design 3 (1-0) Prereq ME 305; 404; major in M E; Rec ME 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.

414 Machine Design 3 Prereq CE 215, major in engr; Rec M E 320. Optimal design of machinery; analysis for prevention of machine elements failure.

415 Integrated Design 3 Prereq M E 310, 414 or c/c; major in engr. Methodologies to optimize product design incorporating functionality, reliability, manufacturability and maintainability.

416 Mechanical Systems Design 3 (1-0) Prereq M E 348; 404, 414; Rec M E 316. Integrative design in mechanical engineering; multidisciplinary design project considering both technical and non-technical contexts; organizational dynamics and communications.

419 Air Conditioning 3 Prereq M E 404. Principles of heat and moisture transfer; air motion and purity in buildings; design of systems. Cooperative course taught jointly by WSU and UI (ME 444).

420 Capstone Engineering Design 3 (1-6) Prereq senior in engr. Integrative design in engineering; multi-disciplinary design project considering both technical and non-technical contexts; organizational dynamics and communications.


435 Thermal Energy Systems 3 Prereq M E 404 or c/c. Thermal energy systems of current interest including combustion, nuclear, and direct conversion based systems.

436 Combustion Engines 3 Prereq M E 303. Internal combustion engines; spark ignition engines, diesels, and gas turbines.

437 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 mechanical systems; design for noise and vibration control. Cooperative course taught jointly by WSU and UI (ME 472).

450 Stress Design Codes 3 Prereq C E 215. Theoretical bases and application of the principal regulatory stress analysis design codes.


460 Nuclear Reactor Engineering 3 Prereq M E 461. Nuclear reactor design problems in thermodynamics, fluid flow, heat transfer, fuel preparation, waste disposal, materials selection; discussion of reactor types. Cooperative course taught by UI (NE 460), open to WSU students.

461 Introduction to Nuclear Engineering 3 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 functionality.


473 Computer-aided Design 3 (2-3) Prereq M E 313. Interactive computer programming and graphics in the design of engineering systems.

474 Advanced Manufacturing Processes 3 Prereq M E 310. Mechanical and metallurgical fundamentals of metal machining and materials processing by deformation; manufacturing systems concepts in product design.

475 Manufacturing Automation 3 (2-3) Prereq Cpt S 203 or 251; E E 304; M E 310. Computer control of manufacturing processes; numerically controlled machine tools, robotics, control algorithms, component and system design.

476 Industrial Ecology and Sustainability in Manufacturing 3 Prereq senior in engr. or by permission only. Open and closed manufacturing systems; sources and sinks; pollution prevention, zero discharge; materials productivity and materialization; 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.

502 Convective Heat Transfer 3 Prereq M E 404. Analytic methods applied to multidimensional steady-state and transient conduction heat transfer, melting and ablation, numerical methods.

514 Thermal Radiation Processes 2 or 3 Rec M E 404. Thermal radiation within enclosures, ideal and real surfaces; radiative processes within 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 Fundamentals of Fluid II 3 Rec M E 521. Viscous shear layers including heat and mass transfer, compressibility effects, vortex dynamics, stability and transition, turbulence analysis and modeling.

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 Macropscopic 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 theories; laminated beams and plates; dynamic behavior; environmental effects. Cooperative course taught jointly by WSU and UI (ME 534).

535 Tribology 3 Rec M E 530. Friction, wear, and lubrication of solids with emphasis on metals.

537 Fracture Mechanics and Mechanisms 4 Same as MSE 537.

540 Advanced Dynamics of Physical Systems 3 Newtonian dynamics, rotating coordinate systems; Lagrangian and Hamiltonian mechanics; gyroscopic mechanics, other applications. Cooperative course taught by WSU, open to UI students (M E 505).

541 Advanced Mechanical Vibrations 2 or 3 Rec M E 461. Response of single and multiple degree of freedom systems; finite element formulation; matrix methods, random vibrations. Cooperative course taught jointly by WSU and UI (ME 572).
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 equilibrium, phase transformations, and mechanical properties.

302 Electronic Materials 3 Prereq Chem 105, Phys 202 or c//. Structure of materials, electronic structure of solids; thermal, electrical, dielectric, and magnetic properties of materials; semiconductors processing.

309 Metallurgy Transport Phenomena 3 Prereq Math 315 or c//. Introduction to principles of metallurgy transport phenomena including heat, mass, and momentum transfer. Cooperative course taught by UI (Met 309), open to WSU students.

312 Thermodynamics and Phase Equilibrium 3 Prereq MSE 301. Concepts of activity, equilibrium, solution properties; relationship between free energy, composition, and temperature; heterogeneous equilibria.

316 Kinetics of Chemical and Physical Reactions 3 Kinetics of heterogeneous chemical reactions; mechanisms and kinetics of diffusion; oxidation and other gas-metal reactions; polarized electrodes; corrosion; boundary migration; nucleation and growth; eutectoid and martensitic transformations.

320 Materials Structure - Properties Lab 2 (0-6) Prereq MSE 301 or c//; major in MSE. Principles and techniques of optical metallography and other laboratory methods used in modern material science and engineering.

321 Materials Characterization 3 Prereq MSE 301. Properties of x-rays, scattering and diffraction; crystal structures; x-ray diffraction methods, transmission electron microscopy and scanning electron microscopy.

323 Materials Characterization Lab 1 (0-3) Prereq c// in MSE 321. Laboratory exercises on materials characterization: x-ray, TEM, SEM.

341 Particulate Materials Processing 4 (3-3) Prereq MSE 310. Engineering science of particulates; powder production, powder properties, separation; design of systems applied to metals, ores, and concentrates. Field trips required. Cooperative course taught by UI (Met 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, synthesis, 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 (MET 421).


426 [M] Senior Thesis II 2 (0-6) Prereq MSE 320, 323, senior in MSE. Research in materials science and engineering.

429 Powder Metallurgy 3 Fundamentals of conventional press-and-sinter powder metallurgy (PM) and more advanced techniques; commercial applications of PM parts. Cooperative course taught by UI (MET 429), open to WSU students.


450 Seminar 1 May be repeated for credit. For seniors only.

461 Metallurgical Control and Optimization 3 Basics of process control and optimization applied to metallurgical engineering. Cooperative course taught by UI (Met 461), open to WSU students.

471 Materials Characterization Techniques 1 (0-3) Prereq instructor approval, Chem 105, Phys 201 or equivalent. Introduction to advanced materials characterization methods including electron microscopy, scanning probe microscopy, nanomechanical testing, and spectroscopy techniques. S, F grading.

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

501 Advanced Topics in Materials Science 2 or 3 May be repeated for credit; cumulative maximum 6 hours. Chemical crystallography, microstructure, ultra-structure, theories of crystalline and non-crystalline solids, rheology and fracture mechanism of materials. Cooperative course taught by WSU, open to UI students (Met 544).

503 Advanced Topics in Materials Engineering V 1-3 May be repeated for credit; cumulative maximum 6 hours.

511 Deformation 3 Rec MSE 413. Elementary dislocation theory and its application to some important deformation processes.

513 Crystal Plasticity 3 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 semiconductor 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 Parameters for Synthesis of Wood Composites 3 Theory and practice of wood composite materials, manufacture and development. Cooperative course taught by WSU, open to UI students (ForPr 537).

547 Basic Principles of Adhesion 3 Rec MSE 402. Principles of interfacial bonding applied in the engineering of polymers, wood and heterogeneous 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 cr/lf. Experimental methods in electron microscopy and microanalytical techniques, for materials science. S, F grading.

600 Special Projects or Independent Study 1-3 May be repeated for credit; cumulative maximum 4 hours. For WWAMI students only. Practicum, observations of medical practice with individual physician volunteers.

510P Histology 3 (2-3) Description and microscopic examination of cell types, tissues, and major organs of the human body.

511P Anatomy of the Trunk 5 (4-3) For WWAMI students only. Extensive regional study of human thorax, abdomen, pelvis, and perineum; embryology and living anatomy; correlates gross with clinical anatomy.

512P Basic Mechanisms in Cellular Physiology 4 Basic physiological mechanisms, primarily at the cellular level.

513P Introduction to Clinical Medicine I 1 For WWAMI students only. Instruction in communications skills and interview techniques to form the basis for the eventual doctor-patient relationship.

514P Molecular and Cellular Biology 3 Classical molecular and cellular biochemistry, cellular physiology, and molecular genetics.

516P Systems of Human Behavior II 1 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, fungal, parasitic, and viral infectious diseases.

522P Introduction to Clinical Medicine II 2 For WWAMI students only. Communication skills as related to patients and dealing with problem identification and patient history.

523P Medical Immunology 2 For WWAMI students only. Principles of immunology and their relationship to human medicine.

524P Molecular and Cellular Biology II 2 Continuation of Med S 514.

526P Systems of Human Behavior II 2 Continuation of Med S 516 with an emphasis on models of behavior, normality and abnormality related to medicine.

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 WWAMI students only. The screening physical examination.

600P Special Projects or Independent Study 1-6 May be repeated for credit; cumulative maximum 6 hours.

700 Master’s Research, Thesis, and/or Examination 1-3 May be repeated for credit; cumulative maximum 6 hours.

701 Master’s Special Problems, Directed Study, and/or Examination 1-3 May be repeated for credit; cumulative maximum 6 hours.

800 Doctoral Research, Dissertation, and/or Examination 1-3 May be repeated for credit; cumulative maximum 6 hours.

Program in Basic Medical Sciences

Professor and Program Chair, M. B. Lukowski; Professors, R. W. Brosner, R. B. Croteau, D. W. King, M. L. Pali, S. R. White, R. B. Wilson; Associate Professor, 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 with faculty from WSU and the University of Idaho taking part in each, all WWAMI students being taught as a single class. All WWAMI students are members of the first year class of the University of Washington School of Medicine, and all courses apply to the M.D. degree granted by that university.

Because of specialized support material required and the nature of course content, course enrollment is restricted. With the approval of the course director and the student’s advisor, certain courses listed below may be taken by graduate students enrolled in graduate programs leading to advanced degrees granted by other academic units.

In accordance with School of Medicine policy, all Med S courses are S, F graded.

Description of Courses

Medical Sciences

Med S

501P Medical Preceptorship 2 May be repeated for credit; cumulative maximum 4 hours. For WWAMI students only. Practicum, observations of medical practice with individual physician volunteers.

510P Histology 3 (2-3) Description and microscopic examination of cell types, tissues, and major organs of the human body.

511P Anatomy of the Trunk 5 (4-3) For WWAMI students only. Extensive regional study of human thorax, abdomen, pelvis, and perineum; embryology and living anatomy; correlates gross with clinical anatomy.

512P Basic Mechanisms in Cellular Physiology 4 Basic physiological mechanisms, primarily at the cellular level.

513P Introduction to Clinical Medicine I 1 For WWAMI students only. Instruction in communications skills and interview techniques to form the basis for the eventual doctor-patient relationship.

514P Molecular and Cellular Biology 3 Classical molecular and cellular biochemistry, cellular physiology, and molecular genetics.

516P Systems of Human Behavior II 1 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, fungal, parasitic, and viral infectious diseases.

522P Introduction to Clinical Medicine II 2 For WWAMI students only. Communication skills as related to patients and dealing with problem identification and patient history.

523P Medical Immunology 2 For WWAMI students only. Principles of immunology and their relationship to human medicine.

524P Molecular and Cellular Biology II 2 Continuation of Med S 514.

526P Systems of Human Behavior II 2 Continuation of Med S 516 with an emphasis on models of behavior, normality and abnormality related to medicine.
students may apply for two- or three-year scholarships whether or not they are enrolled in the ROTC Program. Additionally, scholarships are available on a competitive basis for students desiring to earn a commission in the National Guard and Army Reserve, without a commitment to full-time active duty upon graduation.

Upon successful completion of the advanced course and graduation from WSU, cadets selected for commissioning are commissioned as Army officers and serve in Army Reserve, National Guard, or active Army units. Those who wish to seek advanced degrees may apply for a delay to active duty in order to complete their graduate studies before entering active service.

**Description of Courses**

**Basic Course**

**Mil S**

101 The United States Army 1 Role of the Army in contemporary society.

102 National and International Role of the Army 1 Role of the Army in today’s international affairs.

110 Cougar Rangers I 1 Military adventure training, pioneering activities, military skills and small unit tactics. Field trip required.

111 Cougar Rangers II 1 Military adventure training, pioneering activities, military skills and small unit tactics. Field trip required.

201 Introduction to Leadership 2 Multidisciplinary approach to military leadership.

202 The Officer as a Professional 2 U.S. Army Officer Corps as a profession; the U.S. Army Officer as a professional.

206 Military Science Overview 5 Preparation for advanced military science program; map reading, tactics, leadership, U.S. military history, fundamentals of army duty.

396 (205) Leader Internship 6 Prereq junior standing. By interview only. Fully funded non-commissioned leader internship and Army orientation; provides leader training and assessment. Students must register through the Mil S Dept. for Mil S 396. May be taken as Mgt 498, Pol S 497, PEACT 201, or Ed Ad 499 with permission. S, F grading.

**Advanced Course**

**Mil S**

301 Applied Leadership and Management 3 Troop leadership procedures emphasizing instruction in military professionalism and ethics; practical aspects of tactics and leadership practicum.

302 Small Unit Tactics and Military Leadership 3 Preparation, delivery, and critique of practical oral presentations; leadership of small units; offensive and defensive operations.

320 Advanced Summer Camp 6 Prereq Mil S 301, 302. By interview only. Intensive study and internship in military tactics, command and leadership; held at Fort Lewis, WA. S, F grading.

401 Advanced Military Leadership 3 Historical and legal basis of military justice; small unit management; military professionalism and ethics.

402 Advanced Military Management and Practicum 3 Theory and practice of Army administration/management; staff planning and correspondence; pre-commission orientation; unit management/resources application.

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

School of Molecular Biosciences

**Director:** M. D. Griswold; **Associate Director of Graduate Programs:** H. Grimes; **Associate Director of Undergraduate Programs:** R. Reeves; **Professors:** R. W. Brouwer; A. K. Duver; J. N. S. Evans; G. L. Hazelbauer; H. Hosick; T. Ichiye; M. Kohn, A. Kleinholfs, P. Larquin, N. Magnuson, M. L. Fall, K. Postle, L. L. Randall, J. O. Schenk, M. Skinner, J. M. Smerdon, D. von Wettstein, R. G. Yount; **Associate Professors:** K. P. Bertrand, R. Calza, C. H. Kang, K. H. Kim, A. Schroeder, L. Taylor; L. Xun; **Assistant Professors:** C. Decker, L. M. Gloss, M. Konkel, P. Mizier, M. Schelling, S. R. Sylvester (Vancouver); **Additional Graduate Faculty:** J. A. Browse, J. Carrington, R. B. Croteau, H. Granzier, J. Hurst, S. S. Jones, D. Kramer, M. Ku, N. G. Lewis, F. Muehlbauer, T. W. Okita, J. Paznokas, J. C. Rogers, C. A. Ryan, L. Thomassow, G. Thorgaard; **Instructors:** M. Sanchez-Lanier, N. McCabe.

Molecular biosciences can best be viewed as a dynamic continuum in which approaches derived from chemistry, physics, and biology are utilized to address the fundamental mechanisms of living things. The School of Molecular Biosciences encompasses several areas each described here in more detail.

**BIOCHEMISTRY AND BIOPHYSICS**

Biochemistry and biophysics are interdisciplinary sciences that involve the application of methods and theories of chemistry and physics to the study of biological phenomena. An undergraduate major in biochemistry prepares you for a variety of careers in industry, education, public service, and the health professions, or for graduate study and research in biochemistry, biophysics, molecular biology, and many related fields. Graduate students have training opportunities in a wide-range of research areas including: protein biochemistry, membrane structure and function, molecular biology of gene regulation in animals, plants, and microorganisms, enzymatic reaction mechanisms, signal transduction, protein export, DNA repair, reproductive biology, protein-DNA interactions, plant and natural product biochemistry, and structural biology including MRI spectroscopy, x-ray crystallography and computer simulations.

The undergraduate and graduate programs offer courses of study leading to the degrees of Bachelor of Science in Biochemistry, Master of Science in Biochemistry, and Doctor of Philosophy.

**Undergraduate Majors in Biochemistry and Biophysics**

The program offers three curricular options leading to the degrees of Bachelor of Science in Biochemistry, Master of Science in Biochemistry, and Doctor of Philosophy.

**minor in Genetics and Cell Biology**

The Genetics and Cell Biology Program also offers minors in genetics and cell biology. Requirements for the minor in Genetics and Cell Biology are: 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. Requirements for the minor in Pre-Genetic Counseling are: 21 total hours; GenCB 301, 430, Phil 365, Psych 321, 444, 445, one of Math 360, Psych 311, Stat 212, or 412. Additional credits (as needed) from: GenCB 511, Psych 312, 333, 350, 361, 464, Soc 351, 446, Zoology 251, 316, 320, 407.

**Molecular Microbiology**

Microbiology is both a basic and an applied science that studies microorganisms and their activities. It is concerned with their form, structure, reproduction, physiology, and identification. It includes the study of their distribution in nature, their relationship to other microorganisms, and other living things, their beneficial and detrimental effects on human beings, and the physical and chemical changes they make in their environment. Employment opportunities in industrial, government, hospital, and private laboratories and agencies are excellent for qualified graduates. Majors may also prepare for advanced degrees and easily complete the requirements for application to medical, dental, or other professional schools. At the graduate level, the school offers programs leading to the degrees of Master of Science in
Microbiology and Doctor of Philosophy. Areas in which the unit is prepared to direct research include the biology of membranes, bioremediation, molecular genetics, molecular basis of cell-cell interactions and virulence, microbial differentiation, cellular and tumor immunology and the regulation of the immune response, diseases of insects and their development of resistance to microbial pathogens.

Undergraduate Majors in Microbiology

Majors are required to develop a strong background in the basic sciences before taking courses in microbiology and those required by the various options. At the undergraduate level, the Microbiology degree program offers options in microbiology and medical technology, leading to the Bachelor of Science degree in Microbiology. At least 40 of the total hours required must be in 300-400-level courses. A total of 28 credit hours must be in the core courses and a minimum g.p.a. of 2.0 is required in these courses for graduation. None of the core courses or departmental courses may be taken pass, fail. The General Microbiology option requires GenCB 301, Micro 301, 310, 311, 412, 413, 414, 415, and 6 additional hours in microbiology and one advanced lecture-lab course outside the department. Those contemplating graduate study are urged to take the core courses 340-343 series in lieu of Chem 240. Requirements for the Medical Technology option are the same except that Micro 350 and Zool 417 are required. Micro 350 partially fulfills the requirement for 9 credits of Micro electives and Zool 417 fulfills the requirement for one advanced lecture-lab course outside the department. Zool 251 is strongly recommended. A one-year internship in an accredited school of medical technology is required after graduation for those interested in becoming certified medical technologists.

Minor in Microbiology

A minimum of 16 credit hours including Micro 301 and the remaining at the 300-400-level selected from: Micro 311, 331, 350, 412, 413, 414, 415, 416, 417, 420, 428, 431, 462, 464, and MBioS 499.

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 administered by the faculty of the School of Molecular Biosciences. Students may satisfy the 18-21 credit hour requirement for this minor by taking the following courses:

BC/BP 364
BC/BP 366, GenCB 402, or Micro 464
BC/BP 463, GenCB 502, or Micro 462
GenCB 301
GenCB 450
Micro 301

Further information can be obtained from the School of Molecular Biosciences office.

Degree Program Requirements

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

**First Semester**
- GenCB 301
- Math 140 [N] or 171 [N] (GER)
- Math 172

**Second Semester**
- Arts & Humanities [H,G] (GER)
- Communication Proficiency [C,W] (GER)
- Social Sciences [S,K] (GER)

**Junior Year**

**First Semester**
- Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)
- Degree Program Course
- Electives

**Second Semester**
- Complete Writing Portfolio

**Senior Year**

**First Semester**
- Degree Program Courses
- Intercultural [I,G,K] (GER)
- Electives

**Second Semester**
- Biological Science Electives
- Electives

**APPLIED GENETICS AND CELL BIOLOGY DEGREE PROGRAM (123 HOURS)  ✔FYDA**

College of Agriculture and Home Economics with a focus on either plant or animal biotechnology.

**Freshman Year**

**First Semester**
- Biol 103 [B] (GER)
- Chem 105 [P] (GER)
- Engl 101 [W] (GER)
- GenEd 110 [A] (GER)
- Math 107

**Second Semester**
- Ag Ec 201 [S] (GER)
- Biol 104 [B] (GER)
- Chem 106 [P] (GER)
- GenEd 111 [A] (GER)
- Math 108

**Sophomore Year**

**First Semester**
- Chem 240; or Chem 340, 341, 342

**Second Semester**
- Arts & Humanities [H,G] (GER)

**Molecular Genetics and Cell Biology Technology Degree Program (120 HOURS)  ✔FYDA**

College of Sciences

**Freshman Year**

**First Semester**
- Biol 103 [B] (GER)
- Chem 105 [P] (GER)
- Engl 101 [W] (GER)
- GenEd 110 [A] (GER)
- Math 107

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

**Sophomore Year**

**First Semester**
- Arts & Humanities [H,G] (GER)
- Chem 240; or 340, 341, 342

**Second Semester**
- Communication Proficiency [C,W] (GER)
- Social Sciences [S,K] (GER)
- Phys 101 [P] (GER)

**Junior Year**

**First Semester**
- Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)
- Degree Program Courses
- Electives

**Second Semester**
- Intercultural [I,G,K] (GER)
- Electives

**Senior Year**

**First Semester**
- GenCB 490
- Laboratory Courses

**Second Semester**
- Biological Science Electives
- Electives

**Microbiology and Medical Technology Degree Programs (120 HOURS)  ✔FYDA**

**Freshman Year**

**First Semester**
- Biol 103 [B] (GER)
- Chem 105 [P] (GER)
- Engl 101 [W] (GER)
- GenEd 110 [A] (GER)

**Second Semester**
- Biol 104 [B] (GER)
- Chem 106 [P] (GER)
- GenEd 111 [A] (GER)
- Math 140 [N] (GER)

**Sophomore Year**

**First Semester**
- Arts & Humanities [H,G] (GER)

**Second Semester**
- BC/BP 364
- BC/BP 366
GenCB 301 4
Phys 102 [P] (GER) 4
Social Sciences [S,K] (GER) 3

**Junior Year**

**First Semester**

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**Second Semester**

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**Senior Year**

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<td>Electives</td>
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1 Pre-med students and those interested in advanced degrees should take Chem 340, 341, 342, and 343, a one-year course in organic chemistry.

2 For Microbiology Degree Program, Entom 343, 222, Quantitative Chemistry, 4 credits, should be taken after BC/BP 364, 366.

3 Micro electives may include Micro 416, 417, 420, 428, 431, 462, 464, 582; GenCB 450. A total of two courses (6 credits) is required.

4 For Microbiology Degree Program, Entom 343, 448, Zool 315, 353, 417, or 428 may satisfy this requirement; for Medical Technology Degree Program, take Zool 417.

**Description of Courses**

**Molecular Biosciences**

**MBioS**

378 (BC/BP) *Introduction to Molecular Biology* Computer V 1 (1-0) to 3 (1-6) Prereq BC/BP 364, GenCB 301. Computer analysis of nucleic acid sequences and protein structure.

495 (Micro) *Internship Training* V 2 (0-4) to 4 (0-8) May be repeated for credit; cumulative maximum 8 hours. Prereq Micro 301, BC/BP 364, or GenCB 301; by permission only. Experience in work related to specific career interests. S, F grading.

498 *Directed Research* V 1 (0-3) to 4 (0-12) May be repeated for credit. Prereq BC/BP 364 or GenCB 301. Introduction to laboratory research.

499 (BC/BP, GenCB, Micro) *Special Problems* V 1-4 May be repeated for credit. S, F grading.

578 (BC/BP) *Molecular Biology Computer Techniques* V 1 (0-3) to 4 (2-6) May be repeated for credit; cumulative maximum 4 hours. Prereq BC/BP 364 or 563; GenCB 301. Computer analysis of nucleic acid sequences and/or protein structure. Cooperative course taught by WSU, open to UI students (MMBB 578).

**Biochemistry/Biophysics**

BC/BP

312 [M] *Cell and Molecular Laboratory* 2 (0-6) Same as GenCB 312.

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).

366 [M] *Introductory Biochemistry Laboratory* 1 (0-3) Prereq BC/BP 364 or c//. Basic biochemical techniques.

398 [M] *Undergraduate Seminar* 1 Prereq junior standing. Opportunities in biochemistry, biophysics and molecular biology.

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.

464 General Biochemistry 3 Prereq BC/BP 463. Metabolism of carbohydrates, proteins, fats, bioenergetics; photosynthesis; control of metabolic processes.

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 electro-phoresis, sedimentation, viscosity, and spectroscopy.


482 [M] *Biophysical Chemistry Laboratory* 2 (0-6) Prereq BC/BP 472 or c//. Laboratory experiments illustrating physical chemical principles with particular application to life sciences.

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.

588 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 1 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 preselected teachers. Continuation of Chem 571.

573 General 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.

579 Molecular Biology Techniques II 1 (0-3) Prereq BC/BP 564 or c//. Modern laboratory techniques in the use of plasmids as cloning vehicles.

580 Protein Trafficking in Eucaryotic 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.

**Genetics and Cell Biology**

GenCB

301 General Genetics 4 Prereq Biol 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; c// in 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.

453 Directed Problems in Cell Biology 1 Prereq BC/BP 364 or GenCB 301; c// in GenCB 450. Adjunct course to GenCB 450.
Microbial Genetics 3 Same as Micro 462.

[M] Perspectives in Biotechnology 3 Same as A S 488. Credit not granted for both GenCB 488 and 588.

[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.

[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.

Eukaryotic Molecular Genetics 2 Prereq BC/ BP 364, GenCB 301. Gene control and organization; lower eukaryotic and cell culture genetics.

Plant Transmission Genetics 3 Same as CropS 504.

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.

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).

Fungal Genetics 4 (3-3) Same as PI P 534.

Molecular Genetics of Plant and Pathogen Interactions 2 Same as PI P 535.

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).

Cell Biotechnology V 1-3 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).

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.

Molecular Genetics 3 Prereq BC/ BP 563; GenCB 301, 502, or Micro 301. Biochemical description of genetic processes in microorganisms.

Molecular Biology I 3 Same as BC/ BP 565.

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.

Research Proposal 1 May be repeated for credit; cumulative maximum 2 hours. Written and oral presentation of a research paper.

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).

Fundamentals of Oncology 3 Same as PI T 572.

Cellular and Molecular Aspects of Development 3 Same as Zool 573.

Molecular Biology Techniques I 1 (0-3) Same as BC/ BP 576.

Molecular Biology Techniques II 1 (0-3) Same as BC/ BP 577.

Protein Trafficking in Eucaryotic Cells 3 Same as PI Ph 580.

Advanced Topics in Genetics V 1-2 May be repeated for credit. Prereq GenCB 502 or 511. Recent research in selected areas of genetics.

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

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).

Seminar 2 May be repeated for credit. Prereq GenCB 301. Reviews of recent and classical research in genetics and cell biology.

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.

Microbiology I 101 [B] Introductory Microbiology 4 (3-3) Microbiology for the informed citizen as it impacts humans and their environment. Not for students who have taken Biol 103 and 104. Credit not granted for both Micro 101 and Micro 102/105.

Introductory Microbiology 3 Description of microorganisms and the role they play in disease production, public health, the environment and in commercial processes. Not for students who have taken Biol 103 and 104. Credit not granted for both Micro 101 and Micro 102/105.

[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.

General Microbiology 4 (3-3) Prereq Biol 104; Chem 240 or c//. Structure, function, nutrition, physiology and genetics of microbes and their application to immunology, pathology, microbial diversity and environmental microbiology.

Medical Microbiology 3 Prereq BC/ BP 364 or c//. Micro 301. Microbial pathogens and their relationship to disease.

Diagnostic Medical Bacteriology 2 (0-6) Prereq Micro 310 or c//. Techniques and tests for the identification of bacteria pathogenic for humans.

Microbial Ecology 3 Prereq Biol 104; Chem 240 or c//. Discussion of microorganisms behavior in nature and microbial activities influence on ecological balance.

Clinical Diagnosis 4 (2-6) Prereq Biol 104; organic chemistry. Theory, techniques, and interpretation of urinalysis, clinical chemistry, and hematology.

Introduction to Immunology 2 Prereq Biol 104, Chem 240. Immunology for science majors and students in professional programs. Credit not granted for both Micro 406 and 412.

Immunology 3 Prereq Micro 301; org chem. Principles of basic immunology. Credit not granted for both Micro 412 and 406. Credit granted for both Micro 412 and 406.

[M] Immunology Laboratory 2 (0-6) Prereq Micro 412 or c//. Fundamentals and techniques used in immunology.

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 514. Cooperative course taught by WSU, open to UI students (MMBB 414).

[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).

Food and Applied Microbiology 2 Same as FSHN 416.

Food Microbiology Laboratory 2 (0-6) Same as FSHN 417.

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).

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.

Soil Microbial Ecology 3 Same as SoilS 431.

Molecular Mechanisms in Microbiology 2 In-depth discussion of molecular mechanisms and different experimental approaches in microbiology. Cooperative course taught by UI (MMBB 450), open to WSU students.

Environmental Microbiology 3 Prereq college-level biology, microbiology, organic chemistry. Microbial contamination and interactions between microorganisms and the environment, methods and mechanisms of bioremediation. Credit not granted for both Micro 452 and 552.

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.

Techniques in Molecular Biology 3 (1-6) Prereq GenCB 364, Micro 301, or Micro 324. Basic principles and techniques of gene manipulation.

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.

Senior Project in Microbiology 1 Prereq senior Micro major. Laboratory research or library project and seminar presentation.

Immunology 4 The immune system at the animal, cellular, and molecular levels. Credit not granted for both Micro 412 and 512. Cooperative course taught by WSU, open to UI students (MMBB 512).

General Virology 3 Graduate-level counterpart of Micro 414; additional requirements. Credit not granted for both Micro 414 and 514.

Basic and Applied Microbial Physiology 3 Graduate-level counterpart of Micro 428; additional requirements. Credit not granted for both Micro 428 and 528.

Molecular Techniques in Microbiology 3 (1-6) Prereq grad. level biochemistry or molecular biology course or instructor consent. Current molecular biology techniques applied to DNA and protein isolation and characterization: southern and western blots, PCR, PAGE, computer cloning. Cooperative course taught by WSU, open to UI students (MMBB 529).

Seminar 1 May be repeated for credit. Literature reviews and research reports.
School of Molecular Biosciences

552 Environmental Microbiology 3 Graduate-level counterpart of Micro 452; additional requirements. Credit not granted for both Micro 452 and 552.

560 Molecular Genetics 3 Same as GenCB 560.

562 Advanced Pathogenic Mechanisms 3 Prereq by interview only. Detailed analysis of microbial virulence factors and host factors involved in infection and infectious disease. Cooperative course taught jointly by WSU and UI (MMBB 562).

565 Molecular Biology I 3 Same as BC/BS 565.

566 Molecular Biology II 3 Same as GenCB 566.

568 Microbial Transformation 3 Prereq BC/BS 564, Micro 428. Use of microbes in the biodegradation of wastes and bioprocessing to produce valuable chemical stocks. Cooperative course taught by UI (MMBB 568), open to WSU students.

570 Advanced Immunology 3 Prereq introductory course in immunology. Cellular and molecular regulation of the immune response. Cooperative course taught by WSU, open to UI students (VS 570).

580 Selected Topics in Microbiology 1 May be repeated for credit; cumulative maximum 2 hours. Prereq 9 hours 300-400-level Micro.

582 Advanced Topics in Microbiology V 1-3 May be repeated for credit.

590 Selected Topics in Immunology 1 May be repeated for credit; cumulative maximum 2 hours. Prereq course in immunology. Seminar series on advances in immunology.

592 Selected Topics in Virology 1 May be repeated for credit. Prereq Micro 414/514 or c/c; by interview only. Selected topics in virology using the current literature.

593 Research Proposal 2 Written and oral presentation of a research proposal.

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

School of Music and Theatre Arts

The School of Music and Theatre Arts offers courses of study leading to the degrees of Bachelor of Music, Bachelor of Arts in Theatre 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

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

Normal progress in all music degree curricula requires enrollment during the freshman year in 300-level performance studies. Such enrollment requires an audition which is best completed during the semester (usually spring) prior to the student's matriculating in the university. Students who do not audition early must do so during the first week of classes in the term. Normal progress also assumes placement in 200-level music theory. Theory placement tests will be administered as part of the performance audition. Students who do not qualify for 300-level performance studies and 200-level theory studies as freshmen will usually require more semesters and credit hours of performance studies to complete a degree than listed in this schedule of studies. To certify as a major pursuing any degree in music, students must meet the following criteria:

Completion of 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 curriculum; [approval requires two semesters' study as specified by each area: Keyboard at 300 level with grade of C or better, Brass and Percussion at 300 level with grade of B- or better, Woodwinds at 300 level with grade of B- or better, and Voice at 200 level with grade of B- or better]; completion of application available from department. Students not passing the upper-division exam after the second attempt will be decertified as music majors.

In addition the College of Education requires 2.5 g.p.a. and C or better in each course listed for the major, minor and professional core, plus a 2.5 cumulative g.p.a., of students certifying in any of the Bachelor of Music in Music Education curricula.

As indicated in the requirements listed under the various majors and options for the Bachelor of Music degree and the Bachelor of Arts degree in Music, each student must satisfactorily complete all music courses with a minimum 2.5 g.p.a. and a grade of C or better in each music course. Each student is required to pass the piano proficiency exam and the upper-division exam. Students must also complete the General Education Requirements plus those for the College of Liberal Arts.

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>First Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Degree Program Course, if necessary</td>
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</tr>
<tr>
<td>Mus 251</td>
<td>3</td>
</tr>
<tr>
<td>Mus 252</td>
<td>1</td>
</tr>
<tr>
<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
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Second Semester

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<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biological Sciences [B] (GER)</td>
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<td>Degree Program Course, if necessary</td>
</tr>
<tr>
<td>Mus 161</td>
</tr>
<tr>
<td>Mus 253</td>
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<tr>
<td>Mus 254</td>
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<tr>
<td>Mus Ensemble</td>
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<tr>
<td>Mus Private Lessons</td>
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Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Degree Program Course, if necessary</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 351</td>
<td>3</td>
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<tr>
<td>Mus 352</td>
<td>1</td>
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<tr>
<td>Mus Ensemble</td>
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<td>Mus Private Lessons</td>
<td>4</td>
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Second Semester

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree Program Course, if necessary</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
</tr>
<tr>
<td>Math Proficiency [N] (GER)</td>
</tr>
<tr>
<td>Mus 353</td>
</tr>
<tr>
<td>Mus 354</td>
</tr>
<tr>
<td>Mus Ensemble</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
</tr>
</tbody>
</table>

1 For Brass, Percussion, Strings, Winds, and Voice degree programs, take Mus 181/182/281. (Class piano credits not required for degree.)

2 Fall only.
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 453²</td>
<td>2</td>
</tr>
<tr>
<td>Mus 462</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
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<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 453²</td>
<td>2</td>
</tr>
<tr>
<td>Mus 481²</td>
<td>1</td>
</tr>
<tr>
<td>Mus 486</td>
<td>2</td>
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<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
<td>4</td>
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<table>
<thead>
<tr>
<th>Senior Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
<td>6</td>
</tr>
<tr>
<td>Mus Ensemble²,³</td>
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<tr>
<td>Music Electives</td>
<td>4</td>
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<tr>
<td>Second Semester</td>
<td>Hours</td>
</tr>
<tr>
<td>Mus Ensemble²,³</td>
<td>1</td>
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<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Music Electives</td>
<td>3-5</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>5</td>
</tr>
</tbody>
</table>

¹ Fall only.
² Spring only.
³ Chosen from Mus 428-444.
⁴ Ensemble required if enrolled for applied music, but not required for degree; may be used as elective.

### VOICE PERFORMANCE DEGREE PROGRAM (OPTION II - 139 HOURS)

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.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 360 [M] ¹</td>
<td>3</td>
</tr>
<tr>
<td>Mus 428</td>
<td>1</td>
</tr>
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<td>Mus 491</td>
<td>2</td>
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<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>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 361 [M] ²</td>
<td>3</td>
</tr>
<tr>
<td>Mus 441</td>
<td>1</td>
</tr>
<tr>
<td>Mus 453²</td>
<td>2</td>
</tr>
<tr>
<td>Mus 481²</td>
<td>1</td>
</tr>
<tr>
<td>Mus 486²</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ Fall only.
² Spring only.
³ Chosen from Mus 428-444.
⁴ Ensemble required if enrolled for applied music, but not required for degree; may be used as electives.

### KEYBOARD PERFORMANCE (ELECTIVE STUDIES IN PEDAGOGY) DEGREE PROGRAM (OPTION III - 138 HOURS)

Requirements include: Accompany a junior, senior, or graduate recital; piano proficiency exam; upper-division exam; junior recital; senior recital; 2.5 average in all music courses; C or better in all music courses.

<table>
<thead>
<tr>
<th>Junior Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
<td>Hours</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
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</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 451²</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>4</td>
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</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>
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<tr>
<td>Mus 453²</td>
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<td>Mus 481²</td>
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<tr>
<td>Mus 486²</td>
<td>2</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>4</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ Fall only.
² Spring only.
³ Chosen from Mus 428-444.
⁴ Ensemble required if enrolled for applied music, but not required for degree; may be used as electives.
MAJOR IN MUSIC

BACHELOR OF MUSIC, WITH ELECTIVE STUDIES IN BUSINESS (128 HOURS)

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.

Students must pass the piano proficiency exam, pass the upper-division exam, achieve a 2.5 g.p.a. and a grade of C or better in all Music classes. The 3 credits of 300-400-level Music Electives may not be in music private lessons or ensembles. Class piano credits are not required for the degree. The College of Business and Economics offers several minors. Criteria for certification of a minor include completion of 60 credits and meeting other criteria set by the College of Business and Economics.

Some business and economics minors require only 16 credits; this number has been used in calculating the degree credit total. Where a minor requires additional credits, this number has been used in calculating the degree credit total. Where a minor requires additional credits, either students may use elective hours or must complete additional credits for the degree. In order to take 300-400-level courses in the College of Business and Economics, the student must be certified in her/his major and have completed at least 60 credits.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Eng 101 [W] (GER)</td>
<td>3</td>
<td></td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mus 181</td>
<td>0 or 1</td>
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</tr>
<tr>
<td>Mus 251</td>
<td>3</td>
<td></td>
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<tr>
<td>Mus 252</td>
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<tr>
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**BACHELOR OF MUSIC, WITH ELECTIVE STUDIES IN THEATRE (128 HOURS)**

This program offers specialization in music, with major and have completed at least 60 credits.

and Economics, the student must be certified in her/his primary field of study. Certification of the Theatre Minor requires prior certification in music. Students following this option are required to present an acceptable senior half recital in the major performance medium. Students must pass the piano proficiency exam, pass the upper-division exam, achieve a 2.5 g.p.a. and a grade of C or better in all Music classes. Class piano credits are not required for the degree. The Theatre Minor requires 90 credits. The Theatre Minor is a total of 20 credits.

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2 Chosen from Mus 428-444.
3 Spring only.
4 Alternate years.
### MAJOR IN COMPOSITION

**COMPOSITION DEGREE PROGRAM (OPTION V - 141 HOURS)**

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

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#### Senior Year

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<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
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</tr>
<tr>
<td>Mus Ensemble^1,^2</td>
<td>1</td>
</tr>
<tr>
<td>Mus 455^1</td>
<td>2</td>
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<tr>
<td>Mus 456</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
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<tr>
<td>Electives</td>
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#### Second Semester Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<tr>
<td>Mus 202 or 302</td>
<td>2</td>
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<tr>
<td>Mus 361 [M]^1</td>
<td>3</td>
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<tr>
<td>Mus Ensemble^1,^2</td>
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<tr>
<td>Mus 453</td>
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</tr>
<tr>
<td>Mus 456</td>
<td>2</td>
</tr>
<tr>
<td>Music Electives</td>
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</tr>
</tbody>
</table>

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### MAJOR IN MUSIC EDUCATION

**BROAD ENDORSEMENT DEGREE PROGRAM (OPTION Iv - 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 exam, piano proficiency, solo half-recital. Approved Performing Groups: A minimum of 1 hour during each of 7 semesters, to include at least one semester of Mus 435 for instrumentalists and 428 for vocalists. Include a minimum of 2 hours in choral and 2 hours in instrumental performing groups.

#### Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester Hours</td>
<td></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>Mus 181</td>
<td>1</td>
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<tr>
<td>Mus 251</td>
<td>3</td>
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<tr>
<td>Mus 252</td>
<td>1</td>
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<tr>
<td>Mus 253</td>
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<td>Mus 254</td>
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<td>Mus Ensemble</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
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<td>Music Electives</td>
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#### Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>First Semester Hours</td>
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</tr>
<tr>
<td>EdPsy 402</td>
<td>2</td>
</tr>
<tr>
<td>Mus 361 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Mus 482</td>
<td>1</td>
</tr>
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<td>Mus 488</td>
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<td>Mus 493</td>
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<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 400</td>
<td>2</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
<td>4</td>
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#### Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester Hours</td>
<td></td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 453 or T &amp; L 328^1</td>
<td>2</td>
</tr>
<tr>
<td>Mus 487</td>
<td>2</td>
</tr>
<tr>
<td>Mus 489</td>
<td>2</td>
</tr>
<tr>
<td>Mus 494</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 328</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 445</td>
<td>2</td>
</tr>
</tbody>
</table>

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### MAJOR IN THEATRE

**THEATRE DEGREE PROGRAM (OPTION VI - 124 HOURS)**

Requirements include: Upper division exams; 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>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester Hours</td>
<td></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>Mus 181</td>
<td>1</td>
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<td>Mus 251</td>
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<td>Mus 252</td>
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<tr>
<td>Mus 253</td>
<td>3</td>
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<tr>
<td>Mus 254</td>
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<tr>
<td>Mus Ensemble</td>
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<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Music Electives</td>
<td>2</td>
</tr>
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#### Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester Hours</td>
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</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 251</td>
<td>1</td>
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<tr>
<td>Mus 351</td>
<td>3</td>
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<tr>
<td>Mus 352</td>
<td>1</td>
</tr>
<tr>
<td>Mus 491</td>
<td>2</td>
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<tr>
<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Mus Private Lessons</td>
<td>2</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
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<tr>
<td>T &amp; L 300</td>
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#### Junior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester Hours</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Mus 360 [M]</td>
<td>3</td>
</tr>
<tr>
<td>Mus 482</td>
<td>1</td>
</tr>
<tr>
<td>Mus 488</td>
<td>2</td>
</tr>
<tr>
<td>Mus 493</td>
<td>2</td>
</tr>
<tr>
<td>Mus Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>T &amp; L 400</td>
<td>2</td>
</tr>
<tr>
<td>Science Elective (GER)</td>
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</tr>
</tbody>
</table>

#### Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester Hours</td>
<td></td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Mus 453 or T &amp; L 328^1</td>
<td>2</td>
</tr>
<tr>
<td>Mus 487</td>
<td>2</td>
</tr>
<tr>
<td>Mus 489</td>
<td>2</td>
</tr>
<tr>
<td>Mus 494</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 328</td>
<td>2</td>
</tr>
<tr>
<td>T &amp; L 478</td>
<td>2</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
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</tbody>
</table>
**Fifth Year**

**First Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Math Proficiency [N] (GER) 3 or 4
- T & L 328 2

**Second Semester**
- Arts & Humanities [H,G] or Social Sciences [H,G,I,S,K] (GER) 6
- Complete Writing Portfolio

**Second Semester**
- Ed Psych 402 2
- T & L 415 12

---

1 T & L 328 required for degree; Mus 453 or 455 required.

**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.

**Freshman Year**

**First Semester**
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- Mus 151 0 or 3
- Mus 181 0 or 1
- Mus Private Lessons 2
- Psych 105 [S] (GER) 3

**Second Semester**
- ComSt 102 [C] (GER) 3
- Engl 201 [W] (GER) 3
- GenEd 111 [A] (GER) 3
- Mus 161 3
- Mus Ensemble 1
- Mus Private Lessons 2

**Sophomore Year**

**First Semester**
- Biological Sciences [B] (GER) 4
- Intercultural [I,G,K] (GER) 3
- Mus 182 0 or 1
- Mus 251 3
- Mus 252 2
- Mus 491 2
- Mus Ensemble 1
- Mus Private Lessons 2
- T & L 300 1

**Second Semester**
- Mus 253 3
- Mus 254 1
- Mus 281 0 or 1
- Mus 481 1
- Mus 490 4
- Mus Ensemble 1
- Mus Private Lessons 2
- T & L 301 2

**Junior Year**

**First Semester**
- Biological Sciences [B] (GER) 4
- Intercultural [I,G,K] (GER) 3
- Mus 182 0 or 1
- Mus 251 3
- Mus 252 2
- Mus 491 2
- Mus Ensemble 1
- Mus Private Lessons 2
- T & L 301 2
- May Field Experience
- Certify Major, Certify T & L

**Second Semester**
- Biological Sciences [B] (GER) 4
- Ed Psych 402 2
- GenEd 111 [A] (GER) 3
- Mus 351 3
- Mus Ensemble 1
- Mus Private Lessons 2
- T & L 400 2

**Second Semester**
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Ed Psych 402 2
- T & L 415 12

---

2 T & L 328 required for degree; Mus 453 or 455 required.

**CHORAL/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.

**Freshman Year**

**First Semester**
- Biological Sciences [B] (GER) 4
- Intercultural [I,G,K] (GER) 3
- Mus 182 0 or 1
- Mus 251 3
- Mus 252 2
- Mus 491 2
- Mus Ensemble 1
- Mus Private Lessons 2
- T & L 301 2

**Junior Year**

**First Semester**
- Biological Sciences [B] (GER) 4
- Intercultural [I,G,K] (GER) 3
- Mus 182 0 or 1
- Mus 251 3
- Mus 252 2
- Mus Ensemble 1
- Mus Private Lessons 2
- Psych 105 [S] (GER) 3

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194
### Mus 491
- 2

### Tier III Capstone (GER)
- 3

### Ensemble and Mus Private Lessons—optional

### Fifth Year

#### First Semester
- **Hours**
  - Mus 497
  - 4
  - T & L 415
  - 12

#### Second Semester
- **Hours**
  - Mus Ensemble (Instrumental)
  - 1
  - Mus Private Lessons
  - 2
  - Science Elective (GER)
  - 4
  - T & L 300
  - 1

#### Junior Year

#### First Semester
- **Hours**
  - Mus 351
  - 3
  - Mus 352
  - 1
  - Mus 360 [M] (GER)
  - 3
  - Mus 455 or T & L 328
  - 1
  - Mus Ensemble (Choral)
  - 1
  - Mus Private Lessons
  - 2
  - T & L 302
  - 2
  - T & L 303
  - 3
  - T & L 317
  - 2

#### Complete Writing Portfolio

#### Second Semester
- **Hours**
  - Arts & Humanities [H,G] or Social Sciences [S,K] (GER)
  - 3
  - EdPsy 402
  - 2
  - Intercultural [L,G,K] (GER)
  - 3
  - Mus 257
  - 2
  - Mus 353
  - 3
  - Mus 354
  - 1
  - Mus 428 or 435
  - 1
  - Mus 453 or T & L 328
  - 2
  - Mus 481
  - 1
  - Mus Private Lessons
  - 2
  - T & L 400
  - 2

#### Senior Year

#### First Semester
- **Hours**
  - Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)
  - 6
  - Mus 460 [M]
  - 3
  - Mus 480
  - 3
  - Mus 488
  - 2
  - Mus 493
  - 2
  - Mus Ensemble (Choral)
  - 1
  - Mus Private Lessons (400-level, Sr. Recital)
  - 2
  - Tier III Capstone (GER)
  - 3

#### MA Degree—first semester

#### Second Semester
- **Hours**
  - Mus 361 [M]
  - 3
  - Mus 487 (in MA degree)
  - 2
  - Mus 494 (in MA degree)
  - 2
  - Mus 550 or 500 (in MA degree)
  - 2
  - Mus 575 (in MA degree)
  - 1
  - Mus 589 (in MA degree)
  - 2
  - Physical Science [P] (GER)
  - 4
  - T & L 404
  - 3
  - T & L 445
  - 2

### BACHELOR OF ARTS IN MUSIC
- (123 HOURS)

This four-year program is designed to meet the needs of students wishing a broad liberal arts background with a major in music. Of the total 120 credits required for a degree in this program, 73 credits are devoted to courses outside music, including the General Education Requirements. Non-music courses other than those used for the GERs must be at the 200-level or above. 40 credits of the 120 required for the degree must be in 300-400-level. Music credits beyond the required 47 credits in music add to the number of credits required in the degree. Other requirements include: C or better in all music courses; 2.5 music average; upper-division exam; piano proficiency exam or grade of C or better in Mus 182.

### Freshman Year

#### First Semester
- **Hours**
  - Engl 101 [W] (GER)
  - 3
  - Mus 181
  - 0 or 1
  - Mus 252
  - 3
  - Mus Ensemble
  - 1
  - Mus Private Lessons
  - 2
  - Science Elective (GER)
  - 4

#### Second Semester
- **Hours**
  - Biological Sciences [B] (GER)
  - 4
  - Mus 161
  - 3
  - Mus 182
  - 3
  - Mus 253
  - 3
  - Mus 254
  - 1
  - Mus Ensemble
  - 1
  - Mus Private Lessons
  - 2

### Sophomore Year

#### First Semester
- **Hours**
  - GenEd 111 [A] (GER)
  - 3
  - Mus 281
  - 1
  - Mus 353
  - 3
  - Mus 354
  - 1
  - Mus Ensemble
  - 1
  - Mus Private Lessons
  - 2
  - Physical [P] Sciences (GER)
  - 4

#### Junior Year

#### First Semester
- **Hours**
  - Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)
  - 6
  - Mus 360 [M] 2
  - 3
  - Mus 351
  - 3
  - Mus 453
  - 2
  - Mus 352
  - 1
  - Mus Ensemble
  - 1
  - Mus Private Lessons
  - 2

#### Second Semester
- **Hours**
  - 200-400-level Non-Music Electives
  - 6
  - Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER)
  - 3
  - Intercultural [L,G,K] (GER)
  - 3
  - Mus 360 [M] 2
  - 3
  - Mus Ensemble
  - 1
  - Complete Writing Portfolio

#### School of Music and Theatre Arts

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School of Music and Theatre Arts
School of Music and Theatre Arts

Second Semester | Hours
---|---
200-400-level Non-Music Electives | 8
300-400-level Music Elective | 4
Tier III Capstone (GER) | 3

1 Music performing group required if enrolled for applied music, but not required in degree or class piano credits; not required in degree.
2 Fall only.
3 3 Chosen from Mus 428-444.
4 Spring only.

MASTER OF ARTS IN MUSIC

Please consult the current WSU Graduate Study Bulletin. For students pursuing the combined BM/MA with teacher certification in Music, please consult the department.

Jazz Studies Minor

Required courses: Mus 257, 258, 438, 439, 440, 457, 458, and one 3-credit Mus course.

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 endorsements are in other majors.

Theatre Arts and Drama

Associate Professor and Theatre Arts and Drama Coordinator: T. Converse; Professor, L. H. Harris; Associate Professors, T. Converse, L. Furman, W. H. Shephard.

The Theatre Arts and Drama Program provides musical theatre students with a foundation of studies in production, history and analysis of the theatre arts within a liberal arts context. As an integral part of the academic program, WSU Theatre presents a regular schedule of productions by faculty and students. The undergraduate curriculum offers a well-rounded background in all of the major disciplines of theatre.

Degree Program Requirements

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

Students seeking the Bachelor of Arts in Theatre Arts and Drama must complete the General Education Requirements plus those for the College of Liberal Arts. Students pursuing a teaching endorsement option must have a minimum g.p.a. of 2.5 in all of the following areas: cumulative g.p.a., Professional Education Core with a C or better in each course, and academic major with a C or better in each course (and minor if any). Students certifying as majors in teacher endorsement curricula must also certify as majors in the College of Education.

THEATRE ARTS AND DRAMA DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester | Hours
---|---
Engl 101 [W] (GER) | 3
GenEd 110 [A] (GER) | 3
Science Elective (GER) | 4
Theat 145 | 3
Theat 260 | 3

Second Semester | Hours
---|---
Communication Proficiency [C,W] (GER) | 3
GenEd 111 [A] (GER) | 3
Math Proficiency [N] (GER) | 3 or 4
Theat 163 | 3
Theat 360 | 3

Sophomore Year

First Semester | Hours
---|---
Intercultural [I,G,K] (GER) | 3
Physical Sciences [P] (GER) | 4
Social Sciences [S,K] (GER) | 3
Theat 261 | 3
Theat 496 | 1

Second Semester | Hours
---|---
Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) | 3
Biological Sciences [B] (GER) | 4
Theat 361 | 3
Theat 362 | 3
Theat 496 | 1

Junior Year

First Semester | Hours
---|---
Arts & Humanities, Intercultural, or Social Sciences [H,G,I,S,K] (GER) | 3
Literature Elective [H] (GER) recommended | 3
Theat 363 or 364 | 3
Theat 365 | 3
Theat 402 | 1
Theat 496 | 1

Complete Writing Portfolio

Second Semester | Hours
---|---
Literature Elective [H] (GER) recommended | 3
Theat 264 or 294 | 2
Theat 363 or 364 | 3
Theat 366 | 3
Theat 402 | 1
Theat 467 | 3
Theat 496 | 1

Senior Year

First Semester | Hours
---|---
Theat 313 | 3
Theat 401 or 465 | 3
Theat 496 | 1
Electives | 9

Second Semester | Hours
---|---
Theat 496 | 1
Tier III Capstone (GER) | 3
Electives | 8

1 Spring only course.

MASTER OF ARTS IN THEATRE ARTS AND DRAMA—MASTER OF ARTS IN TEACHING IN THEATRE ARTS AND DRAMA

Please consult the current WSU Graduate Study Bulletin.

Teaching Endorsements

A theatre minor is available. For details, contact the Theatre Program. Also available is a supporting teaching endorsement in drama for students whose primary teaching endorsement is in another field.

Description of Courses

Performance Studies in Music

Performance studies are offered on several levels to meet the needs of music majors as well as those of students from the general university community. There are no additional fees beyond tuition for either performance studies or the use of practice facilities. 100-level performance studies in selected instruments are open to any student without audition through class instruction. The 200-level denotes group or private instruction for advanced non-music majors by special permission of the Director (audition required) or study in a secondary performance medium by music majors.

Individual instruction in performance studies is offered at the 300- and 400-level for music majors and, by special permission of the Director, to advanced non-music majors who meet all requirements for music majors as listed below. All students enrolled in 200- through 400-level performance instruction are required to attend weekly convocation (student recital), attend recitals as required, participate in at least one approved music department ensemble, and take jury examinations at the end of each term. For enrollees in Mus 203, 303, or 403, the required ensemble is Mus 431 or Mus 432. Students enrolled in 300- and 400-level performance study must enroll in a music theory or music history course each semester until music core requirements have been completed. No student will be permitted to enroll in 300-400-level performance studies unless all of these criteria are met. In addition, each music major must pass the piano proficiency exam, as a precondition to 400-level standing.

Performance studies may not be taken on a pass, fail basis or audited. Enrollment in performance studies by university employees under the fee waiver policy is by permission of the director.

Nonmajor and Secondary Performance Studies

Lower-division courses and Mus 319 available for 2 credits only and may be repeated for credit. Mus 319 is designed for 300-400-level study on secondary instrument or voice by music majors.

Class Instruction

Mus
102 Piano
103 Voice
120 Guitar

Studio Instruction

Mus
201 Organ
202 Piano
203 Voice Prereq c// in Mus 431, 432, or by interview only.
204 Horn
205 Trumpet
206 Trombone
207 Baritone
208 Tuba
209 Percussion
210 Violin
The lab-lecture ratios of these courses reflect the number of rehearsal hours per week (for example, 0-4 equals 4 hours of rehearsal weekly). All courses (except Mus 430) in this section are repeatable for credit up to a maximum of 6 credits. The Music Program limits to 4 the number of music performing group credits that may be counted toward the 30 credit hour minimum for the Master of Arts in Music. All 500-level courses in this section are offered conjointly with 400-level courses by the same name. The usual prohibition against credit for both 400-500-level credit for conjoint courses does not apply to music performing groups.

Mus

428 Opera Workshop 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performance may be required.

429 Crimson Company Quartet 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. SATB. All styles of popular music; public performances required.

430 Crimson Company Show Choir 2 (0-8) May be repeated for credit; cumulative maximum 16 hours. By audition only. Popular music performances with choreography. Public performances required.

431 Concert Choir 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

432 University Singers 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Public performance may be required.

433 Vocal Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Orchestral literature and public performance each semester.

434 Symphony Orchestra 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances required.

435 Chamber Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

436 Symphonic Band 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances.

437 Wind Symphony 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

438 Jazz-Lab Band 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

439 Vocal Jazz Ensemble 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. By audition only. Public performances each semester.

440 Jazz Combos 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Prereq Mus 258. By audition only. Public performances each semester.

441 Accompanying 1 (0-4) May be repeated for credit; cumulative maximum 8 hours.

444 Marching Band/Varsity Band 1 May be repeated for credit; cumulative maximum 8 hours. By audition only.

467 Marching Band Techniques 2 (0-4) Prereq Mus 253. In-depth experience with planning, designing and arranging marching band shows using traditional and contemporary techniques.

528 Opera Workshop 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 428; additional requirements.

531 Concert Choir 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 431; additional requirements.

533 Vocal Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 433; additional requirements.

534 Symphony Orchestra 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 434; additional requirements.

535 Chamber Ensembles 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 435; additional requirements.

537 Wind Symphony 1 (0-4) May be repeated for credit; cumulative maximum 8 hours. Graduate-level counterpart of Mus 437; additional requirements.
353 Materials and Structures of Music IV 3 Prereq Mus 351. Vertical, linear and formal relationships of 20th century music; writing, analysis, listening.

354 Applied Theory IV 1 (0-3) Prereq Mus 352. Continued development in ear training, sight singing, keyboard and dictation, emphasizing 20th century music.

451 Seminar in Counterpoint 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 353. Contrapuntal techniques of the 16th and 18th century with original stylistic writing.

452 Electronic Music 2 (1-3) Prereq Mus 353. Introduction to computer-controlled digital, analog, and sampling synthesis; topics include sequencing, waveform editing, and creative projects.

453 Form and Analysis 2 Prereq Mus 353. Organization of musical works according to the relationships in sectional divisions, thematic divisions, and tonal bases.

455 Seminar in Instrumentation 2 May be repeated for credit. Prereq Mus 352. Scoring for various instrumental combinations.

456 Seminar in Advanced Composition V 1-3 May be repeated for credit. Prereq upper-level composition review. Original writing in small and large forms (traditional and experimental).

457 Seminar in Jazz Arranging/Composition 2 Prereq Mus 257. Arranging and composing for instrumental jazz ensembles.

458 Advanced Jazz Improvisation 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 258. Advanced concepts in jazz improvisation each course.

550 Seminar in Analysis 2 May be repeated for credit; cumulative maximum 4 hours. Prereq Mus 453 or c/. Required of all graduate students. Applications of analytical techniques to develop a basis for musical understanding and interpretation.

553 Seminar in Music Theory 2 May be repeated for credit; cumulative maximum 4 hours.

556 Graduate Seminar in Advanced Composition V 2 (1-2) or 3 (1-4) May be repeated for credit; cumulative maximum 10 hours. Prereq by interview only. The creation of works for either traditional acoustic ensembles or electro-acoustic media.

History and Literature

Mus

160 [H] Survey of Music Literature 3 Exploration of predominantly western music through demonstrations, performances, lectures, concerts, and discussions.

161 Introduction to Critical Studies in Music 3 Prereq Mus 152, 251, or c/. Historical styles of music through analytical listening, score examination and source materials.

163 [G] World Music 3 Exploration of music from a global perspective through demonstrations, performances, lectures and discussion.

262 Rock Music: History and Social Analysis 3 History and analysis of rock music related to its African American origins, its societal role, and its diverse development and impact.


362 [H] History of Jazz 3 History of jazz in chronological sequence; social and political contexts of the African-American origins of jazz; stylistic developments.

363 [G] Women and Music 3 Survey of the world's history of women in music in their respective social and political contexts.

369 Topics Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours.

465 Seminar in Major Performance Literature 2 May be repeated for credit; cumulative maximum 6 hours. Prereq Mus 351 or c/. Survey/performances of solo and chamber literature for voice, keyboard, strings, winds, brass, percussion.

466 Seminar in Band Literature and Performance 1 May be repeated for credit; cumulative maximum 4 hours. Survey and analysis of recently published literature for use in instrumental music programs of the public schools.

560 Introduction to Graduate Studies in Music 2 Required of all graduate students in Mus. Basic bibliographic and research techniques; written presentations related to area of emphasis.

561 Seminar in Literature of 20th Century Music 2 Prereq Mus 351. Impressionism, expressionism, neoclassicism, neoromanticism, and jazz recently electronic music.

562 Symphonic Literature 2 Symphony orchestra and symphonic form from its beginning to modern times studied from the score.

566 Seminar in Music History 2 May be repeated for credit; cumulative maximum 6 hours. Prereq Mus 361. Various historic periods and composers.

Music Education, Pedagogy, and Conducting

Mus

371 Diction for Singers 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 choral and vocal jazz ensembles.


487 String Techniques 2 (0-6) Prereq Mus 490. String techniques, materials and methods for music education majors.

488 Choral Methods and Materials I 2 (0-6) Prereq Mus 490. Preparation in the administration of choral programs from auditions to the selection and rehearsal of choral literature. Credit not granted for both Mus 488 and 588.

489 Choral Methods and Materials II 2 Prereq Mus 488/588. Development of skills in choral arranging, curriculum construction, research, and job placement. Credit not granted for both Mus 490 and 590.

490 General Music Material/Methods 4 (3-2) Prereq Mus 491. Materials and methods for general music education majors; multiculturalism, collaboration, developmental curriculum and research issues; addressing national standards; observations. Credit not granted for both Mus 490 and 590.

491 Voice Pedagogy 2 (1-3) Pedagogy methods course in voice; anatomy of the singing process; methodology of teaching voices in various learning and teaching styles. Credit not granted for both Mus 491 and 591.

493 Wind and Percussion Techniques I 2 (0-6) Prereq Mus 481. Brass, woodwind, and percussion techniques for music education majors.

494 Wind and Percussion Techniques II 2 (0-6) Prereq Mus 493. Brass, woodwind and percussion techniques; elementary instrument conducting for music education majors.

497 Directed Student Teaching in Music 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 488; 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.

599 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, musicology or performance. S, F grading.

497 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 2-4 Varying subjects offered at graduate level.

597 Topics for Music V 1-4 Varying subjects offered at undergraduate 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

Dance

210 Jazz Dance I 1 (0-3) Basic jazz dance techniques, stage choreography, and performance.

211 Modern Dance I 1 (0-3) Basic modern dance techniques, stage choreography, and performance.

310 Jazz Dance II 1 (0-3) Prereq two years prior dance experience. Advanced jazz dance techniques, stage choreography, and performance.

311 Modern Dance II 1 (0-3) Prereq two years prior dance experience. Advanced modern dance techniques, stage choreography, and performance.

Theatre

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 (0-6) Study of the principles, procedures, and practices of stage direction; weekly performance exercises culminating in directing a ten-minute play.

264 Stage Makeup 2 (0-6) Basic techniques in the design and execution of makeup for the stage and television.

294 Stage Speech 2 (0-6) May be repeated for credit; cumulative maximum 4 hours. Techniques and exercises for development of the actor’s voice for the stage: voice production, articulation, and application.

313 Movement for Stage 3 (0-6) Prereq interview with instructor. Movement awareness skills for performers, public speakers, and broadcast personnel.

360 Performance II: Acting 3 (0-6) Prereq Theat 260, by interview only. Acting together with practical experience working with student directors and guiding the actor toward structuring a role for performance.

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. EMAIL and WEB access required.

363 Lighting for Theatre and Television 3 (2-3) Prereq Theat 163 or by interview only. Stage lighting design and technology; lighting instruments, control systems, principles of optics, color and electricity; practical applications with WSU productions.

364 Scenery: Construction and Painting 3 (2-3) Prereq Theat 163. Constructing and painting scenery; advanced methods for shifting scenery and creating special effects; materials and techniques for the scenic artist.

365 [H] [M] Theatre History I: Beginnings to 1700 3 Development of theatre and drama from its beginning to 1700; major trends, plays, playwrights; actors, architecture, scenery, and costumes.

366 [H] [M] Theatre History II: 1700 to 1900 3 Development of theatre and drama from approximately 1700 to 1900; major developments in theatre arts and dramatic literature.

367 [H] Musical Theatre 3 Survey of musical theatre from Vienna to Broadway, lyric drama from Mozart to the present.

401 Dramaturgy 3 Prereq by interview only. Strategies for collaborating with directors, designers, and playwrights; investigating theatrical contexts; adapting and/or updating scripts; communicating effectively with audiences.

402 Production Analysis 1 (0-3) May be repeated for credit; cumulative maximum 6 hours. Analysis and comparison of theatre productions through discussion and written evaluation. Credit not granted for both Theat 402 and 502.

418 Topics—Study Abroad 3

419 Topics—Study Abroad 3 May be repeated for credit; cumulative maximum 6 hours. Prereq Theat 163. Organization and management of theatrical productions; the role of the stage manager; back-stage crews; coordination of designers and directors.

450 Performance III: Acting 3 (0-6) May be repeated for credit; cumulative maximum 6 hours. Prereq Theat 360 or by interview only. Creative process of acting together with practical experience working with student directors; acting in an alternative or non-realistic context.

460 Technical Theatre Management 3 Prereq Theat 163. Organization and management of theatrical productions; the role of the stage manager; back-stage crews; coordination of designers and directors.

461 Performance III: Directing 3 (0-6) Prereq by interview only. Advanced work in stage direction; weekly exercises focusing on modern, non-realistic theatrical forms and culminating in directing a one-act play. Credit not granted for both Theat 461 and 561.

462 Visual Communication in Theatre, Film and Television 3 Analysis of the visual aspects of theatre, film and television applying research in perceptual psychology.

463 Seminar in Theatre Design 3 (0-6) May be repeated for credit; cumulative maximum 9 hours. Prereq Theat 163. Sketching, mechanical drawing, watercolors, model building, and use of theatrical materials and techniques.

464 Creative Drama 3 Philosophy and techniques of informal drama; practical experience integrated into the curriculum; emphasis on application to educational setting. Cooperative course taught by WSU, open to UI students (ThA 381). Credit not granted for both Theat 464 and 564.

465 Dramatic Theory and Criticism 3 Prereq Theat 362, 365, 366, or by interview only. Undergraduate seminar exploring the major developments in dramatic theory, concentrating particularly on the scope and boundaries of postmodern critical methodologies.

467 Topics in Drama 3 May be repeated for credit; cumulative maximum 6 hours. Individualized study and discussion of drama and performance theory from different historical eras and social contexts.

[M] Theatre for Young Audiences 3 Prereq Theat 260. Study in evolution of dramatic literature and production demands of Theatre for Young Audiences (TYA). Credit not granted for both Theat 468 and 568.

470 Theory and Practice of Puppetry Arts 3 Prereq Theat 163. Puppetry arts with emphasis in drama, education, and therapy; practical and theoretical application. Credit not granted for both Theat 470 and 570.

471 Applied Puppetry Arts 2 (1-3) Prereq c/* in Theat 470 or 570. Applications of puppetry arts theory to specific emphases: production, education and therapy. Credit not granted for both Theat 471 and 571.

472 Drama Therapy 3 Prereq current knowledge in psychology/counseling theory. Balanced theoretical and experiential approach toward understanding therapeutic applications of drama and theatre. Credit not granted for both Theat 472 and 572.

480 Playwriting 3 Prereq Engl 351. Practical experience in the creative process of playwriting.

490 Internship in Professional Theatre 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.

494 Acting: Rehearsal and Performance 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.

495 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.

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

501 Research Methods and Dramaturgy 3 Prereq graduate standing. Theory, methods, and practice of graduate-level research as applied to both scholarship and theatre productions.

502 Production Analysis 1 (0-3) May be repeated for credit; cumulative maximum 6 hours. Graduate-level counterpart of Theat 402; additional requirements. Credit not granted for both Theat 402 and 502.

504 Instructional Practicum 1 May be repeated for credit; cumulative maximum 4 hours. Instruction and guidance in teaching theatre arts and drama. S, F grading.
of extraordinary importance as society strives to both
sustain and balance the various ecological, socioeconomic
and aesthetic values provided by natural re-
sources and ecosystems. Given these facts, the Mis-
sion of the Department of Natural Resource Sciences
at WSU is to advance and impart knowledge of eco-
systems and natural resources, including their at-
trIBUTES AND FUNCTIONS; THEIR ECOCLOGICAL AND SOCIETAL VALUES; AND THEIR MANAGEMENT IN AN ECOCLOGICALLY, SIDEO
A AND ECONOMICALLY SOUND, SUSTAINABLE MANNER.

Our mission is pursued through programs in under-
graduate and graduate education, basic and applied
research, extension and continuing professional edu-
cation. These programs: (1) promote stewardship of
natural resources and ecological systems; (2) contrib-
ute to abundant and sustainable systems for food, fiber
and other natural resource-derived products and val-
ues; and (3) promote the well-being and quality-of-life
of resource-dependent communities and all other pub-
lies deriving or placing values on natural resources.

Our programs reflect and integrate the breadth of
disciplines and professions comprising the natural resource
sciences. Forestry, Range Management, Wildlife Ecol-
ogy, Wildland Recreation Management are represented
in the department, plus contributing biophysical and so-
cial sciences. Our programs also demonstrate a departmen-
dal dedication to positive working/learning environ-
ments that reflect and foster valuing, understand-
ning and respect of human diversity in the broadest sense.

Well-educated and motivated professionals are
needed to provide answers to questions of sustainabil-
ity and ecological diversity and meet the ever increasing
demands for the many values and products supplied by
the worlds' natural resources. The educational pro-
grams and the diversity of the faculty of the department
help students prepare to meet these needs. Our cur-
ricular feature not only traditional disciplines such as
Forestry, Range Management, Wildlife Ecology and
Wildland Recreation, but also provide opportunities in
other areas such as: applied plant and animal ecology;
conservation biology/biological diversity; wildlife/pre-
ventive veterinary science; landscape ecology; urban ecology/
resource management; wetland/aquatic resources; and
social/political dimensions of natural resources.

There are a variety of career options such as work
with state/federal land management or regulatory
agencies, municipal or county government, public
interest groups, natural resource industries, private
land management, the consulting industry, and re-
search/development in either the private or public
sectors. Graduates may work as foresters, range con-
servationists, wildlife biologists, park managers,
information specialists, game managers, consultants,
researchers, and in a variety of roles in developing
countries. In addition, with further education our
graduates are involved in environmental education in
grade schools and high schools, in the legal profes-
sion, and in natural resource law enforcement.

At the undergraduate level, the Department offers a
single undergraduate degree (B.S. in Natural Resource
Sciences), with majors: (1) Forestry, (2) Wildlife Ecol-
ogy, (3) Range Management, (4) Wildland Recreation
Management and (5) Natural Resources. Each major
provides opportunities for further specialization via
specific Options or with course selection. Irrespective
of Major/Option, all undergraduate students B.S. in
Natural Resource Sciences take a common set of
GER's and basic courses in biological, physical and
aerial sciences to the Pullman campus provide sig-
ificant opportunities for field and experiential learning
to natural resource science students. For further infor-
mation, visit http://coopext.cahe.wsu.edu/~nrs/.

### Degree Program Requirements

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

All letter-graded courses specifically required for each
degree program must be taken for letter grade (i.e., not
pass, fail). This applies to all students in Natural
Resource Sciences major and minor/option programs.

### Bachelor of Science in Natural Resource

Sciences

Students pursuing the BS in Natural Resource Sciences
must major in one (or more) of five areas: forestry, range
management, wildlife ecology, wildland recreation
management and/or natural resources. All majors share a set of
basic science and General Education Requirements
and a core of natural resource courses. The natural re-
source core is composed of a broad spectrum of courses
designed to expose students to a variety of natural re-
source disciplines, concepts and philosophies. It con-
tains coursework in the areas of measurements, social
and economic dimensions of natural resources, natural
resource ecology, plant identification and ecology, wild-

#### Department of Natural Resource

### Sciences

Professor and Chair, E.J. DePuit; Professors, D. M.
Bauam, A. A. Berryman; K. A. Blatter, R. C.
Chapman, D. P. Hanley, C. T. Robbins, J. D. Rogers,
Associate Professors, J. H. Bassman, W.T.
Bunderson, M.S. Carroll, L.H. Hardesty, B.C. Moore,
Assistant Professors, L.A. Shipley, R.B.
Zamora; Assistant Professors, L.A. Shipley, R.B.
Zamora; Assistant Professors, L.A. Shipley, R.B.
Zamora; Assistant Professors, L.A. Shipley, R.B.
Zamora; Assistant Professors, L.A. Shipley, R.B.
Zamora; Assistant Professors, L.A. Shipley, R.B.
Zamora; Assistant Professors, L.A. Shipley, R.B.
life ecology/management, and natural resource planning. In addition, each major has a core of courses designed to meet the requirements of the discipline and/or professional area represented by the major. Each major also includes options or course selections, which enable students to further specialize their education.

FORESTRY MAJOR
The forestry major is designed to provide students with the educational basis for successfully pursuing a professional career in forestry. This program is fully accredited by the Society of American Foresters.

Each forestry student, in addition to completing the university GER’s, basic science requirements and natural resource core, takes a core of forestry classes in such areas as forest measurements/remote sensing, silviculture, harvesting, soils, watershed and range management. Each student also selects a professional option. The forestry options include Business Management, Forest Management, Forest Wildlife, and Directed Studies. The Forest Management option provides a student with an understanding of the underlying principles and techniques used in forest management. Students completing the Forest Management option meet the qualifications of the U.S. Office of Personnel Management for forester. The Forest Wildlife option produces forestry professionals sensitive to the needs of wildlife, who are able to bridge the gap between the traditional forester and the wildlife biologist. With careful selection of courses students in the Forest Wildlife option will meet the federal qualifications for wildlife biologist. The Forest Business option (with business minor) provides students with a basic understanding of principles needed in the business aspects of forestry in the public and private sectors. In addition completion of the Forest Business option satisfies all the requirements for a minor in Business Administration. The Directed Studies option provides a student with the opportunity to develop a professional program that will meet individual career goals.

FIRST AND SECOND YEAR REQUIREMENTS
The first two years are common to all forestry degree programs. Please consult your advisor about when courses are available since some courses are taught only once yearly or on alternate years:

Freshman Year
First Semester
- Biol 103 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- NATRS 100 1
- Stat 212 [N] (GER) 4

Second Semester
- Ag Ec 201 [S] or Econ 101 [S] (GER) 3
- Biol 104 [B] or Bot 120 [B] (GER) 4
- GenEd 110 [A] (GER) 3
- Intercultural [L,G,K] (GER) 3
- Math 107 4
- NATRS 101 1

Sophomore Year
First Semester
- Degree Program Course 3
- NATRS 204 2
- NATRS 280 4
- NATRS 300 4
- NATRS 301 3

SECOND SEMESTER
- Arts & Humanities [H,G] (GER) 3
- NATRS 302 [M] 3
- NATRS 312 2
- NATRS 313 2
- NATRS 374 or SoilS 474 3
- SoilS 201 3

1 For the Business Management option, take Econ 101.
2 For the Business Management option, choose from Acctg 230, B Law 210, Dec S 215, Dec S 340.
3 To be taken only by forestry wildlife students during this semester.

BUSINESS MANAGEMENT OPTION
(121 HOURS)

Junior Year
First Semester
- Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER) 3
- NATRS 305 3
- NATRS 311 3
- NATRS 351 3
- Complete Writing Portfolio

Second Semester
- Arts & Humanities [H,G] (GER) 3
- NATRS 410 or 420 (both required) 3 or 2
- NATRS 438 [M] 3
- Required Business Elective 3 or 2
- Restricted Math Elective 3 or 4

Senior Year
First Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- NATRS 403 3
- NATRS 418 2
- NATRS 440 or ES/RP 486 3 or 4
- Required Business 3 or 4
- Tier III Capstone (GER) 3

FORESTRY MANAGEMENT OPTION
(129 HOURS)

Junior Year
First Semester
- Arts & Humanities [H,G] (GER) 3
- Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER) 3
- NATRS 331 or 348 and 349 2 2
- Required Business 1 3 or 4
- Tier III Capstone (GER) 3

Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- Eng 201 [W], H D 205 [C], or ComSt 102 [C] (GER) 3
- NATRS 331 or 348 and 349 2 2
- Required Business 1 3 or 4
- Tier III Capstone (GER) 3

FOREGON MANAGEMENT OPTION
(129 HOURS)
WILDLIFE HABITAT OPTION  
(126 HOURS)  ☑ FYDA

Junior Year
First Semester  Hours
Engl 201 [W], H D 205 [C], or
ComSt 102 [C] (GER) 3
Chem 101 [P] or 105 [P] (GER) 4
Math 107 3
NATRS 305 3
NATRS 311 3
NATRS 351 3
NATRS 357 3
NATRS 357 or 430 (both required) 3
NATRS 450 4
Complete Writing Portfolio

Second Semester  Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
NATRS 410 or 420 (both required) 2 or 3
NATRS 438 [M] 3
NATRS 440 or ES/RP 486 3 or 4
Restricted Math Elective 3 or 4

Senior Year
First Semester  Hours
NATRS 357 or 430 (both required) 3
NATRS 403 3
NATRS 418 2
NATRS 435 4

Second Semester  Hours
Arts & Humanities [H,G] (GER) 3
NATRS 410 or 420 (both required) 2 or 3
NATRS 414 [M] 3
NATRS 436 4
Tier III Capstone (GER) 3

WILDFLYE HABITAT OPTION  
(126 HOURS)  ☑ FYDA

Freshman Year
First Semester  Hours
Ag Ec 201 [S] or Econ 101 [S] (GER) 3
Biol 103 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3

Second Semester  Hours
Biol 104 [B] or Bot 120 [B] (GER) 4
Chem 102 [P] or 106 [P] (GER) 4
GenEd 110 [A] (GER) 3
Math 107 4
NATRS 101 1

Sophomore Year
First Semester  Hours
NATRS 204 2
NATRS 280 4
NATRS 300 4
NATRS 301 3
SoilS 201 3

Second Semester  Hours
GenEd 111 [A] (GER) 3
Engl 201 [W], H D 205 [C], or
ComSt 102 [C] 3
NATRS 302 [M] 3
NATRS 312 2
NATRS 374 3

Junior Year
First Semester  Hours
Degree Program Course 3
NATRS 311 3
NATRS 351 3
NATRS 357 or 430 (both required) 3
SoilS 451 [M] 3
Complete Writing Portfolio

Second Semester  Hours
Degree Program Course 3
Intercultural [L,G,K] (GER) 3
NATRS 414 [M] 3
NATRS 438 [M] 3
NATRS 452 or 453 (both required) 3

Senior Year
First Semester  Hours
Arts & Humanities [H,G] (GER) 3
Degree Program Course 3
NATRS 357 or 430 (both required) 3
NATRS 403 3
Tier III Capstone (GER) 3

Second Semester  Hours
Degree Program Course 3
Intercultural [L,G,K] (GER) 3
NATRS 414 [M] 3
NATRS 438 [M] 3
NATRS 452 or 453 (both required) 3
NATRS 460 3

RANGE MANAGEMENT MAJOR  
(122 HOURS)  ☑ FYDA

The Range Management major provides students with an understanding of the characteristics, resource values and function of rangeland ecosystems that provide food/habitat to wild and domestic herbivores plus a host of other environmental and socioeconomic benefits to society. Students are prepared to apply such understanding through a variety of professional careers in rangeland science and/or management. This major is fully accredited by the Society for Range Management.

In addition to university GER’s, basic science courses and the natural resource common core, students in this major complete the range management core curriculum with courses in range management principles, measurements/remote sensing, soil science, watershed management, livestock management, and improvements in rangeland ecosystems. In addition, students are provided the opportunity to attain either greater breadth or more specialization in specific facets of range management through the Directed Studies option. In this option, students with their advisors select courses focusing upon particular aspects of rangeland ecology and/or management that correspond to their particular interests and educational/career goals.

Freshman Year
First Semester  Hours
Ag Ec 201 [S] or Econ 101 [S] (GER) 3
Biol 103 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3

Second Semester  Hours
Arts & Humanities [H,G] or Social Science [S,K] (GER) 3
Degree Program Course 3
NATRS 453 or 452 (both required) 3
NATRS 460 3

WILDLIFE ECOLOGY MAJOR  
(120 HOURS)  ☑ FYDA

The wildlife ecology major provides students with a basic background in the sciences plus additional courses emphasizing the management and scientific aspects of wildlife ecology. Students are therefore prepared to pursue a variety of careers focusing upon either/bot wildlife biology or wildlife management. The core requirements plus proper selection of approved wildlife electives allow majors to meet the U.S. Office of Personnel Management requirements for wildlife biologist, wildlife refuge manager, general biologist, and zoologist. Through judicious use of electives a student can also meet additional civil service requirements for fish biologist and range conservationist. Wildlife students can individualize and often enhance their professional development by minorizing in other subject such as communications, computer science, and other natural resource fields (forestry, range or wildland recreation). Students with a primary interest in Veterinary Sciences and wildlife may jointly pursue their interests via the Pre-Vet School option.

In addition to university GER’s, basic science courses and the natural resource common core, students in this major complete a core of wildlife classes embracing wildlife ecology, management, nutrition, population ecology, and conservation biology. Opportunities for specialization and pursuit of individual student interests beyond the wildlife core are provided through completing either the Pre-Vet School option, or a Directed Studies option wherein students may select approved electives in the areas of habitat ecology, aquatic ecology, animal ecology and conservation biology.

Freshman Year
First Semester  Hours
Biol 103 [B] (GER) 4
Chem 101 [P] or 105 [P] (GER) 4
Engl 101 [W] (GER) 3
Math 107 3
NATRS 100 1

Second Semester  Hours
Biol 104 [B] (GER) 4
Chem 102 [P] or 106 [P] (GER) 4
GenEd 110 [A] (GER) 3
Engl 201 [W], H D 205 [C], or
ComSt 102 [C] 3
NATRS 101 1

Sophomore Year
First Semester  Hours
Ag Ec 201 [S] or Econ 101 [S] (GER) 3
NATRS 204 2
NATRS 280 4
NATRS 300 4
NATRS 301 3
SoilS 201 3

Second Semester  Hours
GenEd 111 [A] (GER) 3
Engl 201 [W], H D 205 [C], or
ComSt 102 [C] 3
NATRS 101 1

Junior Year
First Semester  Hours
Animal Systematics or Option Courses 6-8
Arts & Humanities [H,G] or Social Science [S,K] (GER) 3
NATRS 311 3
NATRS 438 [M] 3
Complete Writing Portfolio

Second Semester  Hours
Animal Systematics or Option Courses 8-12
Arts & Humanities [H,G] (GER) 3
NATRS 438 [M] 3

Senior Year
First Semester  Hours
Animal Systematics or Option Courses 4-8
NATRS 403 3
NATRS 435 4
Stat 412 3

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WILDLAND RECREATION MANAGEMENT MAJOR

Wildland recreation management focuses upon recognizing, providing and perpetuating and improving recreational opportunities and values associated with natural environments. The Wildland Recreation curriculum is designed to impart understanding both of natural resources and of resource-based recreation principles/applications, and prepare students for careers in back-country/dispersed or front-country/concentrated recreation management with local/state/federal parks agencies or in the private sector.

In addition to university GER’s, the basic science courses and the natural resource common core, students in this major complete the wildland recreation core courses such as soils/geology, recreation management principles and natural resource interpretation. Each student selects and completes an option in management or interpretation; or completes a minor in another related discipline such as business, environmental science, forestry, wildlife, criminal justice, or anthropology. To provide an opportunity for in-depth study and analysis, each student completes a senior thesis in a subject area that corresponds to his/her professional interest.

Freshman Year

First Semester
- Biol 103 [B] (GER) 4
- Chem 101 [P] or 105 [P] (GER) 4
- Engl 101 [W] (GER) 3
- Math 107 3
- NATRS 100 1

Second Semester
- Biol 104 [B] or Bot 120 [B] (GER) 4
- GenEd 110 [A] (GER) 3
- GenEd 111 [A] (GER) 3
- Stat 212 [N] (GER) 4

Sophomore Year

First Semester
- Ag Ec 201 [S] or Econ 101 [S] (GER) 3
- Engl 201 [W], H D 205 [C], or ComSt 102 [C] (GER) 3
- NATRS 204 2
- NATRS 300 4
- NATRS 301 3

Second Semester
- GenEd 111 [A] (GER) 3
- Intercultural [I,G,K] (GER) 3
- NATRS 302 [M] 4
- NATRS 312 2
- NATRS 371 3
- Option Courses 3

Junior Year

First Semester
- Arts & Humanities [H,G] (GER) 3
- NATRS 403 3
- Option Courses 6

Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- NATRS 471 or 472 [M] (both required) 3
- NATRS 487 [M] 3
- Tier III Capstone (GER) 3
- Option Courses 3

Senior Year

First Semester
- NA TRS 280 4
- NA TRS 311 3
- NA TRS 372 1
- NA TRS 373 3
- SoilS 201 3
- Complete Writing Portfolio

Second Semester
- NA TRS 438 [M] 3
- NA TRS 471 or 472 [M] (both required) 3
- Option Courses 9

NATURAL RESOURCE MAJOR (120 HOURS) ✔FYDA

The Natural Resource major is offered for students interested in biological, physical or socioeconomic aspects of natural sciences that extend beyond traditional disciplinary boundaries or which represent areas of specialization not encompassed by our other majors. This is also the most flexible of our majors, and hence offers exceptional opportunities for tailoring (in consultation with academic advisors) courses/curricula to match individual student interests and needs within the realm of natural resource sciences.

In addition to university GER’s, basic science courses and the natural resource common core, students will complete a major core composed of a limited number of courses in the areas of soil science, conservation biology, ecology and social sciences. To provide an opportunity for in-depth study and analysis, each student will be required to complete a senior thesis, typically on a subject that corresponds to his/her area of primary interest. Based upon area of primary interest and in addition to the major core and senior thesis, each student also will complete one of nine available options composed of approved elective courses. Eight options are designed to provide specialization in specific areas of natural resource sciences, and include Natural Resource Policy, Natural Resource Social Science, Wetland/Aquatic Resources, Plant Resources (applied ecology or ecosystem), Landscape Ecology, Fire Science/Management, Urban Ecology/Resource Management, and (available at WSU-Vancouver only) Environmental Horticulture. Lists of approved electives for each option are available from the Department.

Sophomore Year

First Semester
- Biol 103 [B] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- NATRS 100 1
- Stat 212 [N] (GER) 4

Second Semester
- Biol 104 [B] or Bot 120 [B] (GER) 4
- GenEd 111 [A] (GER) 3
- Stat 212 [N] (GER) 4
- Math 107 4
- NATRS 101 1

Freshman Year

First Semester
- Biol 103 [B] (GER) 4
- Engl 101 [W] (GER) 3
- GenEd 110 [A] (GER) 3
- NATRS 100 1
- Stat 212 [N] (GER) 4

Second Semester
- Biol 104 [B] or Bot 120 [B] (GER) 4
- GenEd 111 [A] (GER) 3
- Stat 212 [N] (GER) 4
- Math 107 4
- NATRS 101 1

Junior Year

First Semester
- Basic/Applied Ecology Electives 3 or 4
- NATRS 280 4
- NATRS 301 3
- NATRS 311 3
- NRS Option and Free Electives 3
- Complete Writing Portfolio

Second Semester
- Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
- NATRS 302 [M] 3
- NATRS 438 [M] 3
- NRS Option and Free Electives 3
- Complete Writing Portfolio

Senior Year

First Semester
- NATRS 403 3
- NATRS 450 [M] 3
- SoilS 201 3
- NRS Option and Free Electives 3

Second Semester
- NATRS 488 [M] 3 or 4
- NRS Option and Free Electives 3
- Tier III Capstone (GER) 3

1 Must be approved by department, to total 15-23 credits in a required option in one of the following areas:
- General Studies, Directed Studies, Natural Resource Policy, Natural Resource Social Science, Wetland/Aquatic Resources, Landscape Ecology, Fire Science/Management, Plant Resources, or (at Vancouver only) Environmental Horticulture. Lists of approved electives for each option, which must include at least 9 credits of 300-400-level courses are available from the department.

2 Must be approved by department.

Transfer Students

Transfer students should plan to complete the basic required courses in English composition, chemistry, speech, biological sciences, mathematics, microeco-
nomics, 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

Graduate programs provide students not only with an increased knowledge of the scientific basis of their profession but also with a more complete understanding of the holistic nature of successful natural resource management and science. The Department offers the M.S. in Natural Resource Sciences (thesis-based). M.S. in Natural Resource Sciences (non-thesis). The department in conjunction with the Environmental Science and Regional Planning program offers a Ph.D. in Environmental and Natural Resource Sciences. Under the broad rubric of each graduate degree, students may specialize in a variety of biological, physical or social science aspects of natural resources by virtue of either/both advanced coursework or graduate research. Graduate curricular requirements are flexible; hence, students with preceding education in both natural resource and related fields are encouraged to apply. To be accepted to graduate study in Natural Resource Sciences, applicants must (1) meet the Graduate School’s minimum admission requirements, (2) complete the Department’s supplemental application form, (3) have three letters of reference and GRE scores submitted to the Department, and (4) have at least one member of the Department’s faculty willing to serve as the student’s major advisor. Students interested in graduate study in Natural Resource Sciences should consult the WSU Graduate Bulletin and directly contact the Department for further information on opportunities and requirements.

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, 420, 430, 460.

Range: minimum of 18 credit hours. Required courses: NATRS 301, 302, 351, SoilIS 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 selected from NATRS 340, 406, 429, 431, 436, 450, 460, 480; no more than one from Zool 423, 428, 430.

Natural Resources: minimum of 16 credit hours of courses approved by department. For non-NATRS majors only. Required courses: at least 9 credit hours of NATRS courses, as least 9 credit hours of courses numbered 300 or higher, and at least one course in each of the following areas (three courses total); individual courses may be used to satisfy only one area: 1) Basic Principles of Natural Resource Sciences/Management: Recommended Electives: NATRS 100, 101, 303; others upon departmental approval; 2) Socioeconomic Aspects of Natural Resource Sciences/Management: Recommended Electives: NATRS 303, 311, 312, 403, 419, 438; others upon departmental approval; 3) Ecological Aspects of Natural Resource Sciences/Management: Recommended Electives: NATRS 280, 301, 302, 303, 351, 371, 403, 419, 450, 460; others upon departmental approval.

Description of Courses

Natural Resource Sciences

NATRS

100 Introduction to Natural Resource Management I 1 Nature and significance of natural resources; types of renewable natural resource systems; goals and principles of natural resource management.

101 Introduction to Natural Resource Management II 1 Professional fields of natural resource management. Field trip required.

204 Introduction to Measurements and Computers in Natural Resources 2 (1-3) Prereq Math 107, sophomore standing. Introduction to basic concepts, field techniques and the use of spreadsheet software in natural resources. Field trips required.

275 Leisure in Society 3 Same as RLS 275.

280 Introductory Wildlife Management 4 (3-3) Prereq Biol 104 or Bot 120. An introductory course in the principles of wildlife management. Field trip required.

300 Natural Resource Ecology 4 (3-3) Prereq Biol 103; Biol 104 or Bot 120. Ecology as applied to management of natural resource ecosystems; biological diversity, conservation biology, global climate change in natural resource ecology. Field trips required.

301 Forest and Range Plant Resources I 3 (2-3) Prereq Biol 104 or Bot 120. Identification and ecology of important forest and range plants with emphasis on woody plants; attributes significant to vegetation management. Field trips required.

302 [M] Forest and Range Plant Resources II 3 (2-3) Prereq NATRS 301. Identification and ecology of important forest and range plants with emphasis on herbaceous plants; attributes significant to vegetation management. Field trips required.

303 [B] Conservation of Renewable Resources 3 (2-3) Prereq completion of Tier I science requirement. A series of case studies of international natural resource conservation issues that emphasize ecological concepts and human decision making. Cooperative course taught by WSU, open to UI students (For 306).

304 Forest and Range Biology 3 Prereq Biol 372 or NATRS 300; NATRS 302 or c/l. Structure and functions of forest and range plants; influence of biotic and environmental factors on plant and stand growth.

305 Silviculture 3 Prereq NATRS 204, 300, 302. Stand dynamics, natural regeneration methods, intermediate stand treatment, relationships of natural resource management to silvicultural practice. Field trips required.

311 Natural Resource Economics 3 Same as Ag Ec 311.
3. Natural Resource Planning 3 (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.

4. Forest Populations 1 Prereq enrollment in CEFES Program. Concepts of genetics, population dynamics and pest management applied to forest management.

5. 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.

6. 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.

7. 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.

8. 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).

9. Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

10. Forest Growth and Yield 2 Prereq Dec S 215, Stat 212, or 412. Factors influencing forest yields, traditional prediction methods; development and application of growth and yield simulators. Credit not granted for both NATRS 412 and 512.

11. Topics in Natural Resource Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. Topical issues in natural resource sciences.

12. Wood and Wood Products 2 Prereq NATRS 204. Wood science and its role in the manufacture and marketing of forest products.

13. 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.

14. Wood and Wood Products 2 Prereq NATRS 204. Wood science and its role in the manufacture and marketing of forest products.

15. Aquaculture and Fish Health 4 (3-3) Prereq MMBB 250, Fish 411. Concepts and methods of extensive and intensive aquaculture; emphasis on epidemiology, diagnosis, and prevention of infectious and non-infectious diseases of fish. Cooperative course taught by UI (Fish 419), open to WSU students.

16. Introduction to Wildland Fire 3 Prereq NATRS 300. Physical nature and behavior of wildland fire; the fire environment; fire ecology; practice of wildland fire management. Field trip required.

17. Wildlife Nutrition 3 (2-3) Nutritional requirements and interactions of wildlife populations. Credit not granted for both NATRS 431 and 531. Cooperative course taught by WSU, open to UI students (WLF 431).

18. Low-volume Forest Roads 3 Prereq NATRS 320. Road classification; design of forest roads; construction techniques; costing, environmental considerations, design project. Three days of field trips. Cooperative course taught by UI (ForP 432), open to WSU students.

19. Forest Tractor System Analysis 3 Prereq NATRS 320. Planning, layout, and cost analysis of forest tractor systems, production estimating, machine capabilities, and options; layout project. Three days of field trips. Cooperative course taught by UI (ForP 433), open to WSU students.

20. Cable Systems Analysis 3 Prereq NATRS 320. Layout, planning, and design for cable logging systems; analysis of forces involved in cable logging; crew and terrain requirements; layout and design project; cost and equipment analysis. Three one-day field trips. Cooperative course taught by UI (ForP 434), open to WSU students.


23. 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.

24. Natural Resource Policy and Administration 3 (2-2) Prereq Eng 402, NATRS 312, junior standing. Development, content, and implementation of federal public land and natural resource policy; emphasis on forest, range, wildlife, and wildland recreation. Credit not granted for both NATRS 438 and 538.

25. Production and Cost Control in Forest Industry 3 Prereq NATRS 420. Introduction to production planning and cost control for timber harvesting and forest products processing operations; development and application of machine rates and system production rates; break-even analysis; machine replacement; cash flow in investment decisions; use of microcomputers in analysis. Cooperative course taught by UI (ForP 431), open to WSU students.

26. Integrated Forest Management Models 3 (2-3) Prereq NATRS 313; 410 or 510. Mathematical programming techniques for decisions in forest planning; coordinate site projects, area analysis, strategic forest plans, and regional forest resource policies. Credit not granted for both NATRS 440 and 540. Cooperative course taught by UI (For 477), open to WSU students.

27. Population Ecology and Conservation 4 (3-3) Prereq Biol 104, NATRS 300 or Biol 372. NATRS 280, 435, or by permission only. Course focusing on ecology, conservation, management of vertebrate populations, especially threatened and endangered species; designed for wildlife and conservation biology majors.


29. 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).

30. Range Development and Improvements 3 (2-3) Prereq NATRS 351. Developing and improving rangeland forage resources; ecological considerations, plant control, seeding, fertilization, fire, facilitating animal use. Field trips required. Credit not granted for both NATRS 452 and 552.

31. Range Livestock Management 3 Rec NATRS 351. Range livestock management, nutrition and behavior; plant responses to grazing; grazing systems; stocking variables. Field trip required. Credit not granted for both NATRS 453 and 553.

32. Rangeland Ecology 3 Prereq NATRS 302. Application of ecological principles in rangeland management; stressing response and behavior of range ecosystems to various kinds and intensities of disturbance and management practice. Field trips required. Cooperative course taught by UI (Rage 459), open to WSU students.

33. Watershed Management 3 Prereq NATRS 204, completion of department requirement in Biol, Chem, and Ph S, Math and Stat; or by interview only. Principles and practices of management of forest and rangelands for protection, maintenance, and improvement of water resource values. Field trip required. Credit not granted for both NATRS 472 and 572.

34. Management of Aquatic Ecosystems 3 (2-3) Prereq Biol 102 or Bot 120; Chem 101. Introduction to the science and management of aquatic ecosystems, emphasizing lakes.

35. Wildland Recreation Management 3 (2-3) Prereq NATRS 371. Planning and management techniques applied to wildland recreation problems and situations. Field trips required. Credit not granted for both NATRS 471 and 571.


37. Interpretive Methods Lab 3 Prereq NATRS 373. Development and application of interpretive materials and techniques; concentration on equipment and methods commonly used by natural resource agencies for communicating management programs and interpreting natural environments to visitors. Field trip required. Cooperative course taught by UI (RRT 488), open to WSU students.


39. Management of Recreation Sites and Leisure Settings 2 Introduction to theory, processes, and techniques for managing natural resource-based recreation and tourism sites; emphasis on site impacts and their management, visitor/customer management, liability and risk management, and the proper care of landscape trees and other amenity resources. Field trips required. Cooperative course taught by UI (RRT 484), open to WSU students.

40. Field Environmental Education 3 Concept and techniques of environmental education with emphasis on application at camps, parks, and similar recreation and tourism informal settings. Field trips required. Cooperative course taught by UI (RRT 487), open to WSU students.
Natural Resource Management Internship V 2-12 An elective opportunity for select students to supplement their academic training with practical field experience.

Big Game Range Management 3 Prereq NTRS 301. Big game habitat management on rangelands and forested ranges; big game habitat rehabilitation; field trips required. Credit not granted for both NTRS 480 and 580.

Aquatic Ecosystem Assessment Methods for Environmental and Natural Resource Sciences 3 (1-6) Prereq NTRS 460, Zool 310, 411. Integrating structural and geomorphic analyses, biologic indicators, water quality, and community-level indices into assessments of ecosystem health and biotic integrity.


[M] Senior Thesis in Natural Resources V 3-6 May be repeated for credit; cumulative maximum 6 hours. Prereq senior in NTRS.

Wildlife Sciences Internship V 2-6 May be repeated for credit; cumulative maximum 12 hours. A cooperative internship with wildlife agencies.

Integrated Field Studies 2 (1-3) Prereq NTRS 204, 302, 374, junior standing. Two-week field course at the end of spring semester to emphasize interdisciplinary studies of natural resource management.

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

Forest Resource Planning 3 (2-3) Graduate-level counterpart of NTRS 403; additional requirements. Credit not granted for both NTRS 403 and 503.

Agroforestry Systems 2 Prereq NTRS 304. Agroforestry systems used in the world including their current use in developing countries. Cooperative course taught by UI (Rnge 558), open to WSU students.

Forest Finance and Valuation 3 Graduate-level counterpart of NTRS 410; additional requirements. Credit not granted for both NTRS 410 and 510.

Integrated Forest Resource Economics 2 Microeconomic theory of forest resource production and supply; valuing non-commodity and intangible forest resources; optimizing jointly produced resources; hierarchical decision analysis, case studies and policy evaluation. Cooperative course taught by UI (For 581), open to WSU students.

Forest Nursery Management 2 Graduate-level counterpart of NTRS 413; additional requirements. Credit not granted for both NTRS 413 and 513. Cooperative course taught by UI (For 513), open to WSU students.

Advanced Forest Mensuration 1 Prereq enrollment in CEFES program. Evaluation of forest growth and yield in forest ecosystem management.

Forest Growth and Yield 2 Graduate-level counterpart of NTRS 418; additional requirements. Credit not granted for both NTRS 418 and 518.

Advanced Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

Human Dimensions of Wildlife Management 2 Prereq NTRS 435. An exploration of the elements involved in the management of wildlife for non-consumptive activities, the impacts of such activities on wildlife, the role of national parks and protected areas in providing wildlife viewing opportunities, and public attitudes toward wildlife species. Cooperative course taught by UI (WLF 520), open to WSU students.

Tropical Dendrology and Ecology 3 (2-3) Graduate-level counterpart of NTRS 422; additional requirements. Credit not granted for both NTRS 422 and 522. Cooperative course taught by UI (For 520), open to WSU students.

Plant Antecology 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 sensitivity. Field trips required. Cooperative course taught by UI (Rnge 560), open to WSU students.

Experimental Plant Ecology 3 (1-6) Experimental techniques in plant ecology with orientation toward environmental and physiological measurement in field and laboratory research. Cooperative course taught by WSU, open to UI students (Rnge 525).


Forest Gene Resource Management 3 Prereq forest graduate standing. Genetic principles applied to forest ecosystems management; origin and function of genetic diversity; implications of silvicultural practices on gene pools. Field trips required. Cooperative course taught by UI (For 528), open to WSU students.

Principles of Population Dynamics 1 Prereq general ecology. Development of the theory of population dynamics from Mathus to the present.

Wildlife Nutrition 3 (2-3) Graduate-level counterpart of NTRS 431; additional requirements. Credit not granted for both NTRS 431 and 531. Cooperative course taught by WSU, open to UI students (WLF 531).

Wildlife Ecology 4 (3-3) Graduate-level counterpart of NTRS 435; additional requirements. Credit not granted for both NTRS 435 and 535.

Advanced Wildlife Management 4 (3-3) Graduate-level counterpart of NTRS 436; additional requirements. Credit not granted for both NTRS 436 and 536.

Wildland Fire Management Laboratory 1-3 (0-3) Graduate-level counterpart of NTRS 437; additional requirements. Credit not granted for both NTRS 437 and 537.

Natural Resource Policy and Administration 3 (2-2) Graduate-level counterpart of NTRS 438; additional requirements. Credit not granted for both NTRS 438 and 538.

Integrated Forest Management Models 3 (2-3) Graduate-level counterpart of NTRS 440; additional requirements. Credit not granted for both NTRS 440 and 540.

Population Ecology and Conservation 4 (3-3) Prereq graduate standing. Graduate-level counterpart of NTRS 441; additional requirements. Credit not granted for both NTRS 441 and 541.

Dispersal Recession Management 3 (2-3) Graduate-level counterpart of NTRS 472; additional requirements. Credit not granted for both NTRS 472 and 572.

Dispersal Recreation Management 3 (2-3) Graduate-level counterpart of NTRS 472; additional requirements. Credit not granted for both NTRS 472 and 572.

Recreation Ecology 1-3 Prereq NTRS 452; additional requirements. Credit not granted for both NTRS 452 and 552.

Range Development and Improvements 3 Graduate-level counterpart of NTRS 453; additional requirements. Credit not granted for both NTRS 453 and 553.

Restoration Ecology 2 Prereq NTRS 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.

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 554).

Foraging Ecology of Herbivores 3 Prereq graduate standing on permission. Synthesis of foraging behavior concepts including nutritive quality of forages, digestive and metabolic constraints, and diet and habitat selection. Cooperative course taught jointly by WSU and UI (Range 556).

Wildland Recreation Management 3 (2-3) Graduate-level counterpart of NTRS 471; additional requirements. Credit not granted for both NTRS 471 and 571.

Watershed Management 3 Graduate-level counterpart of NTRS 460; additional requirements. Credit not granted for both NTRS 460 and 560.

Wildland Recreation Management 3 Graduate-level counterpart of NTRS 471; additional requirements. Credit not granted for both NTRS 471 and 571.

Dispersal Recreation Management 3 Graduate-level counterpart of NTRS 472; additional requirements. Credit not granted for both NTRS 472 and 572.
Program students may be nominated by the Professor of Naval Science at the beginning of their junior year. College Program students may enter up to the beginning of their freshman year; however, selected candidates in the two-year program will participate in one afloat cruise between their junior and senior years. The top graduates are awarded scholarships for their last two years of college. On completion of the NSI, candidates return to the university and complete their freshman and sophomore years. On completion of the academic year, students take 20 hours of professional courses taught jointly by WSU and UI (RRT 594).

Naval Science Program

Professor of Naval Science; Captain Sowa, Cdr Jaszkowski, Lt Farrens, Lt Kowal.

The Navy-Marine Corps Officer Education Program, administered and taught by the NROTC staff at the University of Idaho, is open to men and women and offers scholarships leading to reserve commissions in the Navy and Marine Corps and active duty as Navy or Marine Corps officers. Normally, students enter the program at the beginning of their freshman year; however, selected students may enter up to the beginning of their junior year. Students take 20 hours of professional courses taught by the Navy and Marine Corps staff of the NROTC unit. In addition to the professional courses, students enrolled in the NROTC Program must also participate in Naval Science Drill (NS 100) each semester. Following graduation, the newly commissioned officer is offered a broad variety of duty assignments including duty on nuclear submarines and surface ships, in naval aviation, and ground or aviation assignments in the Marine Corps. All commissioned officers 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 $200 per month at the beginning of their junior year. College Program students may be nominated by the Professor of Naval Science for a two- or three-year scholarship as freshmen, sophomores, or first-semester juniors, if 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 $200 a month stipend. Application for this program is normally made during the early fall of the student’s senior year of high school. Initial selections are based on college entrance examination scores (SAT or ACT) and high school academic performance. A student on scholarship participates in three summer training cruises of four to six weeks duration. During the first cruise, students are introduced to the submarine, amphibious warfare (Marine Week), surface warfare, and aviation communities. The second and third cruises are aboard ships of the Pacific or Atlantic fleets and often include travel to Europe or the Far East.

During summer cruises, the students receive one-half the pay of an ensign, in addition to room and board. Graduates of this program are commissioned as reserve officers in the Navy or Marine Corps.

Scholarship Program

Naval Science Program

Naval 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

Naval-Marine Corps Scholarship and College Program applicants entering the program after completion of their sophomore year will be required to attend the Naval Science Institute (NSI) during the summer between their sophomore and junior years. At the NSI they will study the material taken by the four-year candidates during their freshman and sophomore years. On completion of the NSI, candidates return to the university and complete their junior and senior years of the naval science curriculum with their peers. Candidates in the two-year program will participate in one 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 for completion of the BS in Nursing. Application for this program can be made during the freshman year. For more information concerning this program, please see the Intercollegiate Program in Nursing.

Field Trips

Field trips to Navy and Marine Corps facilities are arranged periodically in order to allow the Navy-Marine Corps Officer Education Program participants the opportunity to learn more about the naval service.

Description of Courses

Naval Science

100 Drill Lab No credit. Required of all Navy-Marine Corps Officer Education Program students. One hour 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 damage control and propulsion systems of naval ships; nuclear and conventional power. Cooperative course taught by UI (NS 102), open to WSU students.

201 Ships Systems II 3 Naval weapons: ballistics, control, propulsion, components, systems analysis. Cooperative course taught by UI (NS 201), open to WSU students.

202 Seapower and Maritime Affairs 2 U.S. Navy and merchant marine seapower, development, and policy. Cooperative course taught by UI (NS 202), open to WSU students.

299 Directed Study 1-3 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.

418 Amphibious Operations 3 Rec N S 311. Amphibious doctrine from Gallipoli to Mayaguez. Cooperative course taught by UI (NS 412), open to WSU students.

419 Team Building 2 By interview only. Practical application of leadership and management techniques through athletics. Cooperative course taught by UI (NS 499), open to WSU students.

Basic Leadership 1 By interview only. Practical application of leadership and management techniques through athletics. Cooperative course taught by UI (NS 499), open to WSU students.
Students should refer to suggested courses below.

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 Neuroscience

**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

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

At least 40 of the total hours required for the bachelor’s degree 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**

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
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</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
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<tr>
<td>GenEd 110 [A] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 104 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
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<tr>
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</tr>
<tr>
<td>Math 140 [N] or 171 [N] (GER)</td>
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**Sophomore Year**

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<tbody>
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<tr>
<td>ComSt 102 [C] (GER)</td>
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<td>Neuro 301</td>
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<tr>
<td>Phys 101 [P] (GER)</td>
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<td>Psych 105 [S] (GER)</td>
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<table>
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<tr>
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<tr>
<td>Phys 102 [P] (GER)</td>
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**Junior Year**

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<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Psych 311</td>
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<tr>
<td>Electives (consult advisor)</td>
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<tr>
<td>Complete Writing Portfolio</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>Neuro 403</td>
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<tr>
<td>Neuro 405 [M]</td>
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<td>Psych 312</td>
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<td>Electives (consult advisor)</td>
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**Senior Year**

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<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
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<tr>
<td>Neuro 430 [M]</td>
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<tr>
<td>Neuro Electives and/or Neuro 495, 499</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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<table>
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<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>Neuro 404</td>
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<tr>
<td>Neuro Electives and/or Neuro 495, 499</td>
<td>3-6</td>
</tr>
<tr>
<td>Other Electives</td>
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1 Math 202 or 206 may substitute.
2 Organic 340, 341, 342 (year-long sequence) can replace this course.
3 Or equivalent Stat course.

**COMPUTATIONAL NEUROSCIENCE (133 HOURS)**

**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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<td>Math 171 [N] (GER)</td>
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<td>Psych 105 [S] (GER)</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biol 103 [B] (GER)</td>
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**Sophomore Year**

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<tbody>
<tr>
<td>Chem 240</td>
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<td>Econ 101 [S] or 102 [S] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Math 273</td>
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<tr>
<td>Phys 201 [P] (GER)</td>
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<table>
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<tr>
<td>Cpt S 250</td>
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<tr>
<td>Math 220</td>
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<tr>
<td>Math 315</td>
<td>3</td>
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<tr>
<td>Phys 202 [P] (GER)</td>
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**Junior Year**

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<tbody>
<tr>
<td>BC/BP 364</td>
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<tr>
<td>BSysE 339</td>
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<tr>
<td>E E 214</td>
<td>3</td>
</tr>
<tr>
<td>E E 261/262</td>
<td>4</td>
</tr>
<tr>
<td>Math 360</td>
<td>3</td>
</tr>
<tr>
<td>Neuro 301</td>
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<td>Complete Writing Portfolio</td>
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<table>
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<th>Second Semester</th>
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<tr>
<td>BSysE 310</td>
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<tr>
<td>Cpt S 350</td>
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</tr>
<tr>
<td>E E 340</td>
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<tr>
<td>Zool 353</td>
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**Senior Year**

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<tbody>
<tr>
<td>E E 489</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>Neuro 404</td>
<td>3</td>
</tr>
<tr>
<td>Neuro 430 [M]</td>
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<tr>
<td>Neuro 495</td>
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<td>Elective</td>
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<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BSysE 430</td>
<td>3</td>
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<tr>
<td>Cpt S 434</td>
<td>3</td>
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<tr>
<td>Neuro 403</td>
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<tr>
<td>Neuro 499</td>
<td>1</td>
</tr>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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</tbody>
</table>

1 Satisfies course requirements for entrance into medical school.
2 May be used to satisfy 14 of 17 credits for a minor in computer science; the remaining 3 credits may be electives.
3 May be used to satisfy 13 of 16 credits for a minor in electrical engineering; the remaining 3 credits may be electives.

**MINOR IN NEUROSCIENCE**

A minor in neuroscience requires a minimum of 16 hours in Neuro, at least two of the following four courses: Neuro 403, 404, 405, and 430. The minor must include at least three credits and up to five credits of Neuro 495 or 499. Students minoring in Neuroscience may include 500-level courses in their minor program, provided they obtain the consent of the faculty teaching the course.
prior to registration. Additional courses acceptable for satisfying the minor are Neuro 406, 436, 506, 513, 526, 528, 529, 530, 534, 537, 538, 543, and 579.

TRANSFER STUDENTS
Transfer students must satisfy the program requirements for graduation. Science courses taken at other institutions will be evaluated and credits accepted where possible. Inquiries should be directed to the program coordinator.

PREPARATION FOR GRADUATE STUDY IN NEUROSCIENCE
To be eligible for admission, candidates must meet general Washington State University requirements outlined in the Graduate Study Bulletin in effect at the time of their admission, as well as the current Graduate Neuroscience Program requirements. Applicants for admission to the Graduate Program in Neuroscience must have a minimum grade point average of 3.0 (A=4.0) 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 neuro-science-related topics of societal importance from an integrated neuroanatomical, biochemi-cal, and behavioral perspective.

301 Exploring the Brain 3 Structure and function of the nervous system from single neurons to behav-iors.

403 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, sociosexual behavior, sleep behavior, and learning and memory.

406 [M]Neuroscience Research Techniques 3 (2-3) Prereq Neuro 301, or by interview only. Histor-ical development, theory and technical bases for contemporary laboratory methods in the neuro-sciences.

430 [M] Principles of Neurophysiology 3 Prereq Neuro 301, or by interview only. Advanced explora-tion of the principles underlying cellular, sensory, motor and integrative functions of the nervous system.

436 Fundamentals of Synaptic Organization 3 Descriptions of how different circuits in the brain execute normal and pathological fundamentals.

461 Neurobiology 3 Prereq Phys 101; Biol 201; Chem 240 recommended. Study of the nervous system, with an emphasis on the basic mecha-nisms of neuronal signaling, the function of sens-or systems, and neural development. Coopera-tive course taught by UI (Zool 461), open to WSU students.

464 Integrative Neural-Endocrine Function 3 Maintenance of homeostasis by coordinated neuro-nal and endocrine control.

495 Directed Research V 1-3 (0-3) to 3 (0-9) Prereq Neuro 301. May be repeated for credit. Intro-ductions to neuroscience laboratory research and literature.

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

501 Fundamentals of Graduate Research in the Life Sciences 1 Same as V Ph 501.

506 Generation, Degeneration, Regeneration in the Nervous System 2 Same as Zool 506.

513 Advanced Neuroanatomy 4 Same as V An 513.

520 Functional Neuroscience 4 (3-3) Prereq instruc-tor permission or graduate standing. Func-tional aspects of the brain from cell membrane to higher integrative processes.

521 Mammalian Neuroscience 3 (2-3) Same as V M 521P.

526 Domestic and Exotic Animal Behavior 2 (1-3) Same as V M 526P.

528 Behavioral Mechanisms in Physiology 3 Same as V Ph 528.

529 Cellular and Molecular Neurobiology 4 Same as V Ph 529.

530 General and Comparative Neurophysiology 4 Neural function in vertebrates and invertebrates from the molecular to the behavioral level; empha-sis on electrophysiology. Cooperative course taught by WSU, open to UI students (Zool 530).

531 Neuroscience Laboratory Rotation 1 (0-5) May be repeated for credit; cumulative maxi-mum 2 hours. Same as V Ph 531.

534 Advanced Neurophysiology 3 Same as V Ph 534.

537 Physiology and Biochemistry of Neuropeptides 3 Same as V Ph 537.

538 Neuroendocrinology 3 Same as V Ph 538.

539 Research Topics in Neuroscie 2 May be re-peated for credit; cumulative maximum 6 hours. Concepts and controversies within a specific and highly focused domain of neuroscience. S, F grading.

543 Ion Channels 3 Prereq graduate standing. Ex-amination of structure and function of ion chan-nels from classical descriptions and understandings to modern cellular and molecular insights. Cooperative course taught by WSU, open to UI students (Zool 543).

544 Neurobiology of Drug Abuse 3 Prereq 300-400- level or graduate-level general pharmacology. Impact of drugs of abuse on the central nervous system, with emphasis on neurological mecha-nisms of addiction. Cooperative course taught by WSU, open to UI students (Zool 544).

545 Experimental Design 1 (0-2) May be repeated for credit; cumulative maximum 6 hours. Interpretation of experimental results as the outcome of hypothe-sis testing and specific results to general ex-planatory concepts of neuroscience. S, F grading.

561 Receptoportor 2 Same as PT 561.

564 Brain-Endocrine Interaction 3 Same as V Ph 564.

574 Physiological Psychology 3 Same as Psych 574.

577 Behavioral Pharmacology 3 Same as Psych 577.

579 Behavioral Neuroscience 3 Same as Psych 579.

584 Sensory Bases of Behavior 3 Same as Psych 584.

586 Seminar in Physiological/Sensory Psychology 3 Same as Psych 586.

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

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

800 Doctoral Research, Dissertation, and/or Examination Variable credit. S, F grading.
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-Based/Population-Focused Nursing (last class admitted Jan. 2000), 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. For further information, visit: www.icne.wsu.edu.

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

BACHELOR OF SCIENCE (126 HOURS)
The Bachelor of Science in Nursing degree requires a total of 120 semester hours. All students must meet the General Education Requirements for graduation as described elsewhere in the catalog. The prenursing course requirements are indicated by an asterisk (*) in the schedule of studies listed below.

Fifty-nine semester hours are required in 300-400-level nursing major courses. Additional 300-400-level nursing or non-nursing electives may be required.

A grade of C or better is required in all prerequisite courses and 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

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chem 101 [P] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
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<td>Psych 105 [S] (GER)</td>
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<td>Soc 101 or 102 [S]</td>
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<td>Chem 102 [P] (GER)</td>
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<td>Communication Proficiency [C,W] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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Sophomore Year

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Junior Year

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Senior Year

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Courses Required, Psychiatric/Mental Health Nurse Practitioner

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Courses Required, Acute Care Nurse Practitioner

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Courses Required, Community-Based/Population-Focused Nursing

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Courses Required, Family Nurse Practitioner

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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  **Professional of Nursing**  Theoretical/historical aspects of professional nursing; development of nursing roles, scopes of practice, problem solving, and ethical decision making.

307  **Assertiveness Training for Nurses**  Prereq junior in Nurs. Assertion techniques and conflict management skills in personal and nursing situations; integrating theoretical concepts into practical situations. S, F grading.

308  **Professional Development I: Research and Informatics**  Prereq admission to nursing program or by permission. First of Professional Development series; focus on nursing and health care research, information management, informatics, and development of nursing research.

309  **Professional Development II: Ethical Reasoning and Decision Making Processes in Nursing**  Prereq Nurs 308; c// Nurs 315. Continuation of Professional Development series; moral/ethical reasoning models, decision processes, and philosophical basis of nursing as a discipline explored.

310  **Pharmacological Basis of Nursing Practice**  Prereq major in Nurs or written permission of instructor. Utilization of pharmacological concepts as a basis for critical thinking and decision making in nursing.

311  **Pathophysiology and Pharmacology in Nursing**  Prereq admission to nursing. Etiology, pathogenesis, clinical manifestations of common human dysfunction; nursing implications for prevention and therapeutic approaches including pharmacologic and nonpharmacologic therapies.

312  **Pathophysiological Basis of Nursing Practice**  Prereq major in Nurs or written permission of instructor. Pathophysiologic processes, interrelatedness with physiological defense mechanisms, theories of stress adaptation, age and psychological/behavioral responses.

313  **Mental Health Concepts: Individual and Family**  Prereq major in Nurs or written permission of instructor. Critical analysis of nursing’s use of mental health concepts incorporating the neural basis of behavior, social systems, and culture.

314  **Introduction to Nursing Practice in Health and Illness**  Introduction to nursing concepts and health assessment including core professional values, knowledge, and competencies for nursing practice.

315  **Nursing Practice: Health and Illness**  Prereq Nurs 308, 311, 314. Introduction to nursing practice and health assessment: professional values, core competencies, core knowledge and role development. S, F grading.

318  **Growth and Development Across the Life Span**  Prereq admission to nursing or by permission. Theoretical and conceptual perspectives on human growth and development across the life span.

320  **Nursing Concepts: Foundations**  Prereq Nurs 310, 312, 330, or c//. Nursing concepts foundational to care of well/ill clients: nursing process, nurse/client roles, communication, relationship, basic needs and teaching-learning theories.

321  **Nursing Practice: Foundations**  (0-12) Prereq Nurs 310, 312, 320, 330, or c//. Clinical application of the nursing process; psycho-motor skills and interpersonal relationships in the care of adult clients.

322  **The Human Experience of Diversity and Health**  Prereq admission to nursing or by permission. Explorations of regional, national, and global expressions of health and illness and implications for health care professionals.

324  **Nursing Concepts in Acute and Chronic Illness in the Adult**  Prereq Nurs 311, 314, 315. Theoretical concepts of acute and chronic illness in the adult as a basis for critical thinking and decision-making in nursing.

325  **Nursing Practice in Acute and Chronic Illness in Adults**  (0-15) Prereq Nurs 311, 314, 315; c// Nurs 324. Application of acute/chronic illness concepts in adults as a basis for critical thinking and decision-making in nursing. S, F grading.

328  **Introduction to Gerontological Nursing**  Prereq c// Nurs 318. Professional values, communication, and functional assessment in care of elders; core knowledge and role development of the gerontological nurse.

330  **Nursing Concepts and Practice: Health Assessment**  (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**  Prereq Nurs 310, 312, 320, 330; 313, 342, 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**  (0-9) Prereq Nurs 310, 312, 320, 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**  Prereq Nurs 310, 312, 320, 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**  (0-9) Prereq Nurs 310, 312, 320, 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**  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**  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**  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**  (2-3) Prereq major in Nurs, RN or by interview. Holistic assessment of clients throughout the age continuum. For RNs with a basic knowledge of assessment skills of adult clients.

365  **Nursing Concepts: Assessment and Application of Physiological Concepts to Nursing Practice**  Prereq enrolled in WSU College of Nursing: registered nurse. Integration of pathophysiological, assessment, pharmacological nursing concepts with diverse client populations; emphasizing neurologic, EENT, skin, musculoskeletal, endocrine, and respiratory systems.

366  **Nursing Concepts: Assessment and Application of Physiological Concepts to Nursing Practice**  Prereq enrolled in WSU College of Nursing: registered nurse. Integration of pathophysiological, assessment, pharmacological nursing concepts with diverse client populations; emphasizing fluid/electrolytes, oncology, GI/GU; cardiovascular; immune system, renal.

398  **Special Topics**  V1-3 May be repeated for credit; cumulative maximum 6 hours.

400  **Nursing Research and Informatics**  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**  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**  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**  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**  Prereq enrolled in WSU College of Nursing: registered nurse. Application of group leadership and management theories to professional nursing practice.

406  **Nursing Management**  Prereq enrolled in WSU College of Nursing: registered nurse. Management, leadership, and group theories are utilized and applied to the management of nursing and health care.

408  **Professional Development III: Leadership and Management**  Prereq Nurs 309. Continuation of Professional Development series; focus on impact of leadership, management, and resource allocation on patient outcomes.

409  **Professional Development IV: Transition to Practice**  Prereq Nurs 408. Continuation of Professional Development series; focus on transition to practice and nursing across health care systems/delivery within global arena.
College of Nursing


415 Children and Families as the Focus of Nursing Care 3 (1-6) Prereq Nurs 324, 325; c/f Nurs 318, 328, 324, 414. Synthesis and application of underlying science and nursing process with the unique population of children and families. S, F grading.

416 Childbearing Health of the Family 2 Prereq Nurs 324, 325; c/f Nurs 318, 328. Care of childbearing families within the context of community; newborn health, and men's and women's reproductive health addressed.

417 Nursing Care of Childbearing Families 2 (0-6) Prereq Nurs 324, 325; c/f Nurs 318, 328, 415, 416. Nursing care of families during the childbearing continuum and/or acute care settings; combination of clinical and seminar. S, F grading.

420 Nursing Concepts: Adult 5 Prereq Nurs 342, 343, 344, 345, or c/f. 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, 420, 422, or c/f. Holistic nursing management of adult health/illness problems; demonstration of critical thinking in development of clinical judgement and skill acquisition.

424 Psychiatric/Mental Health Nursing Concepts 3 Prereq Nurs 414, 415, 416, 417. Healthy to psychopathological states studied within a nursing framework; includes history, theories, legal/ethical issues of psychiatric/mental health nursing.

425 Nursing Practice: Psychiatric/Mental Health 2 (0-6) Prereq Nurs 414, 415, 416, 417; c/f Nurs 424. Clinical application of the nursing process with clients experiencing acute and chronic psychiatric/mental health disruptions. S, F grading.

426 Community Health Nursing Theory 2 Prereq Nurs 414, 415, 416, 417. Synthesis of nursing and public health concepts with emphasis on community as the focus of nursing practice.


430 Senior Practicum 3 (0-9) Prereq Nurs 409, 424, 425, 426, 427. Clinical and theoretical concepts are applied in a concentrated clinical practicum; use of clinical preceptors and student objectives is employed. S, F grading.

440 Nursing Concepts: Community Health 2 Prereq Nurs 420; 421, or c/f. 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/f. 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 patients 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/f. 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/f; 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 402 or c/f; Nurs 462 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/f; NLN Mobility Exam (Adult), RN. Application of community/public health nursing and management concepts with emphasis on population-based collaborative practice.

465 Nursing Practice: Community and Psychiatric Mental Health 3 (0-9) Prereq Nurs 462 and 440 or c/f. 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, 461, 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.

478 Plateau Tribes: Culture and Health 3 (2-3) Prereq junior or senior in health care of human services/health professionals. History, culture, and health care needs of the Plateau Indian tribes are addressed; includes both classroom and practicum experience. Credit not granted for both Nurs 478 and 578.

495 Nursing Practice: Advanced Clinical Practicum 2 (0-6) Prereq enrolled in WSU College of Nursing; course must be taken in graduation semester. Application and integration of theoretical content in an area of nursing practice of special interest to the student.

497 Special Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Nurs 320 or by interview.

498 Special Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq Nurs 320 or by interview.

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

504 Methods of Nursing Research 4 Research process as foundational to both conduct of scientific inquiry and utilization of findings.

507 Health Care Policy Analysis 2 Prereq graduate standing in Nurs. Analysis of health care system policy; exploration of issues of clinical management and community resource utilization including advocacy techniques.

513 Innovative Leadership and Management V 3, 4 (3-3), or 5 (3-6) Prereq graduate standing in Nursing; key issues related to management, policy development and the interdisciplinary health care team.

517 Financial Management V 2 (2-0) to 3 (2-3) Prereq graduate student in Nurs. Application of economic theory and principles of financial management to the role of nurse manager.

521 Teaching, Learning and Evaluation in Nursing V 3 (3-0) to 5 (3-6) Prereq graduate standing in Nurs or by permission. Exploration of concepts related to teaching-learning, assessment of diverse learning needs, instructional strategies and design, evaluation of performance outcomes.

523 Nursing Education: Past, Present, and Future V 3 (3-0) to 5 (3-6) Prereq graduate standing in Nurs or by permission. Exploration of curriculum history, development, future predictions; program evaluation, instructional resources, leadership, and policy development in academic and service settings.

524 Multimedia Approaches to Instruction and Evaluation V 2-4 Prereq Nurs 521. Group and individualized instruction and evaluation; creating instructional software, use of TV studio, AV, and computers.

537 Role Analysis: Advanced Practice 2 (1-3) Prereq graduate student in Nurs. Emphasis on role analysis including interdisciplinary relationships, consultant skills, responsibility, activities, and functions of the advanced practice nurse.

541 Psychiatric/Mental Health Nursing: Individuals 4 (3-3) Prereq graduate standing in Nurs. Psychopathology and appropriate nursing interventions with individuals across age continuum; families, groups, and communities.

542 Psychiatric/Mental Health Advanced Practice Role Development 2 Prereq BSN degree. Advanced practice psychiatric/mental health nursing role development emphasizing systems theory and definition of scope and standards of independent and collaborative roles.

543 Advanced Psychiatric Nursing Concepts: Group Psychotherapy 4 (3-3) Prereq Nurs 541, 542, or by interview only. Introduction to theory and practice of group psychotherapy; Milieu and other structured theories are studied and applied to nursing practice.

544 Differential Diagnosis of Medical and Psychiatric Mamiche 2 Prereq Nurs 581, 582, or c/f. Nursing theoretical differential assessment and management principles of physical/psychiatric symptomatology in determining diagnoses and implementing appropriate treatment.

546 Practicum in Psychiatric/Mental Health Nursing 4 (1-9) or 5 (1-12) Prereq Nurs 541, 543. Individualized clinical experience/seminar designed to provide advanced competency, accountability, leadership in psychiatric/mental health nursing.

547 Practice Management for the Psychiatric Nurse Practitioner 2 Prereq last semester of NP program. Evaluation of the role of the psychiatric nurse practitioner across a variety of health care contexts, examining current practice issues.

548 Psychiatric Nurse Practitioner Internship 1-9 Prereq Nurs 546, PharPS255, by interview only. Application and integration of theory, research findings, and interventions in the case of clients with psychiatric disorders.


550 International, Interdisciplinary, and Transcultural Health Care 3 Prereq graduate standing in nursing or by permission. Focuses upon diverse health beliefs and practices or clients and members of the interdisciplinary health care team.
552 Family Nursing in the Community V 2-4
Theoretical approaches to the analysis of normal and at-risk families; application of family assessment and intervention models when planning care.

554 Epidemiological Approaches to Community Health 3 Prereq graduate standing in Nurs. Epidemiologic application to health; implications for health promotion, disease prevention; focus: knowledge and skills required to obtain and use data bases.

556 Community-Based/Population-Focused Role Practicum V 3 (2-3) to 6 (2-12) Prereq permission of instructor. Culminating analysis, development, and enactment of advanced practice roles in teaching, practice, or administration of community-based/population-focused nursing.

557 Care Management with At-Risk Infant and Young Child Populations 3 Prereq graduate standing in nursing or by permission. Analysis of biopsychosocial health risks of infants and young children using model of risk and resiliency in advanced nursing practice.

558 Care Management with At-Risk Older Child and Adolescent Populations 3 Prereq graduate standing in nursing or by permission. Analysis of biopsychosocial health risks of older children and adolescents using models of risk and resiliency in advanced nursing practice.

559 Advanced Nursing Practice with At-Risk Child and Youth Populations Practicum V 2-4 Prereq graduate standing in nursing or by permission; Nurs 557 and 558 or c/l. Application of concepts/models of childhood risk and resiliency in advanced nursing practice with community-based at-risk children and adolescents.

560 Promoting Health of Community-Based Adults V 2 (2-0) to 4 (2-6). Analysis and evaluation of strategies, interventions, and programs to promote the health of at-risk adult community populations.

562 Advanced Health Assessment and Differential Diagnoses 4 (3-3) Prereq graduate standing in Nurs. Advanced holistic health assessment/differential diagnosis; analysis of data from biologic, sociological, psychological, cultural, and spiritual dimensions.

563 Advanced Pharmacological Concepts and Practice 3 (2-3) Prereq graduate standing in Nurs. Pharmacology for clinical practice including decision making, prescribing, drug monitoring, and patient education associated with prescriptive authority.

564 Health Promotion in Nursing Practice 2 or 3 Prereq graduate standing in Nurs. Theoretical bases including cultural variations for selected health promotion strategies for neonates through elderly clients.

565 Information Management for Nursing Practice 3 (2-3) Prereq computer competency in word processing/spreadsheets. Application/evaluation of nursing informatics; use for management of patient care data in nursing practice and administration.

566 Community Analysis and Program Planning V 2 (1-3) to 3 (2-3) Prereq graduate standing in Nurs. Application of core public health functions in community analysis, program development and program evaluation.

567 Primary Care: Adults and Elders 4 (2-9) Prereq Nurs 562, 563, 581, or 582. Assessment, differential diagnosis, therapeutic intervention with adults; developmental changes; opportunities to provide diagnostic, maintenance, and follow-up care.

568 Primary Care: Infants, Children and Adolescents 4 (1-9) Prereq Nurs 562, 563, 581, or 582. Assessment, differential diagnosis, and therapeutic intervention with infants, children, and adolescents in rural and urban settings.

569 Primary Care: Family 4 (1-9) Prereq Nurs 562, 563, 581, or 582. Assessment, differential diagnosis, therapeutic intervention with individuals in childbearing, childrearing, and multigenerational families.

571 Adult and Elders: Inpatient Management of Chronic Problems 6 (3-9) Prereq Nurs 562, 563, 581, c/l in 575, 582. Diagnosis and treatment of inpatient adults and elders with low to medium acuity.

572 Adult and Elders: Inpatient Management of Acute/Critical Problems 6 (3-9) Prereq Nurs 562, 563, 581, c/l 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 linkage between nursing science concepts and nursing practice through analysis of relevant research.

577 Health Care Ethics 2 or 3 Graduate-level counterpart of Nurs 477; additional requirements. Credit not granted for both Nurs 477 and 577.

580 Advanced Physiology and Pathophysiology I 3 (2-3) 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 of research studies regarding nursing care of elderly persons; nursing interventions and health of elderly persons.

584 Acute Care Internship V 1-10 Prereq Nurs 562, 563, 581, 582; Nurs 571 or 572. Application and integration of theoretical content, research findings, and assessment and intervention strategies into acute care practice.

585 Nursing Care of Children in a School Setting 3 (2-3) Prereq graduate standing in Nurs. Assessment of the school age population including high risk students; development, management, and evaluation of school health services.

589 Internship V 1-10 May be repeated for credit; cumulative maximum 10 hours. Prereq Nurs 562, 563, 581, 582; one of Nurs 567, 568, 569, 571, or 572. Application and integration of theoretical content, research findings, and assessment and intervention strategies into primary care practice. S, F grading.

592 Post-Master’s Psychiatric Nurse Internship V 1-9 May be repeated for credit; cumulative maximum 9 hours. Prereq prior completion of course work for a clinical nurse specialist in Psychiatric Mental Health Nursing or Psychiatric Nurse Practitioner, malpractice insurance as an ARNP with prescriptive authority, by interview only. Supervised performance of the ARNP role in psychiatric nursing care for patients presenting primary psychiatric disorders.

594 Nursing Care of Children in a School Setting 3 (2-3) Prereq graduate standing in Nurs. Assessment of the school age population including high risk students; development, management, and evaluation of school health services.

595 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.

597 Advanced Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours.

598 Advanced Topics in Nursing V 1-3 May be repeated for credit; cumulative maximum 6 hours.

599 Independent Study Variable credit. S, F grading.

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

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

Program in 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. Further information may be found at http://av.fshn.wsu.edu.

The PhD program has two options: basic science and behavioral science. All students select one graduate course each in biological nutrition, behavioral nutrition, and research methods. In addition to taking advanced courses in nutrition, all students must select some supporting course work in biochemistry and statistics. 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, GRE scores and TOEFL scores (if applicable), three letters of recommendation attesting to the applicant’s qualifications for graduate study, and a letter of interest stating academic goals. Applications and inquiries should be directed to: Program in Nutrition, Dept. of Food Science and Human Nutrition, WSU, Pullman, WA 99164-6376.
Description of Courses

Nutrition

Nutr 500 Seminar in Nutrition 1 May be repeated for credit; cumulative maximum 5 hours. Seminar on current research issues in nutrition.

505 Experimental Nutrition 3 (1-6) Same as A S 505.

507 Advanced Nutrition and Metabolism 2 Same as A S 507.

508 Seminar-Written 2 Same as FSHN 508.

513 Mineral and Vitamin Metabolism 4 Same as A S 513.

520 Research Methods in Behavioral Nutrition 3 Same as FSHN 520.

521 Research Techniques in Nutrition 3 (1-6) Same as FSHN 521.

526 Advanced Community Nutrition 3 Same as FSHN 526.

531 Nutrition and Aging 2 Same as FSHN 531.

533 Pathophysiology of Human Nutrition 3 Same as FSHN 533.

598 Advanced Topics in Nutrition 1 or 2 May be repeated for credit. Recent research in nutrition.

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

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

Program in Pharmacology and Toxicology


The sciences of pharmacology and toxicology are important in the care 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:

BC/BP 563/564 (564-PhD only) 6
P/T 501 1
P/T 505 3
P/T 506* 3
P/T 597 1
Stat 512 3

*Students who have not taken a physiology course sometime in their undergraduate career must take a 300-level (or higher) physiology course during their first year of study. Students in both the M.S. and Ph.D. programs are expected to develop an area of emphasis that is consistent with the research capabilities and interests of the faculty.

In addition, 13 hours from advanced courses in pharmacology, toxicology or related subjects are required. Elective course work that complements each student’s research and career interests is selected by the student in consultation with his/her advisor. Each student is required to write a thesis based upon original laboratory work that reflects the interests of the faculty within a broad spectrum including: antioxidants; carcinogenesis, cancer chemotherapy and the effects of diet on tumor growth and metastasis; cardiovascular pharmacology and the nutritional and genetic basis of cardiovascular disease; drug metabolism and the role of drug and chemical metabolism in toxicological responses; endocrinology; hepatotoxicology, immunopharmacology; immunotoxicology of drugs of abuse and environmental contaminants; neurobiology, neuropharmacology and behavioral pharmacology; multiple chemical sensitivity; the physiology/biochemistry of neurotransmitters and hormones; and the molecular mechanism of chemically-induced cell death.

Veterinary Medicine and Pharmacy faculty in the Pharmacology/Toxicology Program are housed primarily in Wegner Hall. The building has been remodeled and provides an excellent atmosphere for study and research. Modern instruments available for pharmacological and toxicological research include: UV-, IR-, CD-, fluorescence-, and FT-NMR spectroscopy, facilities for NMR, X-ray crystallography, mass spectroscopy, molecular graphic systems, amino acid analysis, oligonucleotide and peptide synthesis, DNA sequencing, and an Electron Microscopy Center are available on campus. Laboratories of individual faculty members in the PharmTox Program are well equipped with: spectrophotometers, digital imaging, gas chromatographs, cell sorters, mammalian cell culture facilities, liquid scintillation, high performance liquid chromatographs, real-time quantitative PCR instrument, image analyzer, fluorescence and UV/visible microplate readers, flow cytometer, densitometer, and other instruments to perform their research projects. In addition, the building houses a health sciences library and a vivarium equipped to maintain a variety of research animals. Excellent research facilities house other members of the Pharmacology/Toxicology faculty at WSU and at the University of Idaho. You may visit our website at http://www.pharmacy.wsu.edu/PharmTox. Applications for admission to the Program must include: Official GRE scores, official transcripts for all college-level work, three letters of recommendation, and a letter discussing career goals and research interests. For students whose native language is not English, TOEFL scores above 600 are required. Applications and inquiries should be directed to: Admissions Committee, Pharmacology/Toxicology Graduate Program, WSU, Pullman, WA 99164-6554.

Description of Courses

Pharmacology and Toxicology

P/T 501 Fundamentals of Graduate Research in the Life Sciences 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 BC/ BP 563 or c/f, college-level physiology course or c/f. 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).

510 Advanced Pharmacokinetics/Toxicokinetics 2 Prereq P/T 506. Kinetics of drug absorption, distribution, elimination, and pharmacologic response. Cooperative course taught by WSU, open to UI students (FST 510A).

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/ BF 563/564; Rec P/T 505. 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 Pathophysiology of Blood 2 Same as V Ph 535.

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.

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).
### College of Pharmacy

Dean and Professor: W. E. Fassett; Associate Dean and Professor: R. Keith Campbell; Assistant Dean and Associate Professor: Tracy L. Skauer.

### DEPARTMENT OF PHARMACEUTICAL SCIENCES

Professor and Chair, R. M. Quock; Professors, G. G. Meadows, R. T. Okita; Associate Professors, S. S. Daoud, M. W. Fariss, M. Hu; Assistant Professors, M. E. Black, S. L. Chambers, C. A. Elstad, Y. Fu, B. P. Lawrence, J. R. Okita, T. D. Schmittgen; Instructors, 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, consisting of two pre-pharmacy years, and four professional years. The fourth professional year of the Pharm.D. program is outlined below. A total of 193 semester hours are required for graduation.

### First Year

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PharP 450</td>
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</tr>
<tr>
<td>PharP 451</td>
<td>1</td>
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<tr>
<td>PharS 332</td>
<td>1</td>
</tr>
<tr>
<td>PharS 437</td>
<td>1</td>
</tr>
<tr>
<td>PharS 531P</td>
<td>3</td>
</tr>
<tr>
<td>PharS 540P</td>
<td>2</td>
</tr>
<tr>
<td>Zool 315</td>
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</tr>
<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>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>PharP 456</td>
<td>1</td>
</tr>
<tr>
<td>PharP 572P</td>
<td>1</td>
</tr>
<tr>
<td>PharS 532P</td>
<td>3</td>
</tr>
<tr>
<td>PharS 541P</td>
<td>3</td>
</tr>
<tr>
<td>PharS 556P</td>
<td>3</td>
</tr>
<tr>
<td>Zool 353</td>
<td>4</td>
</tr>
<tr>
<td>Electives (Non-Professional)</td>
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### Second Year

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PharP 457</td>
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</tr>
<tr>
<td>PharP 551P</td>
<td>2</td>
</tr>
<tr>
<td>PharP 573P</td>
<td>1</td>
</tr>
<tr>
<td>PharP 581P</td>
<td>3</td>
</tr>
<tr>
<td>PharS 533P</td>
<td>3</td>
</tr>
<tr>
<td>PharS 542P</td>
<td>6</td>
</tr>
</tbody>
</table>

### Degree Program Requirements

**PROFESSIONAL CURRICULUM**

The four professional years of the Doctor of Pharmacy (Pharm.D.) program are outlined below. A total of 193 semester hours are required for graduation.

### PRE-PHARMACY REQUIREMENTS

#### Hours

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Arts and Humanities</td>
<td></td>
</tr>
<tr>
<td>2. Communication Proficiency</td>
<td>3-6</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></td>
</tr>
<tr>
<td>8. Biol 103, 104</td>
<td>8</td>
</tr>
<tr>
<td>9. Chem 105, 106</td>
<td>8</td>
</tr>
<tr>
<td>10. Chem 340, 341, 342</td>
<td>8</td>
</tr>
<tr>
<td>11. Math 140</td>
<td>4</td>
</tr>
<tr>
<td>12. Micro 301</td>
<td>4</td>
</tr>
<tr>
<td>13. Stat 412</td>
<td>3</td>
</tr>
<tr>
<td>14. BC/BN 364</td>
<td>4</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>66</td>
</tr>
</tbody>
</table>

### 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.

#### Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<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>
</tr>
<tr>
<td>PharS 544P</td>
<td>2</td>
</tr>
<tr>
<td>Electives (Non-Professional)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Third Year

#### Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<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>2</td>
</tr>
<tr>
<td>PharP 575P</td>
<td>2</td>
</tr>
<tr>
<td>PharS 534P</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PharP 542P</td>
<td>3</td>
</tr>
<tr>
<td>PharP 554P</td>
<td>5</td>
</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>
</tr>
<tr>
<td>Electives (Non-Professional)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Description of Courses

#### Pharmaceutical Science

**PharS**

- **332** Pharmaceutical Calculations I (0-3) Prereq Math 140. The mathematics of prescription preparation and dispensing. S, F grading.

- **437** Pharmaceutics Laboratory I (0-3) Prereq PharS 531P or c/c. Formulation and extemporaneous preparation of dosage forms.

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

- **531P** [M] Pharmaceutics I 3 Prereq Chem 340, 342, Math 140. Physicochemical principles underlying the design of dosage forms; survey of materials and methods used in the manufacture of dosage forms.

- **532P** Pharmaceutics II 3 Prereq PharS 531P. The study of the interaction between dosage forms and various biological systems.

- **533P** Pharmaceutics III 3 Prereq PharS 332, 532P, 531P. Pharmacokinetics of medication absorption, distribution, and elimination; medication regimen design.

- **534P** Pharmaceutical Biotechnology 2 Prereq PharS 543P. Pharmacological and pharmaceutical properties of medications derived from biotechnology.
Description of Courses

Health Policy and Administration

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPA 500</td>
<td>Introduction to the Health Care System</td>
<td>Orientation to history and organization of the health care system.</td>
</tr>
<tr>
<td>HPA 501</td>
<td>Health Care Policy and Politics</td>
<td>History, methods, results and evaluation of health-care-related policy and politics.</td>
</tr>
<tr>
<td>HPA 502</td>
<td>Law and Ethics of Health Management</td>
<td>Private health law and ethics, including professional liability, relationship of physician and patient, malpractice reform, health institutions, and health access.</td>
</tr>
<tr>
<td>HPA 503</td>
<td>Government Regulation of Health Services</td>
<td>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.</td>
</tr>
<tr>
<td>HPA 509</td>
<td>The Economics of Health Care</td>
<td>3 Same as Econ 455.</td>
</tr>
<tr>
<td>HPA 510</td>
<td>Health Care Cost Accounting</td>
<td>3 Prereq basic financial accounting; graduate standing. Basic cost-accounting concepts, principles, and applications in the health care setting.</td>
</tr>
<tr>
<td>HPA 512</td>
<td>Health Management and Decision Science</td>
<td>3 Prereq HPA 511. Application of decision science technology to risk-analysis problems in healthcare for both investor-owned and non-profit entities.</td>
</tr>
<tr>
<td>HPA 515</td>
<td>Health Care Management</td>
<td>3 Introduction to the knowledge, skills, and values associated with the practice of health management.</td>
</tr>
<tr>
<td>HPA 516</td>
<td>Quality Management</td>
<td>3 Same as E M 570.</td>
</tr>
<tr>
<td>HPA 520</td>
<td>Research and Evaluation Methods</td>
<td>3 Prereq statistics. Basic research and evaluation methods for health care professionals.</td>
</tr>
<tr>
<td>HPA 530</td>
<td>Health Care Information Systems</td>
<td>3 Key attributes of health care information systems and their evolution in health care environment.</td>
</tr>
<tr>
<td>HPA 540</td>
<td>Marketing for Health Care Organizations</td>
<td>3 Prereq graduate standing. Basic marketing concepts, principles, and issues related to marketing public and private health care.</td>
</tr>
<tr>
<td>HPA 576</td>
<td>Managing Change for Healthier Communities</td>
<td>3, 4 (3-3), or 5 (3-6). Same as Nurs 513.</td>
</tr>
</tbody>
</table>

Department of Philosophy

Associate Professor and Department Chair, M. R. Neville; Professors, H. S. Silverstein; Associate Professors, D. M. Holbrook, M. W. Myers; Assistant Professors, M. K. Bloodworth, J. K. Campbell, D. L. Shier.

The Department of Philosophy offers courses which provide the student with an introduction to fundamental intellectual problems and both classical and contemporary attempts at their solutions. Students are encouraged to develop their own critical faculties.

The department offers a course of study leading to the degree of Bachelor of Arts in Philosophy and to a supporting endorsement in education.

Degree Program Requirements

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

At least 40 of the total hours required for the bachelor’s degree in this program must be in 300-400-level courses. No course with a grade of D+ or less will be counted toward the major, no course taken pass/fail may be counted toward the major, and the overall for courses in the major must be at least a C (2.0).

The first two years requirements are common to both philosophy degree programs.
FIRST AND SECOND YEAR REQUIREMENTS

FRESHMAN YEAR

First Semester Hours
Arts & Humanities [H,G] (GER) 3
Degree Program Course 1 3
Engl 101 [WJ] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3

Second Semester Hours
Communications [W,C] (GER) 3
GenEd 111 [A] (GER) 3
Phil 201 3
Science Elective (GER) 4
Social Sciences [S,K] (GER) 3

Sophomore Year

First Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Biological Sciences [B] (GER) 4
Degree Program Course 1 3
Foreign Language, if necessary, or Elective 4
Elective 4

Second Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Degree Program Course 1 3
Foreign Language, if necessary, or Elective 4
Physical Sciences [P] (GER) 4

PHILOSOPHY/PRE-LAW DEGREE PROGRAM (120 HOURS) FYDA

JUNIOR YEAR

First Semester Hours
Arts & Humanities [H,G] or Social Science [S,K] (GER) 3
Intercultural [L,G,K] (GER) 3
Phil 360, 365, or 370 3
Pol S 300 3
Elective 3
Complete Writing Portfolio

Second Semester Hours
Engl 301 [WJ] (GER) 3
Phil 445, 460, or 470 3
Tier III Capstone (GER) 3
Elective 3

SENIOR YEAR

First Semester Hours
Phil Electives 6
Electives 9

Second Semester Hours
Phil Electives 6
Electives 9

TRADITIONAL PHILOSOPHY DEGREE PROGRAM (120 HOURS) FYDA

JUNIOR YEAR

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

FIRST AND SECOND YEAR REQUIREMENTS

Freshman Year

First Semester Hours
Arts & Humanities [H,G] (GER) 3
Degree Program Course 1 3
Engl 101 [WJ] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3

Second Semester Hours
Communications [W,C] (GER) 3
GenEd 111 [A] (GER) 3
Phil 201 3
Science Elective (GER) 4
Social Sciences [S,K] (GER) 3

Sophomore Year

First Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Biological Sciences [B] (GER) 4
Degree Program Course 1 3
Foreign Language, if necessary, or Elective 4
Elective 4

Second Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Degree Program Course 1 3
Foreign Language, if necessary, or Elective 4
Physical Sciences [P] (GER) 4

1 For Philosophy/Pre-Law, take Phil 260, and two Phil Electives; for Traditional Philosophy, take Phil 101, 290, and 305.

The undergraduate minor consists of 16 hours of course work, at least 8 of which must be in 300-400-level courses. Courses are chosen by the student, in consultation with the department, but will normally include Phil 101 and will always include Phil 201.

Description of Courses

Philosophy

Phil 101 [H] Introduction to Philosophy 3
Phil 102 [W] Writing and Reasoning 3
Phil 198 [H] Philosophy Honors 3
Phil 201 [H] Elementary Logic 3
Phil 207 [H] Philosophy of Religion 3
Phil 210 [H] Philosophy of Film 3
Phil 218 [H] Aesthetics 3
Phil 220 [H] Analytical Philosophy 3
Phil 230 [H] Philosophy of Art 3
Phil 240 [M] Seminar in Metaphysics 3
Phil 241 [T] East/West Philosophy of Architecture 3
Phil 250 [H] Philosophy of Science 3
Phil 251 [H] Biomedical Ethics 3
Phil 260 [H] Social and Political Philosophy 3
Phil 290 [H] History of Ancient and Medieval Philosophy 3
Phil 305 [H] History of Modern Philosophy 3
Phil 310 or 340 3
Phil 315 or 335 3
Phil 325 3
Phil 445 or 460 3
Tier III Capstone (GER) 3
Elective 6

Senior Year

First Semester Hours
Phil Electives 6
Electives 9

The principles of ethics as applied to specific problems in business faced by individuals and corporate institutions.

315 [G] [M] Philosophies and Religions of China and Japan 3
PreReq 3 hours Phil. The philosophies and religions of China and Japan, their metaphysical, epistemological, ethical, social, and political positions and views of God and gods.

325 [M] History of Analytic Philosophy 3
PreReq 3 hours Phil. Selected major philosophers, issues, and trends in analytic philosophy.

335 [M] Seminar in Theory of Knowledge 3
PreReq 3 hours Phil. Problems of immediate knowledge and mediate knowledge, modes of cognition. Cooperative course taught jointly by WSU and UI (Phil 431).

340 [M] Seminar in Semantics 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
PreReq 3 hours Phil. Theories of self, world, God, nature of being. Cooperative course taught jointly by WSU and UI (Phil 412).

Business Ethics 3
Pre-Req 3 hours Phil. The principles of ethics as applied to specific problems in business faced by individuals and corporate institutions.

365 [H] Biomedical Ethics 3
Pre-Req 3 hours Phil. Theories of self, world, God, nature of being. Cooperative course taught jointly by WSU and UI (Phil 443).

370 [H] Environmental Ethics 3
Pre-Req 3 hours Phil. The place of humans in nature and human obligations to nature, if any.

375 [M] Women and Ethics 3
Pre-Req 3 hours Phil. Same as W St 375.

390 Topics in Philosophy 3
Pre-Req 3 hours Phil. May be repeated for credit; cumulative maximum 6 hours.

401 Seminar in Symbolic Logic 3
PreReq 3 hours Phil. Cooperative course taught by WSU, open to UI students (Phil 402).

407 Seminar in Religious Studies 3
Pre-Req 3 hours Phil. May be repeated for credit; cumulative maximum 6 hours. Senior seminar for majors in religious studies.

410 Philosophy of Language 3
Pre-Req 3 hours Phil. Concerns including meaning, reference, truth, the nature of language, and the relationship between language and thought. Cooperative course taught jointly by WSU and UI (Phil 435).

418 Philosophy of Biology 3
Pre-Req 3 hours Phil. The biological sciences and their impact on understanding of nature and architecture. Cooperative course taught jointly by WSU and UI (Phil 438).

420 Contemporary Continental Philosophy 3
Pre-Req 3 hours Phil. Twentieth-century European movements in philosophy; phenomenology, existentialism, structuralism, decon-structionism, and others. Cooperative course taught by WSU, open to UI students (Phil 420).

430 [H] Philosophy of Art 3
Pre-Req 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
Pre-Req completion of one Tier I and three Tier II courses. East/West philosophies and their impact on understanding of nature and architecture.

Pre-Req completion of 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
Pre-Req 3 hours Phil. Problems of normative social and political theories; historical and contemporary philosophers. Cooperative course taught jointly by WSU and UI (Phil 411).
450 [M] Philosophy of Mind 3 Prereq 3 hours Phil. Theories of mind, self, mental acts, psychological states and artificial intelligence. Cooperative course taught jointly by WSU and UI (Phil 442).

460 [M] Seminar in Ethical Theory 3 Prereq 3 hours in Phil. Problems of ethical theory as treated by historical and contemporary philosophy. Cooperative course taught jointly by WSU and UI (Phil 414).

470 Philosophy of Law 3 Prereq 3 hours Phil. Selected topics pertaining to moral and philosophical evaluation of law. Cooperative course taught by UI (Phil 410), open to WSU students.

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

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

Physical Science Courses

Description of Courses

Physical Science

Ph S


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. It is the science upon whose principles all other sciences and technologies are based. A major in physics is ideal preparation, for further study in physics or for advanced study in biophysics, medicine, astrophysics, geophysics, chemical physics, engineering, meteorology, and computer science. These same areas also offer careers for the physics major.

Courses offered by the physics department introduce the student to the major physical theories: mechanics, thermodynamics and statistical physics, electricity and magnetism, and quantum physics. Additional undergraduate courses investigate optics, atomic physics, nuclear physics, solid state physics, and astrophysics. Students test the theories in laboratories and learn 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 by federal grants and contracts are pursued in the following fields: acoustics (scattering, nonlinear processes, and levitation); acoustics (luminosity calibration, spectroscopy, statistics); optical properties of semiconductors; biophysics; clusters physics; optical physics (femtosecond laser spectroscopy, scattering from doped polymers, nonlinear optics, quantum electronics, Fourier spectroscopy, diffraction catastrophes); physics education (use of microcomputers in teaching and labs); nuclear solid state physics (Mössbauer effect, perturbed angular 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). Further information may be found on the department’s web server at http://www.physics.wsu.edu.

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

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

The Department of Physics has developed a variety of options for students seeking a major in physics. For most of these options, the program in the first two years is the same. Differences in these will appear as footnotes. The program of courses below is appropriate for students who have had a good experience with calculus and wish to start physics in the first semester at WSU (even if the student is placed in Math 171, if their high school grades for a year course in calculus were B or better they may follow this schedule of study). Students who have placed in Math 172 can accelerate the math sequence. A student who has not had calculus in high school should defer Phys 201 to the spring semester or until they have completed Math 171. Upon consultation with the departmental advisor, modifications can be made in the list of required courses to fit the needs of individual students. Note that in all the programs that follow, the minors listed are possible if the student applies to the respective department before graduation. The minors are never automatically issued. In some degree programs, the course work is close to that required for a minor, but the student must negotiate with the relevant department to finalize that minor program. The degree programs are listed as possibly offering the minor.

A student may certify as a physics major after completing 30 credits (preferably including Phys 201 and Math 171) with a cumulative g.p.a. of 2.0 or better. A research experience is required of all students as a 499 project; however, to gain valuable work experience outside the university, students are strongly urged to participate in an internship or research experience in industry or a government lab outside of WSU. The summer after the junior year is the most appropriate time for this experience. All students are required to submit an undergraduate thesis to a committee of two physics faculty members in the senior year. Phys 490 will give credit for this effort. The student must earn a C (2.0) or better grade in each of the required physics courses.

FIRST AND SECOND YEAR

Requirements

The first year requirements are common to all physics degree programs:

Freshman Year

First Semester

Hours

Engl 101 [W] (GER) 3

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 1 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 2 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 2 3 or 4

Math 315 3

Phys 304 3

Phys 330 3

1 Environmental: ESRP 101; Physics Education: Psych 105 [S] (GER); Computer Physics: Cpt S 150, 250.

2 Astrophysics: Phys 345; Biophysics, Environmental Option: Biol 103, 104; Computer Physics, Optics and Electronics, Technical Option: E E 214; Physics Education: 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]
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); Math Electives (6 hours)\(^1\); Phys 320, 341, 342, 410, 415 [M]; 450, 463, 465, 490 [M]; 499\(^2\).

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); Math Electives (6 hours)\(^1\); Phys 320, 341, 342, 410, 415 [M]; 450, 463, 465, 490 [M]; 499\(^2\).
303 Modern Physics 3 Prereq Math 220 or c//; Phys 202. Quantum and relativity theories with applications to atomic, solid state, nuclear and elementary particle physics.


320 Mechanics 3 Prereq Math 315 or c//; Phys 102 or 202. Particle motion in one-, two-, and three-dimensions; motions of systems of particles; rigid body motion; Lagrange’s equations.

330 Thermal Physics 3 Prereq Math 273; Phys 202. Thermal behavior of systems; energy and entropy; equations of state; changes of phase; elements of continuum and statistical approaches.

341 Electricity and Magnetism I 3 Prereq Math 315 or c//; Phys 202. Electrostatic fields, magnetic fields, circuits, electric circuits, magnetic circuits, loops, magnetic media.

342 Electricity and Magnetism II 3 Continuation of Phys 341. Maxwell’s equations; electromagnetic waves, special relativity.

345 [P] Principles of Astronomy 3 Same as Astr 345.

371 Mathematical Physics 3 Prereq Math 273, Phys 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.

380 [P] Physics and Society 3 Interactions of physics with society; energy; air and water pollution; recycling; communications and computers; physics and war; physics and art.

385 Environmental Physics 3 Prereq Math 171; Phys 101 or 201; 102 or 202. Basic physics concepts applied to environmental problems engendered by technology; physical understanding of the earth, resources; environmental changes induced by people.

410 Electronics 3 (1-6) Prereq Phys 102 or 202. Laboratory construction and investigation of electronic circuits employed in research instruments.

420 Modern Optics Laboratory 3 (2-3) Prereq Phys 443 or c //. Fundamentals of experimental modern optics and applications in science and engineering.


435 Astronomy and Astrophysics 3 May be repeated for credit; cumulative maximum 6 hours. Same as Astr 435.

443 Optics 3 Prereq Phys 341 or c//. Polarization, interference, coherence, and diffraction phenomena of the electromagnetic spectrum; optics of solids; laser resonators; gaussian beams; ABCD matrices.

450 Introduction to Quantum Mechanics 3 Prereq Math 315; Phys 303. Introduction to quantum theory with applications to atomic physics. Cooperative course taught jointly by WSU and UI (Phys 450).

461 Introduction to Atomic and Molecular Physics 3 Prereq Phys 304. Introduction to atomic and molecular physics; spectroscopy.

463 Introduction to Solid State Physics 3 Prereq Phys 304. Introduction to the physics of solids; crystal structures, lattice vibrations, and electron theory. Cooperative course taught jointly by WSU and UI (Phys 463).


490 [M] Undergraduate Thesis I Preliminary thesis draft of a laboratory or library research experience, oral presentation, and final draft.

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

514 Optoelectronics Lab I V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 3 hours. Experiments with optical systems: Imaging, interference, coherence, information storage-processing, gas and solid state lasers, optical fibers, and communications systems.

515 Optoelectronics Lab II V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 3 hours. Experiments in optical physics, physical properties of light, laser physics, waveguides, quantum confined semiconductor structures and ultrafast dynamics and nonlinear optics.

521 Classical Mechanics I 3 Prereq Phys 320 or c//. Laws of motion as developed by Newton, d’Alembert, Lagrange, and Hamilton; dynamics of particles and rigid bodies. Cooperative course taught jointly by WSU and UI (Phys 521).


533 Thermal and Statistical Physics I 3 Prereq Math 340; Phys 330. Thermodynamical laws and potentials, kinetic theory, hydrodynamics and transport coefficients; introduction to statistical mechanics, ensembles, partition functions. Cooperative course taught jointly by WSU and UI (Phys 533).


538 Topics in Modern Astrophysics 3 May be repeated for credit; cumulative maximum 9 hours. Same as Astr 538.

541 Electromagnetic Theory 3 Prereq Phys 342, 571 or c//. Special relativity and the classical electromagnetic field; emission, propagation, and absorption of electromagnetic waves. Cooperative course taught jointly by WSU and UI (Phys 541).

542 Electrodynamics 3 Prereq Phys 541. Interaction of matter and electromagnetic radiation; classical and quantum electrodynamics. Cooperative course taught jointly by WSU and UI (Phys 542).

545 Nonlinear Optics 3 Prereq Phys 534, 542, 551. Nonlinear wave propagation theory applied to several nonlinear-optical phenomena: experimental techniques that probe a material’s nonlinearity.

546 Quantum Electronics 3 Prereq Phys 541, 551 or c//. The physics of lasers and of coherent optical radiation generation and propagation.

550 Quantum Theory I 3 Prereq Math 440, 441; Phys 450. Introduction to quantum theory; physical and mathematical foundations; application to atomic systems. Cooperative course taught jointly by WSU and UI (Phys 550).

551 Quantum Theory II 3 Prereq Phys 550, 571. Symmetry and invariance; angular momentum theory; approximation methods. Cooperative course taught jointly by WSU and UI (Phys 552).

552 Quantum Theory III 3 Prereq Phys 551. Scattering theory; relativistic wave mechanics; quantum field theory. Cooperative course taught jointly by WSU and UI (Phys 553).


563 Physics of the Solid State 3 Prereq Phys 534, 551. Lattice vibrations and defects; ionic and electronic conductivities; band theory; magnetic properties; luminescence. Cooperative course taught jointly by WSU and UI (Phys 563).

565 Nuclear Physics 3 Prereq Phys 465, 551. Nuclei and nuclear interactions from theoretical and experimental viewpoint, properties of nuclei, two-body problems, complex nuclei, nuclear spectroscopy, reactions, models. Cooperative course taught jointly by WSU and UI (Phys 566).

571 Methods of Theoretical Physics 3 Prereq Math 440, 441. Mathematical methods for theoretical physics; linear algebra, tensor analysis, complex variables, differential equations, integral equations, variational calculus, and group theory. Cooperative course taught jointly by WSU and UI (Phys 571).

573 Physical Applications of Group Theory 3 Prereq Phys 551. Introduction to group theory with applications to atoms, molecules, solids, and elementary particles; no previous knowledge of group theory assumed. Cooperative course taught by UI (Phys 573), open to WSU students.

575 Advanced Solid State Physics 3 Prereq Phys 534, 542, 552 or c//, 563, 571. Quantum theory of solids; Green’s functions, correlation functions and other field-theoretic methods; magnetism, superconductivity and transport properties.

581 Advanced Topics 3 May be repeated for credit; cumulative maximum 12 hours. Topics of current interest in advanced physics. Cooperative course taught jointly by WSU and UI (Phys 581).

590 Seminar I 1 May be repeated for credit. S, F grading.

591 Seminar in Computational Physics 1 May be repeated for credit; cumulative maximum 4 hours. Computational physics; numerical methods and physical application to supercomputers, mainframes, mini-, and microcomputers. S, F grading.

592 Wave Propagation Seminar 2 Prereq Math 440, 441. May be repeated for credit; cumulative maximum 4 hours. Waves in the continuum; elastic, plastic, and hydrodynamic waves; shock waves. S, F grading.

593 Seminar in Physics of Condensed Matter 1 May be repeated for credit; cumulative maximum 4 hours. Topics in the physics of solids; the experimental and theoretical study of the electronic and atomic structure of materials. S, F grading.

594 Seminar in Solid-State Physics 1 May be repeated for credit; cumulative maximum 3 hours. Experimental and theoretical methods of study of matter in the condensed state and at interfaces. S, F grading.

599 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.

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

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

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

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biol 103 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 105 [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>GenEd 110 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Math 107</td>
<td>3</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 104 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 106 [P] (GER)</td>
<td>4</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>Micro 101 [B] (GER)</td>
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Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Bot 120 [B] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Chem 240</td>
<td>4</td>
</tr>
<tr>
<td>Phys 101 [P] (GER)</td>
<td>4</td>
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<tr>
<td>Soil 201</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities [H,G] or Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Biol 372</td>
<td>4</td>
</tr>
<tr>
<td>Communication Proficiency [C,W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>CropS 101</td>
<td>3</td>
</tr>
<tr>
<td>Phys 102 [P] (GER)</td>
<td>4</td>
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Junior Year

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Bot 320</td>
<td>4</td>
</tr>
<tr>
<td>CropS 201</td>
<td>4</td>
</tr>
<tr>
<td>Hort 201</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Complete Writing Portfolio</td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Ag 201</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Bot 332</td>
<td>4</td>
</tr>
<tr>
<td>CropS 305</td>
<td>3</td>
</tr>
<tr>
<td>Engl 351</td>
<td>3</td>
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</table>

Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Entron 340</td>
<td>3</td>
</tr>
<tr>
<td>GenCB 301</td>
<td>4</td>
</tr>
<tr>
<td>Intercultural [L,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Pl P 429</td>
<td>3</td>
</tr>
<tr>
<td>Ag Elective</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Tier III Capstone (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Ag Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

The following substitutions may be allowed with departmental approval: Chem 101/102 for Chem 105/106; Entron 343 for Entron 340; H.D.205 for Engl 351; Math 171 for Math 107; Micro 201 for Micro 101.

Preparation for Graduate Study

As preparation for work toward an advanced degree a student should have completed a bachelor’s degree; at least one year each of general inorganic chemistry, botany, zoology, physics, and a foreign language; one semester each of systematic botany, plant physiology, bacteriology, general plant pathology, entomology, precalculus, organic chemistry, genetics, and report writing or advanced composition.

Description of Courses

Note that most plant pathology courses are offered on an alternate year only basis.

Plant Pathology

PI P

309 Fundamentals of Plant Pathology 3 (2-3) Prereq Biol 102 or Bot 120. Concepts and terminology associated with the classification, symptoms, causes, development, and control of plant diseases associated with irrigated crop production.

331 Forest Pathology 2 (0-6) Prereq Biol 103. Parasitic and nonparasitic diseases of forest and shade trees; life histories of fungi as related to diseases.

360 Crop Plant Problem Diagnosis 1 (0-3) May be repeated for credit; cumulative maximum 3 hours. Prereq CropS 305, Entron 340, Hort 304, 350, Pl P 309, Field assessment of crop plant problems; diagnosis of problems associated with crops growing in the Columbia Basin.

403 Advance Cropping Systems 3 Same as CropS 403. Credit not granted for both Pl P 403 and 503.

421 General Mycology 4 (2-6) Prereq Biol 103 or Bot 120. The structure, life histories, classification, and economic importance of the fungi. Credit not granted for both Pl P 421 and 521. Cooperative course taught by WSU, open to UI students (PIsc 421).

429 General Plant Pathology 3 (2-3) Prereq Biol 103 or Bot 120. Classification, symptoms, causes, epidemiology, and control of plant diseases. Credit not granted for both Pl P 429 and 529.

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

503 Advance Cropping Systems 3 Graduate-level counterpart of Pl P 403; additional requirements. Credit not granted for both Pl P 403 and 503.

511 Viruses and Virus Diseases of Plants 4 (3-3) Prereq course in biochem or adv genetics. Nature of plant viruses, vector-virus relationships and virus diseases of plants. Cooperative course taught jointly by WSU and UI (PIsc 511).

513 Nematodes and Nematode Diseases of Plants 2 (3-3) Prereq Pl P 429. Anatomy, identity, and disease caused by nematodes; techniques and control.

222
514 Phytochemistry 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 to UI students (PlSc 514).

515 Seminar 1 May be repeated for credit.

521 General Mycology 4 (2-6) Graduate-level counterpart of PI P 421; additional requirements. Credit not granted for both PI P 421 and 521.

522 Basidiomycetes 3 (2-3) Prereq PI P 421. Taxonomy, physiology, and reproduction of rusts, jelly fungi, smuts, and higher basidiomycetes. Cooperative course taught by WSU, open to UI students (Bot 575).

523 Ascomycetes and Fungi Imperfecti 3 (1-6) Prereq PI P 421. Taxonomy, phylogeny, physiology, reproduction of ascomycetes, and fungi imperfecti. Cooperative course taught by WSU, open to UI students (Bot 576).

524 Lower Fungi 2 (1-3) Prereq PI P 421. Taxonomy, phylogeny, physiology, and reproduction of aquatic and terrestrial phycymycetes and myxomycetes. Cooperative course taught by WSU, open to UI students (Bot 577).

525 Field Plant Pathology and Mycology 1 (0-3) or 2 (0-6). May be repeated for credit; cumulative maximum 4 hours. Rec plant pathology and/or mycology course; by interview only. Field trips, forays, and demonstrations dealing with various aspects of plant pathology and mycology.

529 General Plant Pathology 3 (2-3) Graduate-level counterpart of PI P 429; additional requirements. Credit not granted for both PI P 429 and 529.

534 Fungal Genetics 3 (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 (PlSc 535).

541 Analytical Methods for Phytopathological Research 3 (2-3) Prereq Micro 201 or PI P 429. Survey of research techniques in plant pathology, including history and principles. Cooperative course taught by UI (PlSc 541), open to WSU students.


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

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

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

Program in Plant Physiology


Graduate study leading to degrees of Master of Science in Plant Physiology and Doctor of Philosophy is offered as an interdepartmental curriculum by the graduate faculty from the Departments of Crop and Soil Science, Horticulture and Landscape Architecture, Molecular Biosciences, Plant Pathology, and the Institute of Biological Chemistry. The objectives of the program are to provide the graduate student with a broad knowledge in plant physiology and with research experience in a chosen area within this discipline. Specialization includes cellular and subcellular physiology, the molecular biology and biochemistry of plant-related processes, photosynthesis and photorespiration, nitrogen fixation, phytochemistry, the physiology of vascular plants, metabolism, plant pathogen interactions, hormonal interactions and regulation of growth, crop production physiology, and physiological ecology as well as related areas in agriculture and biology.

Students entering the program must have completed their baccalaureate degree with training in one year each of elementary biology or botany, and physics, chemistry through one semester of organic chemistry, one semester each of plant physiology and genetics, and mathematics (through calculus). Limited undergraduate deficiencies may be remedied by taking the appropriate courses upon enrollment in the graduate program on a provisional basis. Degree requirements for both the MS and PhD degrees include courses in advanced plant physiology, plant morphology and anatomy, and biochemistry. To meet the minimum requirements of core course credit in the Graduate School, elective courses are chosen as approved by the student’s advisor and the supervising committee of graduate faculty. There is no foreign language requirement.

Policies and procedures of the Graduate School apply to all admissions. Interested students may direct their inquiries to plant physiology or to any participating academic unit. Should the latter route be followed, preference for the Program in Plant Physiology must be indicated and, if possible, the research area of interest identified.

The program offers flexibility for students with varied backgrounds in chemistry, biochemistry, plant physiology, molecular biology, botany, genetics, 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 interaction with plant physiologists and plant scientists representing a wide range of research interests and provides the student with a broad choice of specialized facilities which are available in the cooperating academic units.

Financial support for students in the program is determined within the administering academic unit and not by plant physiology. Participating faculty may provide support through individual grants and contracts. Every effort will be made to inform applicants of these opportunities.

Course requirements are drawn from existing courses offered by cooperating departments and programs. In addition, a seminar is held weekly during each semester.

Description of Courses

Plant Physiology

PI PH

515 Seminar in Plant Physiology 1 May be repeated for credit; cumulative maximum 4 hours. A cross-discipline seminar, including botany, crop and soils sciences, horticulture, plant pathology, and plant physiology.

561 Biochemical Signaling 2 Same as 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 Trafficking in Eucaryotic Cells 3 Prereq BC/BP 563; graduate standing. The biochemistry and cell biology involved in protein trafficking among organelles in eucaryotic cells. Cooperative course taught by WSU, open to UI students.

587 Advanced Topics in Plant Biochemistry 2 Same as 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


Courses in political science are offered in political institutions (presidency, congress, the courts, political parties, mass media), public policy formation and evaluation, public law, civil liberties, international relations (foreign policy, strategic policy, conflict resolution), comparative government (area studies, post-industrial societies, cross-national comparisons), political philosophy and methodology.

The department offers courses of study leading to the degrees of Bachelor of Arts in Political Science, Master of Arts in Political Science, and Doctor of Philosophy. The department is the locus of the Criminal Justice Program, which offers courses of study leading to the Bachelor of Arts in Criminal Justice and the Master of Arts in Criminal Justice. For details, see the criminal justice section of this catalog.

Prelaw Studies

No specific major is required to be eligible for law school. The department’s Prelaw Advising Center assists all students interested in law school regardless of their intended major.

Through its prelaw curriculum, the department offers a selection of courses designed to prepare students adequately for law school and eventual careers in law. This curriculum reflects recommendations of the Association of American Law Schools. Students choosing other departmental options are also eligible to attend law school if they meet admission requirements.

Public Service

Government is the nation’s largest employer. Many public officials are political science graduates. The department advises students concerning training and career opportunities in federal, state, and local governments, the foreign service, and related occupations. Its extensive internship program places students in public agencies, political parties, and similar organizations. The department also encourages and advises students on study abroad as part of preparing for careers in international affairs.
Division of Governmental Studies and Services

The department’s Division of Governmental Studies and Services (DGSS) is an instrument for extending beyond the classroom and into public service the resources represented in the department’s teaching and research personnel. Functions of the division include performing research and issuing publications relating to government and public affairs; providing training and consulting services to public agencies and private organizations concerned with public affairs; and administering internship programs to provide practical experience in government. DGSS maintains a collection of specialized government publications and related materials and, in general, acts as a link between teaching and the conduct of public affairs.

Minor and Second Major

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

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

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

Students wishing to enroll in Pol S 499 must have at least junior standing and consent of the instructor; no more than 3 hours of 499 or 3 hours of 497 may be counted towards the departmental requirements.

GENERAL POLITICAL SCIENCE DEGREE PROGRAM (123 HOURS) ✔FYDA

36 hours in Pol S, at least 15 of which must be earned at WSU required.

Freshman Year

First Semester Hours
Arts & Humanities [H,G] (GER) 3
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Pol S 101 [S] (GER) 3
Social Sciences [S,K] (GER) 3

Second Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Communication [C,W] (GER) 3
GenEd 111 [A] (GER) 3
Intercultural [I,G,K] (GER) 3
Pol S 102 [S] (GER) 3

Sophomore Year

First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Foreign Language, if necessary, or Elective 3 or 4
Math Proficiency [N] (GER) 3
Pol S 103 [S] (GER) 3
Science Elective (GER) 4

Second Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Biological [B] Sciences (GER) 4
Foreign Language, if necessary, or Elective 3 or 4
Pol S Elective1 3
Pol S Elective2 3

Junior Year

First Semester Hours
300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Pol S Elective [M] 3
Physical [P] Sciences (GER) 4
Pol S Elective3 6
Complete Writing Portfolio

Second Semester Hours
300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Pol S Elective [M] 3
Cpt S (GER) Stat Elective4 3
Engl 201 [W], 301 [W], or 402 [W] (GER) 3
Pol S Elective5 3

Senior Year

First Semester Hours
300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Pol S Elective [M] 3

Second Semester Hours
300-400-level Arts & Humanities or Social Sciences Elective 3
300-400-level Pol S Elective [M] 3
Cpt S (GER) Stat Elective4 3
Engl 201 [W], 301 [W], or 402 [W] (GER) 3
Pol S Elective5 3

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.

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

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 4
Econ 101 [S] or 102 [S] (GER) 3
GenEd 111 [A] (GER) 3
Pol S 102 3

Sophomore Year

First Semester Hours
Crm J 101 3
Phil 201 3
Physical Sciences [P] (GER) 4
Pol S 103 3
Eelective 3

Second Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Engl 201 or 301 [W] (GER) 3
Pol S 300 3
Pol S [M] Course Elective 3
Public Speaking or Argumentation Elective 3

Junior Year

First Semester Hours
Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) 3
Pol S 402 3
Crm J 320 or 420 3
Electives 6
Complete Writing Portfolio

Second Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Pol S 404 [M] (GER) 3
Pol S Elective 3
Electives 6

Senior Year

First Semester Hours
Intercultural [I,G,K] (GER) 3
Pol S 443 3
Electives 6

Second Semester Hours
Tier III Capstone (GER) 3
Electives 12

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 supranational communities; major world problems since 1945.

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

206 State and Local Government 3 Institutions, processes, and problems, with special reference to the state of Washington.

300 The American Constitution 3 Prereq Pol S 101. Constitutional principles as established by the Supreme Court and related political developments.

301 Political Simulations 3 Prereq Pol S 101. Preparation for and participation in political simulations.

305 [S] Gender and Politics 3 Role of gender in political behavior; voting and political participation; women as subjects and objects of political systems.

314 Nations 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 CAC 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 common among developing nations, Cooperative course taught by WSU, open to UI students (PolSc 501).


437 Classical Political Thought 3 The development of political philosophy from the pre-Socratites 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 Public administration systems in Europe, Japan, Socialist and developing countries; origins and development.

448 Urban Politics and Policy 3 Urban political processes and policies; intergovernmental relationships; impact of urban reform.

450 The Legislative Process 3 Role of legislatures in a democratic system; problems of representation; election and tenure of lawmakers; legislative organization and procedures.

455 The Presidency 3 Organization and processes of executive institutions at the national level; uses and limits of executive power.

456 Political Leadership 3 An analysis of political leadership, including different conceptions of leadership, recruitment, leader-follower relations, tactics, and evaluation of leaders.

460 [M] Politics of the Third World 3 Issues and problems of political development and international relations common among developing nations.

472 [M] Politics of Postindustrial Nations 3 Government and politics of postindustrial societies, including West Europe and Japan.

474 [K] [M] African Politics 3 Same as CAC 439.

476 Revolutionary China: 1800 to Present 3 Same as Hist 476.

498 Topics in Political Science 3 V 1-3 May be repeated for credit; cumulative maximum 6 hours. Selected issues and topics in political science.

499 Computer-aided Research in Political Science 3 Mainframe and microcomputer applications for political science research; practical application. S, F grading.

497 Political Science Internship 3 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 government unit or nonprofit/public organization. S, F grading.

498 Cooperative Education Internship 3 V 2-12 May be repeated for credit; cumulative maximum 12 hours. By interview only. Off-campus cooperative education internship with business, industry, or government unit coordinated through the Professional Experience Program. S, F grading.

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

501 The Scope of Political Science 3 Prereq 12 hours Pol S. Historical development and present status of the discipline; contemporary issues and future trends. Cooperative course taught by WSU, open to UI students (PolSc 530).

502 Seminar in Normative Theory 3 Elements of normative theory developments; examination of bases of controversies and approaches in the modern literature using historical sources.

503 Introduction to Political Science Research Methods 3 Prereq 12 hours Pol S; Soc 321. Social science research design topics, measurement, sampling, data sources, experimental and quasi-experimental designs, field and historical designs, content analytic designs.

504 Quantitative Methods in Political Science and Criminal Justice 3 Prereq introductory statistics course. Applied statistical skills, enabling understanding of substantive political and social questions.

505 Comparative Criminal Justice Systems 3 Same as Crm J 505.

510 Seminar on American Institutions and Processes 4

511 Seminar in American Political Thought 3 May be repeated for credit; cumulative maximum 6 hours. The genesis and development of political thought in the United States.

512 Seminar in American Institutions 3 May be repeated for credit, cumulative maximum 6 hours. Origin, development, and contemporary issues in political organization and structure in the United States.

513 Seminar in American Political Behavior 3 May be repeated for credit, cumulative maximum 6 hours. Theoretical approaches to, and empirical analysis of, mass political behavior in the US.

514 Seminar in Public Policy 3 Examination of central questions in public policy including what is the nature of public policy, what is policy analysis, why does government intervene in society?

515 Governmental Policy and Program Analysis 3 Techniques used to analyze policy alternatives and to evaluate programs; developing program objectives, management by objectives, productivity analysis, program evaluation, and policy analysis. 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 Resources 3 Same as Anth 510.

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 540.

542 Proseminar in Administration, Justice, and Applied Policy Studies 3 May be repeated for credit; cumulative maximum 6 hours. 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 Pol S 340 or 445. Analytical perspectives and theoretical issues. Cooperative course taught jointly by WSU and UI Students (PolSc 592).

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 6 hours. Prereq Pol S 3 or Pol S graduate student. Internship in federal, state, or local government unit, S, F grading.

599 Research Practicum V 1-3 May be repeated for credit; cumulative maximum 6 hours. S. F grading.

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

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

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

Predental Curriculum

Associate Professor and Coordinator, D. F. Moffett.

Preparation for dental school requires a minimum of two years of college work; however, only a few exceptional students are accepted with the abbreviated background. Three years of college training are strongly recommended and, where possible, the baccalaureate degree should be secured before attending a professional school. This is the strongly preferred alternative.

The following constitutes the minimum requirements:

1. One year (6 semester hours) of college English.
2. One year of college physics with lab.
3. One year of inorganic chemistry with lab.
4. One year of organic chemistry with lab.
5. One year of biology is mandatory, and additional work is strongly recommended.
6. 21 or more hours of electives in the social sciences and humanities.

In addition, one semester each of biochemistry and microbiology are required by some institutions.

Admission to a school of dentistry is based on satisfactory completion of the entrance requirements of that school, attainment of satisfactory scholastic record, satisfactory scores on the Dental Admission Test (DAT), the possession of personal qualifications necessary for the study of dentistry, and a single composite letter written by the coordinator.

Additional information can be obtained from D. F. Moffett, Associate Professor and Coordinator, Predental Curriculum, Washington State University, 236 Morrill Hall, Pullman, WA 99164-3524.

Premedical Curriculum

Associate Professor and Coordinator, D. F. Moffett.

Preparation for medical school requires a minimum of three years of college work; however, extremely few students are accepted with this abbreviated background. Since there are about three times as many applicants nationwide as there are available places in medical schools, preference is usually given to candidates who have attained the baccalaureate degree. The following will meet the minimum requirements of most medical schools:

1. One year of English composition.
2. One year of inorganic chemistry with lab.
3. One year of organic chemistry with lab.
4. One year of college physics with lab.
5. Mathematics through calculus.
6. One year of college biology. BC/BP 364 and GenCB 301 are strongly recommended.
7. 21 or more hours of electives in the social sciences and humanities.

In addition, all premedical students must take the Medical College Admissions Test (MCAT).

Premedical students are strongly urged to include in their studies a good selection of non-science courses (e.g., history, English, philosophy, humanities, anthropology, foreign languages) of their own preference and choosing. Medical schools neither place restrictions on major area of interest nor encourage taking courses which overlap in subject matter with those in medical school.

Acceptance of a student by a medical school is contingent on the satisfactory completion of at least the minimum entrance requirements of that school, attainment of a superior scholastic record, good to excellent scores on the MCAT, and possession of personal qualifications appropriate to success in the medical profession. Most schools require applicants to appear for a personal interview. In addition, letters of recommendation from several college teachers or a single composite letter written by the coordinator must strongly support the applicant. The latter is preferable.

Many medical schools welcome applications from students who have majors, or who have taken considerable work, in such diverse areas as humanities, mathematics, psychology, sociology, physics, chemistry, biochemistry, and engineering. Adequate latitude exists in the medical schools’ requirements so that the advisor usually is able to suggest a schedule of studies to meet the needs of the individual students. Medical schools also expect a good selection of nonscience courses on the student’s transcript.

Additional information can be obtained from D. F. Moffett, Associate Professor and Coordinator, Premedical Curriculum, Washington State University, 236 Morrill Hall, Pullman, WA 99164-3524.

Department of Psychology


The bachelor’s degree program provides for either a major or a minor in psychology. The program for majors is designed for those who wish to study psychology as part of a liberal education; for those who plan to use their training in related vocations such as the professions, governmental organizations, business and industry, and psychological services; and for those who are preparing for graduate work in psychology. Course offerings are open to students in other departments who need a background in those aspects of psychology which are related to their respective fields. Also, it is possible to combine a major in psychology with the certificate program in alcohol studies or with a minor in alcohol studies.

Alcohol studies offers an interdisciplinary sequence of courses designed to provide a broad knowledge concerning the etiology, development, treatment, and prevention of alcohol addiction and abuse. Students work on a baccalaureate degree of their choice while also completing the requirements for either the minor or the certificate in alcohol studies.

Upon completion of the academic requirements, students pursuing the certificate in alcohol studies must complete an internship in a state-approved alcoholism treatment facility (a potential job setting). The internship provides an opportunity for integration and
application of knowledge, and acquisition and honing of skills necessary for effective assessment, intervention, and prevention of alcohol addiction and abuse.

The graduate program leads to advanced degrees for qualified students who plan careers as psychologists. The course of study for the Doctor of Philosophy degree may be directed toward either a specialization in clinical or experimental psychology. The graduate training program in clinical psychology at Washington State University is accredited by the American Psychological Association.

The department offers courses of study leading to the degrees of Bachelor of Science in Psychology, Master of Science in Psychology, and Doctor of Philosophy.

Excellent facilities are available for instruction and research in psychology. There are specially designed facilities for research in learning, memory, sensory processes, perception, animal behavior, physiological psychology, social interaction, and behavior modification. Departmental facilities also include the Psychology Clinic, which is a training clinic. In addition, cooperative arrangements with other units of the university and with outside agencies and institutions make it possible for students to gain first-hand experience in research and professional work. The university maintains a comprehensive library of books and journals in psychology and related fields.

Degree Program Requirements

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

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

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 completing 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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</thead>
<tbody>
<tr>
<td>Biol 102 [B] or 103 [B] (GER)</td>
<td>4</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Intercultural [I,G,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Psych 105 [S] (GER) or 198</td>
<td>3</td>
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</tbody>
</table>

Second Semester

| Arts & Humanities [H,G] (GER) | 3 |
| Communication [C,W] (GER) | 3 |
| GenEd 110 [A] (GER) | 3 |
| Math 140 [N], 171 [N], or 210 [N] (GER) | 3 or 4 |
| Social Sciences [S,K] (GER) | 3 |

Sophomore Year

<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>
<td>3</td>
</tr>
<tr>
<td>GenEd 111 [A] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences [P] (GER)</td>
<td>4</td>
</tr>
<tr>
<td>Psych 311</td>
<td>4</td>
</tr>
</tbody>
</table>

Second Semester

| Arts & Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER) | 6 |
| Biological [B] or Physical [P] Sciences (GER) | 4 |
| Psych 312 [M] | 4 |

Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Group I Psych Elective¹</td>
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<tr>
<td>Group II Psych Elective¹</td>
<td>3</td>
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<tr>
<td>Electives</td>
<td>7</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>
</tr>
</thead>
<tbody>
<tr>
<td>Group I Psych Elective¹</td>
<td>3</td>
</tr>
<tr>
<td>Group II Psych Elective¹</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Non-Psych Electives</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Group I Psych Elective¹</td>
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</tr>
<tr>
<td>Psych Elective¹</td>
<td>3</td>
</tr>
<tr>
<td>Tier III Capstone [H,G,S,K] (GER)</td>
<td>3</td>
</tr>
<tr>
<td>300-400-level Non-Psych Electives</td>
<td>7</td>
</tr>
</tbody>
</table>

Psych 312, 324, 333, 350, 361, 363 and Group II SPRING:  
Psych 384, 401, 470, 473, 490 and Group II FALL:  
Psych 321, 324, 333, 350, 361, 363 and Group II SPRING:  

¹Fulfills GER and department math requirement. Must be completed with C or better.
²Please note that if you take only 3 credits of science elective, you will need to take another 1-credit science elective (i.e. Biol 201).
³The Psych courses listed above under Groups I and II are recommended for that semester. Some are only offered in the fall or the spring. Group I FALL:  
Psych 372, 384, 394, 401, 470, 473, 490 and Group I SPRING:  
Psych 384, 401, 470, 473, 490 and Group II FALL:  
Psych 321, 324, 333, 350, 361, 363 and Group II SPRING:  
⁴Writing 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, with a faculty advisor is recommended prior to selecting either Psych courses or supporting courses in other areas.

Students in the Honors Program and transfer students should ask about modifications in the above schedule for the Psych majors. Students interested in combining a Psych major with the certificate program in Alcohol Studies should inquire at the office of the Department of Psychology.

Minors

Minor in Psychology. The minor in Psych may be certified after the completion of 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 is required, and a statistics or research methods course is strongly recommended; electives must be chosen in consultation with a psychology advisor.

Teaching Minor in Psychology. For the Psych minor in secondary school teaching, see the Teaching and Learning section of this catalog.

Minor in Alcohol Studies (16 hour minimum). AlcSt 365, 366, AlcSt/Psych 444 or S W 493; Pharm 217; Psych 321 or 323; Psych 440 or S W 393. Recommended electives: AlcSt 367, 499, Psych 220, 324, 350; S W 190, 296, 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 Contemporary psychology; biological, social, and psychological influences on normal and abnormal human behavior.

Psychology Applied to Daily Living: Dealing with Friends, Alcohol, and Sex 1 Prereq Psych 105 or c/c. Application of psychological procedures to the problems of group living, alcohol use, sexual decision making and related social issues.

Psychology Honors 3 May substitute for Psych 105 as a prerequisite 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.

Psychology of Stress 3 Prereq Psych 105. Causes and characteristics of stress; stress prevention and management; psychological aspects of health and illness.

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 Biol 102 or 103; Psych 105. Biopsychological effects of the major classes of abused and psychotherapeutic drugs, including alcohol, stimulants, sedatives and hallucinogens.

301 Seminar in Psychology V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq 6 hours Psych.

306 Industrial/Organizational Psychology 3 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.

309 [S] Cultural Diversity in Organizations 3 Prereq Psych 105. Psychology applied to cultural diversity in organizations; interpersonal and intergroup relationships; diversity training; EEO legislation and affirmative action.

310 Pseudoscience and Human Behavior 3 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, therapies, 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 [S] Principles of Developmental Psychology 3 Prereq Psych 105. Introduction to biological and psychosocial influences on child development.

363 Psychology of Aging 3 Prereq Biol 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 Biol 102 or 103; Psych 105. Functional relationship between nervous system and behavior; integrated organ systems, sensory processes, and investigative procedures. Occasional lab meetings required; see instructor for times.
536 Measurement Theory and Personality Assessment 3 Prereq Psych 530, 539. Psychometric theory, theories of personality, objective and projective methods of assessing personality, development of testing and interpretive skills.

537 Psychology Clinic Assessment Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Prereq Psych 539 or by interview only. Supervised practice in psychological assessment in the Psychology Clinic. S, F grading.

538 (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.

541 Marriage and Marital Therapy 3 Prereq Psych 530, 535, 536. Graduate standing. Introduction to research on marital relationships, clinical models of marital dysfunction, and methods of intervention with distressed couples.

542 Community Psychology 3 Examination of community and its effects on health and behavior; organization of community-based mental health services.

543 Child Clinical Psychology: Empirical Approaches to Assessment and Therapy 3 Research on developmental psychopathology, child assessment, and child therapy.

544 Medical Psychology: Psychological and Pharmacological Interventions 3 Psychological factors and their influence upon the causes and/or course of medical illnesses as well as relevant clinical interventions. Cooperative course taught by WSU, open to UI students (Psych 544).

545 Psychology Clinic Adult Therapy Practicum 3 (0-9) May be repeated for credit; cumulative maximum 18 hours. Prereq Psych 520, 530, 535, 536, 539, or c/. By interview only. Supervised practice in the clinical application of psychology with adults in the Psychology Clinic. S, F grading.

546 Counseling Service Practicum V 1-3 May be repeated for credit; cumulative maximum 12 hours. Prereq Psych 520, 530, 535, 536, or c/. By interview only. Supervised practice in the clinical application of psychology at the WSU Counseling Service. S, F grading.

547 Medical Psychology Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Supervised practice in the clinical application of psychology at the WSU Health and Wellness Service. S, F grading.

548 Behavioral Medicine Practicum 3 May be repeated for credit; cumulative maximum 18 hours. Supervised practice in the clinical application of psychology at the Sacred Heart Medical Center and St. Luke’s Rehabilitation Center. S, F grading.

549 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 behavioralism) views of personality development.

574 Psychological Sociology 3 May be repeated for credit. Neuroanatomical, neurochemical, and other biological cases of human and animal behavior.

575 Foundations of Neuropsychology 3 Foundations in brain/behavior relationships and neuropsychological syndromes; preparation for advanced training in neuropsychological assessment.

576 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.

577 Behavioral Pharmacology 3 Prereq Psych 574. Survey of drugs which affect brain function with emphasis on animal models and clinical applications.

579 Behavioral Neuroscience 3 Prereq Psych 574. Advanced topics in neuroscience, neurophysiology, and neuroanatomy.

584 Sensory Bases of Behavior 3 Prereq Psych 184. Sensory and physiological aspects of vision, audition, and other senses.

586 Seminar in Psychological/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 Operant 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 prelmins 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

365 Problems of Alcohol Addiction and Abuse 3 Same as Psych 365.

366 Treatment Approaches in Alcohol Abuse/Alcoholism 3 Same as Psych 365.

368 Special Topics in Alcoholism 3 May be repeated for credit; cumulative maximum 6 hours. Prereq AlCSt 365, 366. By interview only. Selected current topics in alcoholism and alcohol-related problems.

444 Basic Helping Skills 2 (0-6) Same as Psych 444.

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

Professor and Department Chair, A. K. Cook; Professors, D. A. Dillman, R. Dunlap, E. P. Fiske, V. Geasa, K. Gray, R. McDaniel, D. Youmans; Associate Professors, R. A. Jussaume, J. L. Latzenhiser.

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: AgEc 320; Arch 202; ES/EP 335, 486; H D 205; NATRIS 312, 438; Pol S 316, 416; R S 391, 491; Soc 301, 331, 332, 424. Please contact the department at (509) 335-8623 or akcook@wsu.edu for more information.

Description of Courses

Rural Sociology

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.


R S 336 [S] Agriculture, Environment and Community 3 Prereq sophomore standing, completion of one social science course. Examines interdependencies between farming/ranching, the natural environment and human communities including perspectives on sustainable agriculture.

R S 391 Special Topics V 1-3 May be repeated for credit; cumulative maximum 3 hours. Prereq 3 credits in social sciences, sophomore standing. Topics in rural sociology or community studies.

R S 423 Fundamentals of Participatory Research 3 Prereq sophomore standing. Two social science courses. Principles/methods of involving community/interest group members in knowledge generation to understand local issues while building local capacity. Credit not granted for both R S 423 and 523.
Department of Rural Sociology

431 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.

435 Resolving Environmental Conflicts 4 (3-3) Prereq junior standing, two social science courses. Introduction to environmental conflict resolution via readings, discussions, simulation role plays and required papers; emphasis on interest-based approaches. Credit not granted for both RS 435 and 535.

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.

549 Special Problems V 1-3 May be repeated for credit. S. F. grading.

523 Fundamentals of Participatory Research 3 Prereq graduate standing. Graduate-level counterpart of RS 423; additional requirements. Credit not granted for both RS 441 and 541.

535 Resolving Environmental Conflicts 4 (3-3) Prereq graduate standing. Graduate-level counterpart of RS 423; additional requirements. Credit not granted for both RS 435 and 535.

541 Local Impacts of Global Commodity Systems 3 Prereq graduate standing. Graduate-level counterpart of RS 441; additional requirements. Credit not granted for both RS 441 and 541.

591 Graduate Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq graduate standing. Advanced topics in rural sociology or community studies.

600 Special Projects/Independent Study Variable credit. S. F. grading.

Department of Sociology


Courses in sociology are designed to provide the student with a better understanding of what makes people and groups of people behave the way they do. Sociology studies the groups people form, the behavior and interaction of these groups, traces their origin and growth, and analyzes the influence of group activities on individual members. Some knowledge of sociology is widely regarded as a useful supplement to the course work in most fields. The course of study for majors is flexible enough to incorporate a variety of individual interests, such as deviance and criminology, the family, social welfare and social policy, and environmental sociology.

Majors may select one of eight options for specialized study: I. General Sociology, II. Social Research and Data Analysis; III. Law and Social Control; IV. Society, Environment and Technology; V. Personnel and Human Relations; VI. Business and the Economy; VII. The Family as an Institution; VIII. Social Welfare: Social Casework or Community Organization. These options are described below. The undergraduate sociology major provides excellent preparation for careers in a variety of occupations, including public relations, teaching, positions in government, social agencies, and industry; or as a foundation for careers in professions such as architecture and community planning, counseling, law, medicine, the ministry, politics, or public administration.

The department offers courses of study leading to the degrees of Bachelor of Arts in Sociology, Master of Arts in Sociology, and Doctor of Philosophy.

Degree Program Requirements

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

Students must meet the graduation requirements of the College of Liberal Arts. They are encouraged to make a broad and balanced sampling of GER courses to meet the university’s goal for a general education, as well as to explore or confirm possible major and career interests.

Major

A bachelor’s degree in sociology requires a minimum of 31 hours in which students must maintain a C average. Students may choose one of the following eight options, depending upon personal interests. All majors (except those selecting the social welfare option) must complete five required core courses in sociology, as well as five required and/or elective courses in their chosen option areas. Soc 366 cannot be counted for sociology credit. In addition to the required courses and recommended electives in sociology, students must earn 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.

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<td>Soc 101</td>
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<td>3</td>
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<tr>
<td>Soc 320</td>
<td>Introduction to Social Research</td>
<td>3</td>
</tr>
<tr>
<td>Soc 321</td>
<td>Quantitative Techniques in Sociology I</td>
<td>4</td>
</tr>
<tr>
<td>Soc 410</td>
<td>Development of Social Theory</td>
<td>3</td>
</tr>
<tr>
<td>Soc 490</td>
<td>Senior Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

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 institutions. Examples might include community social action programs, correctional counseling, juvenile job programs and other youth programs, and programs aimed at alcoholism and drug abuse.

Sociology courses in this track examine theories, research and data concerning a variety of social problems and forms of deviant behavior, such as crime and juvenile delinquent gangs and youth subcultures, suicide, mental health, drug use and abuse, poverty, race and ethnic relations, and societal responses to these problems.

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 with an environmental mission; for example, local and state departments of ecology, community recycling programs, environmental action groups, consulting firms, and lobbying organizations.

The courses in this option, while focused on the environment and technology, are aimed at a balance between sociological theory, empirical research methods and substantive investigations.

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 Soc 350 (required); Soc 270, 343, 350, 351, 356, 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 needed 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 Soc 343 or 442 (required): Soc 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 backgrounds to seek jobs in social service agencies. It also provides a foundation for further study in the areas of family counseling or social work. The recommended sociology courses provide knowledge related to marriage, family dynamics, gender issues and societal changes and institutions.

Five recommended from the following, including Soc 150 and 351 (required): Soc 150, 340, 350, 351, 356, 384, 455.

**SOCIOCY DEGREE PROGRAM (121 HOURS)**

<table>
<thead>
<tr>
<th>Freshman Year</th>
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<tbody>
<tr>
<td>First Semester Hours</td>
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</tr>
<tr>
<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
<td>3</td>
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<tr>
<td>Math Proficiency [N] (GER)</td>
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<tr>
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<td>Elective</td>
<td>3</td>
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<tr>
<td>Second Semester Hours</td>
<td></td>
</tr>
<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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<tr>
<td>GenEd 111 [A] (GER)</td>
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<td>Science Elective (GER)</td>
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<tr>
<th>Sophomore Year</th>
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<tbody>
<tr>
<td>First Semester Hours</td>
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<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,LS,K] (GER)</td>
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<td>Biological Sciences [B] (GER)</td>
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<tr>
<td>Intercultural [I,G,K] (GER)</td>
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<td>Elective</td>
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**Second Semester Hours**

| Arts & Humanities [H,G] or Social Sciences [S,K] (GER) | 3 |
| Physical Sciences [P] (GER) | 4 |
| Soc 101 [S] (GER) | 3 |
| Soc Elective2 | 3 |
| Elective | 3 |

**Junior Year**

| First Semester Hours |  |
| Related Field Electives1 | 6 |
| Soc 320 | 3 |
| Soc Electives2 | 6 |
| Complete Writing Portfolio |  |
| Second Semester Hours |  |
| Related Field Electives1 | 6 |
| Soc 321 | 4 |
| Soc Elective2 | 3 |

**Senior Year**

| First Semester Hours |  |
| Related Field Electives1 | 9 |
| Soc 490 | 3 |
| Soc Elective2 | 3 |
| Second Semester Hours |  |
| Related Field Electives1 | 9 |
| Soc 410 | 3 |
| Tier III Capstone (GER) | 3 |

* This is a prototype of one of many ways to complete the Sociology Degree Program in four years. The program 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. Certain GER courses may also count as related fields, thus allowing the student more electives.


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:** Soc 190, 290, 390; 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:** Soc 190; 390 or 393; 396, 490, 492, 493, 495 or 496; Soc 101, 320, 321, 424, 433.

**SOCIAL WELFARE DEGREE PROGRAM (122 HOURS)**

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,LS,K] (GER)</td>
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<tr>
<td>Engl 101 [W] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<td>Social Sciences [S,K] (GER)</td>
<td>3</td>
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<td>Second Semester</td>
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<td>Arts &amp; Humanities [H,G] (GER)</td>
<td>3</td>
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<tr>
<td>Communication [C,W] (GER)</td>
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<td><strong>Sophomore Year</strong></td>
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<td>First Semester</td>
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<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,LS,K] (GER)</td>
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<tr>
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<td>Soc 320</td>
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<td>Soc 190</td>
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<tr>
<td><strong>Junior Year</strong></td>
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<td>First Semester</td>
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<tr>
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<td>Soc 321</td>
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Soc 351 (Soc 330)\textsuperscript{1} 3
S W 390 (or S W 393)\textsuperscript{2} 3

Complete Writing Portfolio

Second Semester

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<tbody>
<tr>
<td>Related Field Elective\textsuperscript{1}</td>
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<td>Soc 340 (Soc 424)\textsuperscript{1}</td>
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<tr>
<td>S W 395 or 396 (S W 396)\textsuperscript{2}</td>
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<tr>
<td>S W 495 or 496</td>
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Senior Year

First Semester

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<tr>
<td>S W 393 (Elective)\textsuperscript{2}</td>
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<td>S W 492</td>
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Second Semester

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\* This is a prototype of one of many ways to complete the Sociology Degree Program in four years. The program has built-in flexibility, and students should consult their advisors regarding other acceptable course plans.

\textsuperscript{1} Related fields courses are approved by the department and chosen/identified in consultation with the major advisor. At least 15 of the required 30 hours of related fields course work must be upper division. Certain GER courses may also count as related fields, thus allowing the student more electives.

\textsuperscript{2} Courses in parentheses apply to the Social Welfare/Community Organization option rather than the Social Welfare/Casework option.

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] [D] Introduction to Sociology 3 Human society and social behavior; effects of groups, organizations, cultures, and institutions.

Soc 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 150 [S] [D] 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.

Soc 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.

301 Rural Sociology 3 Comparison of rural and urban societies; rural social change and implications for the future.

302 [S] [D] Contemporary Masculinity and Men’s Issues 3 Same as 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 3 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, bureaucraty, gender/racial inequality, technological affects, work/family relations.

345 [S] [D] Sociology of Sport 3 Sociological study of sport in America.


351 [S] [D] The Family 3 Prereq Psych 105 or Soc 101. Family system and its interaction patterns; family life cycle from marriage through death; marital relations, divorce, sexuality, parenting crisis, abuse.

352 Sociology of Emotions 3 Prereq Psych 105 or Soc 101. Examination of emotions by surveying current theory and research; investigate emotions such as shame, guilt, empathy, jealousy, envy, and anger.

356 Sociology of Aging 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/F30). A g.p.a. of 2.0 is required for the minor.

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 [S] [D] 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/Alcoholism 3 Same as Psych 366.

367 Juvenile Justice and Corrections 3 Same as Crm J 365.

371 Small Group Analysis 3 Prereq Soc 101. Interpersonal relations in small groups; influence and social power.

372 The Sociology of Film 3 The social, economic, and political factors that influence film production and the impact of films on American culture.

373 [S] [D] Media, Culture and Society 3 The production of popular culture by media organizations and its effects on society.

375 Aspects of Sustainable Development 3 Same as Econ 375.


391 Special Topics in Sociology 1-3 May be repeated for credit; cumulative maximum 6 hours.

392 Special Topics 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 [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, impact 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] [D] Lesbian and Gay Studies 3 Same as W St 484.

490 [M] Senior Capstone 3 Prereq senior in Soc. Focused examination of advanced substantive topics in sociology, with opportunities for students to further develop and refine analytic and writing skills.

491 Advanced Special Topics V 1-3 May be repeated for credit; cumulative maximum 6 hours.

495 Internship V 1-6 May be repeated for credit; cumulative maximum 6 hours. Prereq social science major; by interview only. Work experience related to undergraduate major and career interests. S, F grading.

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

510 Development of Social Theory 3 Graduate-level counterpart of Soc 410; additional requirements. Credit not granted for both Soc 410 and 510.

511 Theories of Social Organization 3 Major theories of social organization in historical perspective.

512 Theory Construction and Formalization 3 Testing: formalization of theoretical systems; adaptation of general models to specific problems.

517 Seminar in Contemporary Sociological Theory 3 Recent developments in sociological theory, analysis, application and appraisal of specific theoretical systems.

519 International Development and Human Resources 3 Same as Anth 519.

520 Research Methods in Sociology 3 Methodology of social research at the professional level.

521 Regression Models 3 Prereq Soc 421. Simple and multiple regression, structural equation models, nonlinear applications, applications for discrete dependent variables.

522 Advanced Sociological Methodology 3 May be repeated for credit; cumulative maximum 12 hours. Prereq Soc 521. Scaling theory, sampling theory, experimental design, measurement of association, multivariate analysis, current methods and techniques.

523 Qualitative Methods Practicum 3 Prereq graduate standing. Introduction to qualitative research methods as used in social sciences; epistemological and methodological 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 Theory Research 3 Prereq Soc 520. Practical experience in design and implementation of telephone and mail surveys; participation in all aspects of conducting a survey.

530 Demography 3 Population studies; causes, effects, and measurement of changes in fertility, mortality, and migration; population estimation and projection.

531 Human Ecology 3 Ecosystem context of human life; change viewed ecologically; sociological use and misuse of ecological concepts; issues in theory and research.

532 Environmental Sociology 3 Societal-environmental interactions; impacts of human societies on the physical environment; environmental impacts on human behavior and social organization.

533 Social Impact Assessment 3 Sociology's contribution to environmental impact assessments; methods, contents, and contexts of assessing social impacts of proposed developments. Cooperative course taught by WSU, open to UI students (RRT 504).

534 Energy and Society 3 Energy and societal evolution; energy consumption patterns and quality of life; social impacts of energy shortages and alternative energy systems.

535 Technology and Society 3 Prereq graduate standing. Analysis of sociotechnical systems; effects of technology on society; the social shaping of technologies; cumulative 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 theoretical deviation behavior; new issues in the study of deviance.

561 Sociology of Law 3 Social factors affecting the development and maintenance of legal structures and the processes of administration of justice.

567 Seminar in Crime and Delinquency 3 Contemporary theory and research in crime and delinquency.

568 Adolescent Deviance 3 Contemporary sociological theory and research in adolescent deviance; action programs; and emerging issues.

571 Small Group Theory and Research 3 Theory and methods of small group research; types of groups, formation, and development of communication networks; socialization in group situations.

572 Socialization 3 Theories of childhood and adult socialization; personality development; symbolic interaction; learning; agents of socialization.

573 Group Processes 3 Sociological research and theory dealing with overt behavior in human interaction settings and its cognitive antecedents.

580 Sociology of Race Relations 3 Graduate-level counterpart of Soc 480; additional requirements. Credit not granted for both Soc 480 and 580.

590 Special Topics in Sociology 3 May be repeated for credit; cumulative maximum 9 hours.

591 The Sociology Profession 1 May be repeated for credit; cumulative maximum 2 hours. Requirements, operations, problems, and possibilities of the sociology profession. S, F grading.

592 Special Topics in Sociology 3 May be repeated for credit; cumulative maximum 9 hours.

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

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

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

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

Social Welfare and Public Policy

S W 190 Introduction of Social Work 3 Survey of practice; social workers and social service agencies, individual, group, and community practice.

390 Social Welfare History and Policy 3 Prereq S W 190. Current social welfare programs; income maintenance, health services, criminal justice, public housing, child welfare; historical development of social welfare programs.


395 Child Welfare 3 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 families.

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).

490 [M] Social Work Field Experience 10 or 15 Placement in social agency; knowledge in the helping relationship; decision making in applied settings. S, F grading.

492 Social Work Senior Seminar 1 Practicum preparation; practical advice about social work careers, resume writing, interviewing skills. S, F grading.

493 [M] Social Work Methods: Individual and Groups 3 Prereq S W 190. Social work values, ethical, technical aspects of interviewing and working with client systems; communication; group work skills.
Degree Program Requirements

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

At least 45 of the total hours required for the bachelor’s degree in this program must be in 300-400-level courses. Successful completion of SHS 475 and 478 fulfills the university requirement of two writing 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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<tr>
<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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<td>Biological Sciences [B] (GER)</td>
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<td>Communication [C, W] (GER)</td>
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<td>Engl 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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Second Semester

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<td>Art &amp; Humanities [H,G] (GER)</td>
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<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER)</td>
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<td>GenEd 111 [A] (GER)</td>
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<td>Physical Sciences [P] (GER)</td>
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Sophomore Year

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<tr>
<td>Biological [B] or Physical [P] Sciences (GER)</td>
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<td>SHS 205</td>
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<td>SHS 250</td>
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Second Semester

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<td>Stat 212 [N] (GER)</td>
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Junior Year

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<td>SHS 201</td>
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<td>SHS 371</td>
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<td>SHS 372</td>
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<td>SHS 378</td>
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<td>SHS Elective</td>
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Second Semester

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<td>SHS 472</td>
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<td>SHS 478 [M]</td>
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Senior Year

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<td>SHS 473</td>
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<td>SHS 475 [M]</td>
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<td>SHS 477</td>
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Second Semester

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<td>SHS 471</td>
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<td>SHS 480</td>
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<td>SHS 482</td>
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<tr>
<td>Tier III Capstone (GER)</td>
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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 the sounds and pattern of general American speech. S, F grading.

201 American Sign Language I 4 Instruction and practical training in sign language for communication with persons who are deaf; deaf culture; beginning conversation skills.

202 American Sign Language II 4 Prereq SHS 201. Sign language systems; vocabulary and skill development in signing and interpreting signs; intermediate conversation skills.

205 Introduction to Speech-Language Pathology and Audiology 3 Overview of deficits of speech, language, and hearing and the role of speech-language pathologist and the audiologist.

250 [S][D] Perspectives on Disability 3 Historical, international, socio-economic, 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.
Clinical Phonetics and Articulation Disorder 4 Clinical Phonetics and transcription; evaluation and treatment of articulatory disorders; delayed phonological acquisition; dysarthria; and dyspraxia.

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.

Speech and Hearing Sciences 3 Basis of acoustics, acoustic phonetics, psychoacoustics, and speech perception, and instrumentation for measurement of related phenomena.

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.

Prereq SHS 372, 472.


Speech-Language Pathology and Audiology in Schools 3 Prereq SHS 461 or c//. Therapy methods and procedures in speech-language pathology and audiology; state/federal laws affecting public school therapy.

Aural Rehabilitation 3 Prereq SHS 372. Principles and procedures in basic identification and assessment of hearing impairment; introduction to differential diagnosis of auditory pathologies.

Language and Learning Disability 3 Diagnoses and remediation of language and learning disabilities in individuals manifesting disorders in understanding or using spoken/written language.

Neuromotor Disorders 2 Prereq SHS 472. Prevention and management of neuromotor system.

Disphagia 3 Prereq SHS 377. Anatomy and physiology of swallowing; evaluation and treatment of swallowing disorders.

Language of Children with Hearing Impairment 3 Prereq SHS 377. Speech production and speech perception abilities and language development and intervention strategies with the hearing impaired.

Augmentative Communication 3 Prereq SHS 478, 482. Augmentative communication theory; implementation, training strategies, ongoing adjustments, and evaluating effectiveness.

Off-Campus Clinical Practice V 2 (0-6) to 6 (0-18) May be repeated for credit; cumulative maximum 9 hours. Prereq SHS 575. By interview only. Advanced clinical practice in off-campus setting; evaluation and treatment of speech, language, and hearing disorders.

Issues in Public School Service Delivery 3 Prereq c// in SHS 575. On-site and off-site clinic operations, policies, procedures; legal, ethical, and professional issues for schools and medical settings.

Speech-Language Pathology and Audiology 1-18 May be repeated for credit. Prereq SHS 471, 566, 575, by interview only. Advanced practicum in diagnosis of and therapy for communication disorders. S, F grading.

Seminar in Speech Pathology and Audiology 3 May be repeated for credit; cumulative maximum 9 hours. Exploration of ideas derived from current writings and research in speech pathology and audiology.

Hearing Aids 3 Prereq SHS 472, 477. Hearing aid technology, evaluation and fitting; programmable hearing aids; probe microphone measurement; prescriptive techniques.

Cleft Palate 3 Prereq SHS 377. Speech and voice problems associated with clefts of the lip and palate.


Advanced Clinical Practice V 2-6 to 6 (0-18) Prereq by interview only. SHS 567 or c//. May be repeated for credit; cumulative maximum 9 hours. Advanced clinical practice in evaluation and treatment of speech, language, and hearing disorders.

Voice Disorders 3 Prereq SHS 377. Functional and organic voice disorders resulting from various etiologies.


Professional Issues in Speech-Language Pathology and Audiology 3 May be repeated for credit; cumulative maximum 9 hours. Controversial philosophical and professional issues in the field of communication science and disorders.

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.

Clinical Perspectives 3 Theory and clinical experience designed to assist students in integrating course work into a clinical perspective.


Hearing Conservation in Industry and Society 3 Prereq SHS 472. Prevention and management of noise-induced hearing loss; interactions between noise and other ototraumatic agents and physical characteristics of the individual.

Pediatric Audiology 3 Prereq SHS 472. Developmental anatomy and physiology of the human auditory system; auditory behavior and pathologies in infants and children.

Speech-Language Pathology in the Medical Setting 2 Prereq by interview only. Report writing and charting, collaborating with the medical team, establishing prognosis and assessing efficacy of treatment, and third-party reimbursement.

Phonological Acquisition and Behavior 3 Prereq SHS 376. Current literature in articulatory development and deviancy; diagnosis and therapy.

Professional Development in Speech-Language Pathology and Audiology 1 or 2 Prereq SHS 476 or 570. Planning and implementing a program of continuing education in speech language pathology and audiology leading to the Continuing Level ESA Certificate from OSPI. S, F grading.

Special Topics in Speech and Hearing Sciences V 1-3 May be repeated for credit; cumulative maximum 9 hours. By interview only. Advanced study of specialized topics in speech and hearing sciences.
594 Advanced Audiometric Procedures with Special Populations 3 Prereq SHS 472. Differential diagnosis and clinical decision analysis for special populations; otocoustic emissions; vestibular testing.


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

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

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

Program in Statistics


Statistics is the science that deals with the collection, analysis, display, and interpretation of data. The 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 Statistical Methods for Engineers and Scientists 3 Same as Math 423.

428 Geostatistics 3 Prereq Stat 360. Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation. Cooperative course taught by UI (Stat 428), open to WSU students.

430 Statistical Methods in Engineering 3 Same as Math 430.

443 Applied Probability 3 Same as Math 443.

456 Introduction to Statistical Theory 3 Same as Math 456. Credit not granted for both Stat 456 and 556.

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

504 Special Topics 3 Prereq Stat 456. Cooperative course taught by UI (Stat 504), open to WSU students.

507 Experimental Design 3 Prereq Stat 512. Methods of constructing and analyzing designs for experimental investigations; analysis of designs with unequal subclass numbers; concepts of blocking randomization and replication; confounding in factorial experiments; incomplete block designs; response surface methodology. Cooperative course taught by UI (Stat 507), open to WSU students.

510 Topics in Probability and Statistics 3 Graduate-level counterpart of Stat 410; additional requirements. Credit not granted for both Stat 410 and 510.

511 Statistics for Economics 4 Same as Ag Ec 510.

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 basic nonparametric tests including their power and efficiency. Cooperative course taught by UI (Stat 514), open to WSU students.

515 Statistical Packages 3 (2-3) Same as Math 515.

516 Time Series 3 Same as Dec S 516. Cooperative course taught by WSU, open to UI students (Stat 539).

518 Techniques in Sampling 3 Same as Dec S 518.

519 Applied Multivariate Analysis 3 Same as Dec S 519. Cooperative course taught jointly by WSU and UI (Stat 521).

520 Statistical Analysis of Qualitative Data 3 Graduate-level counterpart of Stat 420; additional requirements. Credit not granted for both Stat 420 and 520. Cooperative course taught by WSU, open to UI students (Stat 520).

523 Statistical Methods for Engineers and Scientists 3 Prereq graduate standing. Graduate-level counterpart of Stat 423; additional requirements. Credit not granted for both Stat 423 and 523.

530 Applied Linear Models 3 Prereq Stat 412 or 430. The design and analysis of experiments by linear models.

531 Econometrics 3 Same as Econ 511. Cooperative course taught by WSU, open to UI students (Stat 531).

533 Theory of Linear Models 3 Prereq Math 420, Stat 430, or 456. Theoretical basis of linear regression and analysis of variance models; a unified approach based upon the generalized inverse. Cooperative course taught jointly by WSU and UI (Stat 533).

535 Regression Analysis 3 Prereq Stat 430 or 456. Conceptual development of regression; estimation, prediction, tests of hypotheses, variable selection, diagnostics, model validation, correlation, and non-linear regression. Cooperative course taught jointly by WSU and UI (Stat 510).


542 Applied Stochastic Models 3 Same as Dec S 542.

544 Applied Stochastic Processes 3 Prereq Stat 430 or 443. Poisson and Markov processes; queueing theory; auto-covariance; stationarity; power spectra; harmonic analysis; linear mean-square predictions. Cooperative course taught jointly by WSU and UI (Stat 544).

547 Statistical Pattern Recognition 3 Same as Cpt S 547.

548 Statistical Theory 1 3 Same as Math 568.

549 Statistical Theory II 3 Same as Math 569.

552 Advanced Econometrics 3 Same as Econ 512.

553 Advanced Agricultural Econometrics 3 Same as Ag Ec 512.

555 Statistical Ecology 3 Prereq Stat 443. Ecological stochastic models, population dynamics and genetics, sampling, spatial analysis, discrete/continuous distributions, birth-death processes, diffusion processes. Cooperative course taught by UI (Stat and WLF 555), open to WSU students.

556 Introduction to Statistical Theory 3 Prereq graduate standing. Graduate-level counterpart of Stat 456; additional requirements. Credit not granted for both Stat 456 and 556.

573 Reliability Theory 3 Same as Math 573.

586 Applied Multiple Time Series Analysis 3 Same as Dec S 586.

590 Statistical Consulting Practicum 1 or 2 May be repeated for credit; cumulative maximum 6 hours. Prereq three courses in Stat including one methods course or by interview only. Theory and practice of statistical consulting, participation in consulting session. S, F grading.

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

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

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

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Preparation for Graduate Study

As preparation for work toward an advanced degree in statistics, a student should have completed one or more courses in statistical methods, a course in probability and statistical theory, and mathematics through multivariable calculus and linear algebra. Advanced calculus is also strongly recommended. More important than the above specific courses is an indication of the student’s interest and ability in statistics. Virtually all U.S. graduate programs provide adequate opportunity to take prerequisite courses after admission to graduate school.

Department of Teaching and Learning


The Department of Teaching and Learning prepares teachers and other specialists for schools and colleges. Its programs are accredited by the National Council for Accreditation of Teacher Education (NCATE), the Northwest Association of Schools and Colleges and the State Board of Education. Courses of study are offered for the Bachelor of Arts in Education, Master of Arts in Education, Master of Education, Master in Teaching, Doctor of Education, Doctor of Philosophy, and for teacher certification.

The mission of the College of Education, through its constructivist model of learning, is to educate effective practitioners and scholars who possess the leadership and problem-solving skills necessary to meet the needs of citizens of the 21st century. The constructivist approach, in contrast to approaches that view the role 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. Please note that not all changes to endorsement and teacher certification requirements that will be effective fall 2000 are represented in this catalog. Please consult the department. 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. Fail, pass 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-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), health/fitness, history, family and consumer sciences, mathematics, music (general, choral, instrumental), physics, science, social studies, and special education. All candidates endorsed for single subjects may be assigned to teach in grades 5-12 except those endorsed in foreign languages, health/fitness, music or special education who are authorized to teach in grades P-12. Specific course requirements for each primary endorsement are listed under 5-12 Certificate Programs and P-12 Certificate Programs at the end of this section.

To enhance employment opportunities, certificate candidates may wish to teach in a subordinate area by completing supporting endorsement requirements. Supporting endorsements are offered in bilingual education, biology, chemistry, drama, early childhood education, earth science, English as a second language, foreign languages (French, German, Japanese, Russian, Spanish), mathematics, physics, and reading.

Admission to Teacher Preparation

Applicants who meet the minimum requirements are eligible for consideration, but not assured admission. Enrollment is limited and admission competitive. Admission deadlines are October 31 and March 31 with admission effective the following term. Candidates must complete formal admission procedures and be admitted to teacher preparation prior to taking any professional education course work beyond T & L 300, 301, 315 or 317. The following minimum criteria must be met for consideration for admission.

Minimum Criteria

1. Completion, within the last three years, of 80 hours of supervised work with children or youth in a diverse setting.
2. ACT or SAT score which meets current state requirements. (Inquire at Teacher Education Student Services.) Those holding a bachelor’s degree and those with two years of successful college work in which competency in oral and written communication, math and reading has been demonstrated are exempt.
3. Completion of at least 30 semester hours of course work.
4. Minimum cumulative g.p.a. of 2.50.
5. Engl 201 or equivalent composition course with a minimum grade of C.
6. ComSt 102 or equivalent public speaking course with a minimum grade of C.
7. T & L 300.
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 require additional criteria for teaching option candidates.

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.
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 (2 or 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.

Masters In Teaching (MIT)

The MIT is a full-time, 15-month, field-based program leading to K-8 certification and a master's degree. Applicants must have a bachelor's degree from an accredited institution with a minimum 3.0 g.p.a. in their last 60 semester hours of graded coursework or 12 hours of graduate graded course work. In addition, the following criteria are considerations for admission: 1) documentation of 80 hours work with youth; 2) minimum combined GRE general test score of 1200; 3) letters of recommendation; 4) quality and content of personal statement; and 5) course profile. The application deadline is January 15 for a 25-student cohort which begins the two-year program of study each fall term.


Bachelor of Arts

Applicants to the bachelor of arts program with K-8 elementary certification are expected to have completed an Associate of Arts transfer degree from a community college or have at least 60 semester hours of study which includes the following program prerequisites: ComSt 102, Engl 201, Math 251 and 252, and at least two of the four required science courses all graded C or higher. A minimum cumulative g.p.a. of 2.5 is required for consideration for admission.

WSU Vancouver Teacher Certification

Inquiries and requests for application materials should be addressed to WSU Vancouver, Office of Admissions, 14024 NE Salmon Creek Avenue, Vancouver WA 98686, (360) 546-9788, or by email at admissions@vancouver.wsu.edu.

WSU Vancouver seeks to prepare the best possible teachers and therefore seeks highly qualified individuals for admission to the MIT and secondary certification programs. Admission to, or continued enrollment in, a teacher preparation program may be denied a candidate on the basis or review by faculty.

Field experiences with accompanying seminars allow the inter-cooperating partners to engage in ongoing dialogue with university field personnel throughout the year and are coordinated with academic work.

In addition to the teacher certification options described below, WSU Vancouver offers a Master of Education (Ed.M.) degree program for educators who already have a teaching certificate. Course work is also offered toward endorsements in special education, English as a second language, and reading which can be applied to the master's program.

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) 397-2366.

T & L 325, Beginning Experience (1 credit) Students completing this certification degree program leading to K-8 certification and a master’s degree. Applicants must have a bachelor’s degree from an accredited institution with a minimum 3.0 g.p.a. in their last 60 semester hours of graded coursework, and submit the MIT application portfolio which is available from the Department of Teaching and Learning. The degree will be bachelor of arts. The student teaching the certificate candidate will: 1) make application to teacher preparation requirements. This course schedule does not include a supporting endorsement that may be recommended by school districts.

Secondary Certification

Candidates may choose post-baccalaureate teacher certification only or a master's degree with certification in the areas of biology, English, history, or social studies. All applicants must meet subject matter endorsement requirements in one of the four content areas. Content deficiencies will be determined through a transcript evaluation which is required prior to application to the program. 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

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

Elementary Education (121 hours)

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.

The requirement for a supporting endorsement in early childhood is 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)

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

First Semester Hours
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Intercultural [I, G, K] (GER) 3
Math 101, if necessary, or Elective 3
Tier I Science [Q] (GER) 3 or 4

Second Semester Hours
Biological Sciences [B] (GER) 3 or 4
ComSt 102 [C] (GER) 3
GenEd 111 [A] (GER) 3
Mus 153, if necessary 3
Psych 105 [S] (GER) 3
T & L 300 1

Sophomore Year

First Semester Hours
Arts & Humanities [H,G] (GER) 3
Biological [B] or Physical [P] Sciences (GER) 3 or 4
Engl 201 [W], 301 [W], or 302 [W] (GER)2 3
H D 101 [S] (GER) 3
Math 2512 3
Certify Major

Second Semester Hours
Math 252 [N] (GER) 3
Physical Sciences [P] (GER) 3 or 4
T & L 301 2
T & L 330 3
T & L 390 3

Junior Year

First Semester Hours
Sp Ed 420 3
T & L 307, 320, and 3853 9
T & L 315 3
T & L 400 1
Complete Writing Portfolio

Second Semester Hours
Mus 388 2
T & L 306 [M], 352, and 3714 9
T & L 483 3
T & L 400 1

Senior Year

First Semester Hours
EdPsy 401 2
T & L 310 [M] 2
T & L 403 2
T & L 445 2
Tier III Capstone (GER) 3
Elective 1

Second Semester Hours
T & L 415 16

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.

1 Engls 201 and Math 251 must be taken by the end of the third semester for certification.

1 Concurrent enrollment required.

5-12 Certifi cate 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 105, T & L 300, 301, 302, 303, 317, 328, 400, 404, 415, 445, 478) 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 prerequisites and admission to teacher preparation requirements.

Freshman Year

First Semester Hours
Engl 101 [W] (GER) 3
GenEd 110 [A] (GER) 3
Math Proficiency [N] (GER) 3
Psych 105 [S] (GER) 3
Tier I Science [Q] 3

Second Semester Hours
Arts & Humanities [H,G] (GER) 3
Biological Sciences [B] (GER) 3 or 4
ComSt 102 [C] (GER) 3
GenEd 111 [A] (GER) 3
Primary Endorsement/Major2 3

Sophomore Year

First Semester Hours
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) 3
Engl 201 [W], 301 [W], or 302 [W] (GER)2 3
Physical Sciences [P] (GER)3 3
Primary Endorsement/Major2 6
T & L 300 1

Second Semester Hours
Intercultural [I,G,K] (GER) 3
Primary Endorsement/Major2 12
T & L 301 3
Certify Major
Certify In Teaching & Learning
Three-Week Field Experience (317)

Junior Year

First Semester Hours
Primary Endorsement/Major2 V
Supporting Endorsement3 3
T & L 302 2
T & L 303 2
T & L 317 2
Complete Writing Portfolio

Second Semester Hours
EdPsy 402 2
Primary Endorsement/Major2 V
Supporting Endorsement3 V
T & L 400 2

Senior Year

First Semester Hours
Primary Endorsement/Major2 V
Supporting Endorsement3 3
T & L 328 2
T & L 478 2
Tier III Capstone (GER) 3

Second Semester Hours
Supporting Endorsement3 V
T & L 328 2
T & L 478 2

1 Students may substitute three credits of Biol and four credits of Phys S.
2 Credit hours needed for the primary endorsement are from 30-74, depending on the major.
3 Strongly recommended.

Agriculture (subject to change fall 2020)

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 (subject to change fall 2020)

Primary Endorsement (35 hours): BC/BP 364; Biol 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): Biol 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 Astr 135, 390, ES/RP 174, Ph S 430.

Supporting Endorsement (22 hours): Astr 135, 390, ES/RP 174; Geol 102, 206, 210, Ph S 430; plus one from Geol 201, 304, 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, 346, 380 or 381 (382 may be taken if writers-of-color course is pre-1916). Professional Courses: One from Engl 255, 256, 354, 443, 458, Anth 256, 350, 355, or 450; Engl 323; 324. Concentration: 6 hours approved upper-division Engl; Engl 495 or approved capstone; creative writing course strongly recommended if not included in concentration.

English/Language Arts (subject to change fall 2000)

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
of Teaching and Learning

102 or 302; 251 or 351; 324 or 334; 185, 235, 385, 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, HD 201, 202, 203, 204, 302, 320, 350, 406, 407, 409, 410, 479, 480.

History (subject to change fall 2000)

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 Europe, 6 hours of other fields (Africa, Asia, Canada, Latin America). Required courses: Hist 101, 102, 110, 111, 300; 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 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): Astr 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 (subject to change fall 2000)

Primary Endorsement (58 or 59 hours): Biol 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 201; 102 or 202. In addition to the above requirements, the student must complete one option endorsement listed below:

Earth Science: Astr 135, 390, ES/RP 174, Geol 206; 310, 300 or 340, 350.
Degree will be General Studies, Bachelor of Science, with an option in Physical Science.

Social Studies (subject to change fall 2000)

Primary Endorsement (57 hours): Lower-division (30 hours): Anth 101; Econ 101 or 102; Hist 101, 102, 110, 111; one from Hist 230, 231, 270, 272, 273, 275; Pol S 101; Soc 101; one from CAC 101, 111, 131, 151, 171, W St 200. Upper-division (27 hours): 12 hours of history to include Hist 422; 12 hours approved 300-400-level social science electives (Anth, Econ, Pol S, Psych, Soc); 3 hours approved seminar (which may double-count from 24 hours above); Hist 480.

P-12 CERTIFICATE PROGRAMS

Candidates for P-12 certificates shall declare a major with the subject-matter department or the Department
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 (subject to change fall 2000)
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 K-8, P-3, 5-12, or 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 2 Prereq Psych 105. T & L 300. Reflective inquiry about human learning, development, diversity, and individual differences, examination of implications for teaching and education reform.

302 Secondary School Curriculum and Content Literacy Development 2 (0-4) Prereq T & L 301, certified education major. Development and implementation of curriculum and content literacy, including course outlines and lesson and unit plans.

303 Secondary School Instruction and Content Literacy Methods 2 Prereq certified education major, T & L 301, 317 or 318. Materials and general methods of instruction and content literacy for secondary teachers.

304 Introduction to Middle Level Education 2 Prereq T & L 300. Study of adolescents; middle level organization and instructional strategies including field component at Lincoln Middle School.


308 Teaching Writing K-12 2 Prereq admission to teacher prep program; T & L 301 or c/f; T & L 300. For preservice teachers. Improving writing skills; preparing effective writing lessons.

310 [M] Classroom Management 2 Prereq certified education major, T & L 301; 315 or 316. Strategies for developing positive and supportive classroom learning environments.

315 Elementary Practicum and Seminar 3 (0-9) Prereq T & L 301. Classroom experience prior to student teaching providing observation, reflection and gradual classroom involvement and teaching responsibility. S, F grading.


319 Literacy Practicum 1 (0-3) Practicum for students serving as literacy tutors in schools and agencies; methodologies, at-risk issues and community-school partnerships. S, F grading.

320 Elementary Reading Methods 3 Prereq certified education major, T & L 301, c/f in 307, c/f 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; concepts, issues, approaches to educating students in a diverse society.

333 Introduction to English as a Second Language (ESL) 3 Foundations of ESL with attention to basic concepts of second language processing in educational settings.

335 Bilingual Bicultural Education 3 Same as CAC 356.

339 Communicating in Diverse Classrooms 3 Selected topics dealing with linguistic diversity, cross-cultural communication, language development and language use.

352 Teaching Elementary Mathematics 3 Prereq certified education major. Math 251, 252; T & L 301, c/f in T & L 306, c/f in 371. 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, c/f in T & L 301, c/f in 306, c/f 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/f in T & L 307, c/f in 320. Teaching methods and materials in elementary and middle school social studies.

390 Integrating Fine Arts into K-8 Curriculum 3 Prereq T & L 301 or c/f. Integrating the range of fine arts (art, music, dance, drama) into K-8 curriculum; designed for preservice and inservice general K-8 teachers.

400 Advanced Field Experience V 1 (0-3) to 6 (0-18) May be repeated for credit; cumulative maximum 6 hours. Prereq certified education major; T & L 315.

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 Social Foundation of Curriculum Elementary 2 or 3 Prereq certified education major; T & L 315. The school; historical, and philosophical foundations of education; school law.

404 Social Foundations of Curriculum Secondary 2 Prereq certified education major; T & L 317. The school; historical, and philosophical foundations of education; school law.

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 6 (1-15) to 16 (1-45) Prereq certified education major, program completion, WSP/FBI/DSI 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 Educational Technology Used in Schools 2 (1-3) Prereq certified education major; T & L 301, 302, 303, 317. Consideration of all technologies in schools, applications for their use, some production techniques and instructional methodologies.

450 Content Literacy in Middle and Secondary Schools 2 or 3 Prereq admission to teacher prep program; T & L 300, T & L 301 or c/f; Reading and writing in content areas, grades 4-12; integrating service learning and community of learners approaches in teaching literacy skills.
452 Content Area Reading and Study Skills Practicum V 1-3 May be repeated for credit; cumulative maximum 3 hours. Prereq T & L 320 or 450. Development and delivery of vocabulary, comprehension, and study skills.

455 Educational Uses of Microcomputers 2 or 3 Prereq admission to teacher prep program; T & L 300; T & L 301 or graduate standing. Types and functions of educational software, evaluation criteria, designing instructional programs and classroom considerations.

462/463 Corrective Reading in the Classroom 2 Prereq admission to teacher prep program; T & L 300, 301. Investigation, formulation, application of informal and formal assessment for classroom instruction; specific needs of children with reading difficulties.

467 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).

478 Family, School, and Community Collaboration 2 Prereq certified education major; T & L 302, 303. Examination of strategies to connect school, family, and community to improve learning and development.

480 Multicultural Education in a Global Society 3 Multicultural and multilingual education from a global perspective; development of multicultural curriculum. Credit not granted for more than one of T & L 480, 580, 582.

483 Integrating Health and Fitness into K-8 Curriculum 3 Integrating the range of health and fitness concepts into K-8 curriculum; designed for preservice and inservice general K-8 teachers.

487 Global Geography 3 Prereq declared major; open to non-education majors. World geography as a global perspective; education in the contemporary world: the interaction between human societies and the natural environment.

490 Instructional Practicum V 1 (0-3) to 3 (0-9) May be repeated for credit; cumulative maximum 6 hours. Prereq one course in T & L 490, 554 or by interview only. Work with students from diverse linguistic and cultural backgrounds in educational settings.

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 307. Applying research-based assumptions to teaching language arts in a multicultural setting.

510 Theoretical Foundations for the Schooling 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 512.

513 Seminar in Middle School Education 3 Prereq teaching experience, Curriculum patterns and recent research regarding instruction and materials in the contemporary middle school.

514 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.

518 Integrating Technology into the Curriculum 3 Examination and articulation of the potential for new technologies to expand learning opportunities.

520 Topics in Special Student Populations V 1-4 May be repeated for credit; cumulative maximum 6 hours. For K-12 teachers. Knowledge of special student populations and guidance in developing appropriate curricula. Cooperative course taught jointly by WSU and UI (EDTE 504).

521 Topics in Education V 1-4 May be repeated for credit; cumulative maximum 6 hours. Recent research, 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, and secondary classrooms.

526 Research in Multicultural Education 3 Prereq T & L 515 or teaching experience. Research and instructional practices focusing on multicultural education.

527 Seminar in Teacher Education Instruction 1 May be repeated for credit; cumulative maximum 4 hours. Teacher preparation program components and rationale, university teaching strategies, and evaluation methods. S, F grading.

528 Content Area Reading Instruction: Theory and Practice 3 For teachers, supervisors, and administrators in elementary, middle, and secondary schools; influence of research on the design of reading strategies.

530 Innovations in Reading 2 Graduate-level counterpart of T & L 431; additional requirements. Credit not granted for both T & L 431 and 530.

532 Content Area Reading Curriculum 2 Prereq T & L 320 or teaching experience. Graduate-level counterpart of T & L 432; additional requirements. Credit not granted for both T & L 432 and 532.

534 Study Skills and Content Area Instruction 2 or 3 Research and practices related to time management, concentration and memory, note-taking, listening, comprehension and thinking skills; applications in subject-matter instruction.

537 Seminar in Language, Literacy, and Culture 2 or 3 Prereq T & L 411, graduate standing. Interrelationships between schools, literacy, and student cultural background.

538 Writing Across the Curriculum 3 Writing for learning at grade levels K-12.

539 Innovations in Language Arts 3 Prereq T & L 303, 320, or teaching experience. The most recent developments in language arts instruction for preschool and in-service teachers K-12.

540 Elementary School Social Studies 3 Prereq teaching experience. Elementary structures of various social sciences; research findings related to instruction; classroom applications and materials.


545 Oral Language Development: Roots of Literacy 3 Prereq teaching experience. Research on children’s oral language development; applications to elementary school reading and writing.

546 Teaching Written Expression in Elementary School 3 Prereq teaching experience. Research on children’s written language development; application to elementary school classroom.

547 Teaching Folk Literature to Children and Adolescents 3 Prereq T & L 307 or teaching experience. Folk literature as a genre in child and adolescent literature; curriculum applications; reading, language development, social studies, creative expression.

548 Teaching Adolescent Literature 3 Prereq T & L 307 or teaching experience. Evaluating, selecting, and using literature for middle school and teenage students.

549 Communicating in a Multilingual Society 3 Prereq T & L 333, 335 or graduate standing. Study of language in social and educational context and its relation to cultural and linguistic diversity.

551 Psychology of Reading 2 or 3 Prereq T & L 320 or 450/451; teaching experience. Psychological, perceptual, motivational, developmental and physiological aspects of reading.

552 Literacy Development I 3 Review of current research and approaches to instruction in the development of literacy in elementary and middle grades.

553 Diagnosis and Treatment of Reading Disability 4 (3-3) Prereq T & L 320/321 or 450/451. Remedial techniques for experienced teachers, remedial reading teachers, and reading consultants; causes of disability, testing, diagnosis, and remediation; tutoring.

554 Elementary School Reading 2 Theory and strategies of teaching reading in elementary school.

555 Seminar in Literacy Development 3 May be repeated for credit; cumulative maximum 6 hours. Current and historical research in reading/language arts, infancy through college and adult years; papers presented by faculty, invited speakers, and students.

556 Literacy Development II 3 Review of current research and approaches to instruction in the development of literacy in elementary and middle grades.

557 Research in Reading 2 Graduate-level counterpart of T & L 551; teaching experience. Reading research, theoretical and applied, related to the teaching of reading.
Improving Comprehension through Literature 3 Prereq teaching experience. Key theoretical concepts and their implications for improved comprehension instruction, using children's literature.

Research in Teaching 3 May be repeated for credit; cumulative maximum 6 hours. Prereq teaching experience. Recent developments in research on teaching: both quantitative and qualitative research methodologies emphasized.

Elementary School Mathematics 3 Prereq T & L 352; Math 252; teaching experience. Research on curriculum and instruction issues in elementary school mathematics.


Seminar in Precollege Mathematics Education 3 Prereq T & L 542 or 562. May be repeated for credit; cumulative maximum 6 hours. Research on curriculum and instruction in mathematics education in grades K-12.

Elementary School Mathematics Methods 3 Introduction to research, theory, and methods of teaching K-8 mathematics; emphasis on integrating computer and technology into teaching.

Elementary School Science 3 Prereq T & L 371; teaching experience. Theories and research underlying science programs with classroom implications.

Elementary School Science Methods 3 Theoretical base to design and implement appropriate standards-based elementary science instruction.

Children's Literature and Hands-On Science 3 Prereq graduate standing. Students learn how to bring together language arts and science curriculum to instill in children a curiosity about the world around them.

Science for All: An Individual and Multicultural Perspective 3 Prereq teaching experience. Implications of cultural and individual diversity for understanding western scientific and mathematical thought; an activity-based, educational perspective.

The At-Risk Learner 2 Strategies for working with at-risk students.

School and Community Interventions for At-Risk Students 2 How schools and communities work together to meet the at-risk challenge.

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.

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.

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.

Issues in At-risk Education 2 or 3 School and community resources to assist at-risk students and families.

Action Research: Teachers as Research 3 Prereq teaching experience. Theoretical concepts, research, issues, models, and strategies for implementation of action research.

Inter action V 2 or 3 May be repeated for credit; cumulative maximum 12 hours. By interview only. Internship in professional positions. S, F grading.

Pre-intership and Seminar 2 (1-3) Instructional practice in diverse classroom settings and reflection on that practice. S, F grading.

Art and Music Education 2 Instruction covering the theory and classroom practice of art and music.


Topics in In-Service Education V 1-3 May be repeated for credit; cumulative maximum 9 hours. Graduate-level counterpart of T & L 497; additional requirements. Credit not granted for both T & L 497 and 597. S, F grading.

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.

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/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/c in Sp Ed 490 for 2 credits, or graduate standing. Methods of assessment, curriculum development, 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 school 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/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.

478 Career Services and Programs for Persons with Disabilities 3 Same as CoPsy 478.

490 Practicum in Special Education V 1-3 May be repeated for credit; cumulative maximum 8 hours. Supervised field experience in special education. S, F grading.

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

501 Teaching Students with Disabilities 3 Prereq c/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.

520 Teaching in Inclusive Classrooms 3 Graduate-level counterpart of Sp Ed 420; additional requirements. Credit not granted for both Sp Ed 420 and 520.

521 Inclusion Strategies for Special Education Teachers 3 Prereq Sp Ed 501. Graduate-level counterpart of Sp Ed 421; additional requirements. Credit not granted for both Sp Ed 421 and 521.

522 Topics in Special Education V 1-4 May be repeated for credit; cumulative maximum 8 hours. Recent research developments, issues, and applications in selected areas of special education.

540 Methods in Intensive Educational Supports 3 Graduate-level counterpart of Sp Ed 440; additional requirements. Credit not granted for both Sp Ed 440 and 540.

578 Career Services and Programs for Persons with Disabilities 3 Same as CoPsy 578.

590 Practicum in Special Education V 1-4 May be repeated for credit; cumulative maximum 8 hours. Supervised experiences in application of theories and practices in special education. S, F grading.

597 Special Education Internship V 2-4 May be repeated for credit; cumulative maximum 6 hours. Supervised internship experience in domestic and international settings. S, F grading.

600 Special Projects or Independent Study Variable credit. S, F grading.
College of Veterinary Medicine

The College of Veterinary Medicine offers courses of study leading to the degrees of Doctor of Veterinary Medicine, Bachelor of Science in Veterinary Science, Master of Science in Veterinary Science, and Doctor of Philosophy. Additional information, including requirements for admission, is contained in the general information section of this catalog. The College of Veterinary Medicine at Washington State University is accredited by the American Veterinary Medical Association.

The following program is an outline of the minimum requirements necessary for application to professional study in the College of Veterinary Medicine.

PREVETERINARY REQUIREMENTS

<table>
<thead>
<tr>
<th>Hours</th>
<th>1. Arts and Humanities</th>
<th>3-6</th>
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<tr>
<td></td>
<td>2. Communication Proficiency</td>
<td>6</td>
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<td>(3 hours must be in written communications)</td>
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<td>3. Intercultural Studies</td>
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<td></td>
<td>4. Social Sciences</td>
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<td></td>
<td>5. World Civilizations</td>
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<td></td>
<td>6. Math Proficiency</td>
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<td>7. Writing Portfolio</td>
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</table>

Courses to meet the above requirements must be selected from the list under the General Education Requirements for Graduation section of this catalog.

8. Physical and Biological Sciences 33-35

Except under unusual circumstances applicants will be expected to have completed courses as indicated in each of the following: chemistry including organic and biochemistry; mathematics; physics; zoology or general biology; genetics.

9. Electives

Totals Hours Required 60

BACHELOR OF SCIENCE DEGREE IN VETERINARY SCIENCE

The Bachelor of Science degree in Veterinary Science combines credits earned in both the preprofessional and professional programs. The degree is available only to students who have been admitted to the professional program. This degree was designed to benefit veterinary medical students in obtaining employment, applying for scholarships, and qualifying for graduate-level course enrollments. A minimum of 120 semester hours is required for the degree. The minimum basic requirements are:

General Education Requirements (see above)

60 additional hours of acceptable university credit of which 34 hours must be 500-level or above courses in the professional curriculum of the College of Veterinary Medicine

Total semester hours 120

Degree Program Requirements

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

PROFESSIONAL CURRICULUM

The professional curriculum for the Doctor of Veterinary Medicine degree is outlined below. A total of 147 semester hours is required for graduation. All courses required in the professional program are 500P-600P-level courses.

First Year

<table>
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<tr>
<th>Hours</th>
<th>First Semester</th>
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<tr>
<td></td>
<td>V M 500P</td>
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<td>V M 510P</td>
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<td>V M 511P</td>
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<td>V M 568P</td>
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Second Semester

| Hours | V M 512P |
|-------| 3 |
|       | V M 520P |
|       | 5 |
|       | V M 521P |
|       | 3 |
|       | V M 534P |
|       | 3 |
|       | V M 545P |
|       | 3 |

Second Year

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<td>V M 522P</td>
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<td>V M 536P</td>
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<td>V M 546P</td>
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<td>V M 589P</td>
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Second Semester

| Hours | V M 523P |
|-------| 4 |
|       | V M 537P |
|       | 4 |
|       | V M 543P |
|       | 2 |
|       | V M 551P |
|       | 4 |
|       | V M 587P |
|       | 3 |
|       | V M 588P |
|       | 3 |

Third Year

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<th>Hours</th>
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<td>V M 543P</td>
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<td>V M 552P</td>
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<td>V M 553P</td>
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<td>V M 554P or 555P</td>
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<td>V M 569P</td>
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<td>V M 585P</td>
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Second Semester

| Hours | V M 570P |
|-------| 6 |
|       | V M 571P |
|       | 4 |
|       | V M 572P |
|       | 2 |
|       | V M 590P |
|       | 3 |

Electives

Fourth Year

The fourth year begins immediately after the end of the spring semester of the third year (May) and continues for 12 consecutive months. Fourth-year professional students are required to enroll in course work for a minimum of 44 weeks of their final year. All students must participate in mandatory clinical rotations in the large- and small-animal clinics, including emergency services and anesthesia. In addition, each student must select a species-oriented curricular area of emphasis for the fourth year. Each area of emphasis has its own course requirements and elective opportunities. All students must prepare and present a senior paper under faculty supervision.

Honors Program in Veterinary Medicine for Selected Students

A program for admission of highly selected and academically qualified students to the Washington State University College of Veterinary Medicine has been established. This program admits students directly to the college upon completion of one year of undergraduate work at WSU. This is a seven-year program leading to the Doctor of Veterinary Medicine degree after satisfactory completion of the curriculum. It consists of three years of a unique undergraduate preprofessional education and the four-year professional program. The first three years of this program are a combination of Honors College courses and regular university classes which fulfill the preveterinary requirements. The last four years are the traditional Doctor of Veterinary Medicine program plus the completion of an honors thesis. Applicants should identify themselves to the Honors College as soon as students decide to enter WSU, because number of positions is limited.

Joint Program in Animal Science and Veterinary Medicine

See Department of Animal Sciences.

Preparation for Graduate Study

Students meeting the requirements of the Graduate School and having the Doctor of Veterinary Medicine degree or a bachelor’s degree in allied fields may take work leading to an advanced degree in the College of Veterinary Medicine. Students without the DVM degree will take courses in preclinical fields (anatomy, microbiology, pathology, physiology, parasitology, and pharmacology). The undergraduate preparation should include two semesters of organic chemistry or one semester of organic chemistry and one semester of physiological chemistry; one year of general physics and one semester of college algebra; one semester of comparative vertebrate anatomy and one semester of physiology.

A combined degree program is available which allows simultaneous pursuit of both DVM and graduate degrees. Admission to the College of Veterinary Medicine and to the Graduate School are prerequisite for entry into the combined degree program.

Department of Veterinary and Comparative Anatomy, Pharmacology, and Physiology


Description of Courses

Veterinary Anatomy


244
V M 512P. Microscopic and gross anatomy of selected organ systems.

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

513 Advanced Neuroanatomy 4 Prereq anatomy or physiology course that included neuroanatomy. Advanced gross and microscopic anatomy of the mammalian central nervous system. Cooperative course taught by WSU, open to UI students (Zool 513).

592 Seminar 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592).

600 Special Projects or Independent Study Variable credit. For MS in veterinary science only. S, F grading.

700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

Veterinary Medicine

V M 350Skeletal Preparation 1 May be repeated for credit; cumulative maximum 3 hours. Technique of skeletal preparation is mastered by undertaking and completing project. Skeleton becomes property of student. S, F grading.

508P Research Orientation and Resource 1 Prereq student in veterinary research track. Resources and important issues for identifying and developing a focused area of scholarly activity in biomedical research. S, F grading.

509P Research Issues, Ethics, and Literacy 1 May be repeated for credit; cumulative maximum 3 hours. Prereq student in veterinary research track. Philosophy and history of methodological, ethical and political issues relevant to biomedical research using selected monographs and essays. S, F grading.

510PVeterinary Microscopic Anatomy 5 (3-6) Prereq first year in Vet Med or graduate student. Microscopic functional morphology of the cell, tissues, and selected organ systems of domestic animals.

511PVeterinary 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; development of organ system of domestic animals.

512PVeterinary Anatomy II 3 (0-9) Prereq V M 511P. Detailed macroscopic functional morphology of domestic animals.

513PVeterinary 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.

520PVeterinary 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.

522PPharmacology/Toxicology I 4 Prereq third year in Vet Med. Pharmacology and toxicology of the systems of domestic animals.

523PPharmacology/Toxicology II 4 (3-3) Prereq V M 522P. Pharmacology and toxicology of the systems of domestic animals. Continuation of V M 522P.

525PAnimal 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.

526PDomestic and Exotic Animal Behavior 2 (1-3) Prereq by interview only. Advanced study of animal behavior, emphasizing difference between exotic and domestic animal behavior. Cooperative course taught by WSU, open to UI students (Zool 526).

527P Clinical Animal Behavior V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq by interview only. Participation in the treatment of animals with behavioral problems and in animal behavior training classes for clients and their animals.

Veterinary Pharmacology and Toxicology, and Physiology

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

501Fundamentals of Graduate Research in the Life Sciences 1 Prereq by permission only. Seminars/discussions of practical issues confronting life scientists with emphasis and overviews of disciplines related to biomedical research. S, F grading.

505Design and Analysis of Biomedical Experiments 4 Prereq Math 107, statistics course. Design of experiments with application to clinical and basic biomedical research; choosing, applying, and evaluating appropriate data analysis methods.

521 Cardiorespiratory Systems 3 (2-3) A system and quantitative treatment of physiological processes in the heart, blood vessels, and lungs.

525 Special Topics in Veterinary and Comparative Pharmacology 1 (0-3) Prereq V M 522P. Practical veterinary pharmacology techniques and clinical applications.

528Behavioral Mechanisms in Physiology 3 Examination of the physiological transduction mechanism that enables animals to interact behaviorally with their environment. Cooperative course taught by WSU, open to UI students (Zool 528).

529Cellular and Molecular Neurobiology 4 Prereq biochem course. Basic biochemical processes in the nervous system and their significance for normal and abnormal function. Cooperative course taught by WSU, open to UI students (Zool 529).

530General and Comparative Neurophysiology 4 Same as Neuro 530.

531Neuroscience Laboratory Rotation 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Prereq graduate standing. Ten-week rotation through each of three research laboratories; learning procedures and techniques in neuroscience. S, F grading.

534 Advanced Neurophysiology 3 Nervous system from molecular to the behavioral level; electrophysiology. Cooperative course taught by WSU, open to UI students (Zool 534).

535Pathophysiology of Blood 2 Physiology of erythrocyte, hemostatic system and transfusion medicine.

537Physiology and Biochemistry of Neuropeptides 3 Prereq BC/BU 563, V M 521P, or Zool 553. Synthesis and metabolism, use as neurotransmitters and neurohormones, mechanisms of receptor interactions. Cooperative course taught by WSU, open to UI students (Zool 537).

538 Neuroendocrinology 3 Role of the central nervous system in controlling reproductive functions, stress, growth, biological rhythm and behavior. Cooperative course taught by WSU, open to UI students (AVS 538).

541Biochemistry 3 Prereq Chem 342. Intermediate biochemistry; introduction to metabolism and the chemical and physical properties of biomolecules. Cooperative course taught by UI (MMB 541), open to WSU students.

542 Biochemistry 3 Prereq Chem 342. Intermediate biochemistry; introduction to metabolism and the chemical and physical properties of biomolecules. Cooperative course taught by UI (MBB 542), open to WSU students.

545 Experimental Design 1 (0-2) May be repeated for credit; cumulative maximum 6 hours. Same as Neuro 545. S, F grading.

555 General and Cellular Physiology 4 (3-3) Prereq cell physiology or genetics course. Physiochemical mechanisms of cellular function.

557 Advanced Mammalian Physiology 4 Prereq V Ph 555. Function and control of mammalian organ systems.

564 Brain-Endocrine Interaction 3 Neuroanatomy, physiology, neuropharmacology and role of neuroendocrinology; the integrative regulation of endocrine and visceral functions. Cooperative course taught by WSU, open to UI students (Zool 564).

590Seminar 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

V M


502P Language and Culture for International Externships I 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, agriculure or public health professional; related to international veterinary medicine. S, F grading.


552P Small Animal Medicine II 5 Prereq V M 551P. Diagnosis and treatment of small animal diseases. Continuation of V M 551P.


554P Surgery Laboratory I 1 (0-3) Prereq c// in V M 553P. Surgical exercises using small animals.

555P Surgery Laboratory II 1 (0-3) Prereq c// in V M 553P. Surgical exercises minimizing use of living animals.


558P Diseases and Management of Pet and Wild Birds 2 (1-3) Prereq third year Vet Med. Management and handling, diagnosis and treatment of various disease conditions of pet and wild birds.

560P Clinical Problem Solving V 1 (0-3) to 3 (0-9) 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.


575P Small Animal Theriogenology I 3 (2-3) 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 herd, targeting measures of productivity and profitability.

585P Epidemiology 1 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 M 460, 463. Blood collection, storage, pretransfusion testing, component therapy and transfusion reactions.

598P Introduction to Clinics 1 (0-3) Prereq 3rd year Vet Med. Introduction to the practice of clinical veterinary medicine and surgery within the Veterinary Teaching Hospital including records, presentation and protocol. S, F grading.

599P Special Problems V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq enrollment in DVM Professional Program. S, F grading.


602P Small Animal Surgery 4 (0-12) Prereq fourth year Vet Med. Surgical cases in clinic, ward round, case discussions by students, seminars by faculty, designed surgical exercises. S, F grading.

603P Clinical Elective at Oregon State University V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year professional DVM program. Clinical medicine training in diseases of food animals and horses; clinic rounds and diagnostic procedures. S, F grading.

610P Basic Small Animal Rotation V 8 (0-24) to 12 (0-36) Prereq fourth year Vet Med. Required rotation through the medical and surgical services of the Small Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

611P Small Animal Surgery—Orthopedic Service V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Small Animal Orthopedic Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

613P Small Animal Medicine Elective Referral V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Small Animal Medicine Referral Practice Service in the Small Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

614P Small Animal Medicine—Local Practice Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Small Animal Medicine Local Practice Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

615P Small Animal Medicine—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. S, F grading.

616P Exotic Animal Medicine V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Small Animal Medicine Exotic Practice Service in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

617P Clinical Neurology V 1 (0-3) to 3 (0-9) Prereq 4th year DVM student. Rotation will emphasize neuroanatomical localization, differential diagnosis, diagnostic testing, and treatments. S, F grading.

618P Veterinary Dentistry V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq fourth year Vet Med. Clinical experience, laboratory exercises, and instructional sessions to increase proficiency in clinical dentistry. S, F grading.
630P Basic Large Animal Hospital Rotation V 6 (0-18) 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 V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med. Required rotation for Agricultural Animal Species emphasis through population medicine laboratory and Theriogenology Services of the Veterinary Teaching Hospital. S, F grading.

632P Large Animal Theriogenology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical theriogenology subjects in large animals. S, F grading.

633P Agricultural Animal Medicine/Surgery V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Electrical clinical subjects in food animal diseases and herd health/preventive medicine. S, F grading.

634P Epidemiology of Diseases V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med, Veterinary Teaching Hospital. S, F grading.

635P Preventive Medicine at Canine Center V 1 (0-3) to 8 (0-24) Prereq fourth year Vet Med. Elective clinical subjects in food animal diseases and herd health/preventive medicine. S, F grading.

636P Equine Medicine Elective V 1 (0-3) to 4 (0-12) May be repeated for credit, cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Equine Medicine Service in the Large Animal Clinic of the Veterinary Teaching Hospital. S, F grading.

637P Equine Surgery Elective V 1 (0-3) to 4 (0-12) May be repeated for credit, cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical experience with the Equine Surgery Service in the Large Animal Clinic, Veterinary Teaching Hospital.

638P Equine Track V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med, enrollment in equine career track. Clinical experience with the Equine Surgery Service of the Large Animal Clinic, Veterinary Teaching Hospital.

639P Small Animal Theriogenology V 1 (0-3) to 4 (0-12) Prereq fourth year professional DVM program. Hands-on experience in diagnosis, treatment, prevention and management of disorders related to canine and feline reproduction. S, F grading.

650P Anesthesia Case Management V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med. Required rotation through the clinical anesthesiology service of the Small Animal Clinic and Large Animal Clinic of the Veterinary Teaching Hospital. S, F grading.


652P Technical and Diagnostic Radiology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq fourth-year Vet Med. Laboratory exercises and instructional sessions to increase proficiency in clinical diagnostic radiology. S, F grading.

653P Imaging Services Elective V 1 (0-3) to 4 (0-12). May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical and laboratory experience with the Radiology Section in the Small Animal Clinic, Veterinary Teaching Hospital. S, F grading.

657P Clinical Pathology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 4 hours. Prereq fourth year Vet Med. Clinical laboratory diagnosis and interpretation. S, F grading.

657P Emergency and Critical Care V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med. Required rotation for all students through the Emergency and Critical Care Services, Veterinary Teaching Hospital. S, F grading.

676P Veterinary Research Practicum V 1 (0-3) to 8 (0-24) May be repeated for credit; cumulative maximum 14 hours. Prereq fourth year Vet Med, enrollment in research track program or approved for research career track. Individualized research project. S, F grading.

690P Externship V 1-4 May be repeated for credit; cumulative maximum 4 hours. Prereq fourth year Vet Med. Theory of practice of veterinary medicine in a non-university situation. S, F grading.

691P Guided Preceptorship V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med. Guided preceptorship in an accepted extramural clinical or laboratory setting. S, F grading.

692P Government, Corporate, and Zoological Practice Elective V 1 (0-3) to 6 (0-18) May be repeated for credit; cumulative maximum 10 hours. Prereq fourth year Vet Med. Elective experience in government, corporate, and zoological veterinary medicine arranged through nationwide matching program. S, F grading.

693P Laboratory Animal Medicine V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Elective clinical and laboratory experience with major research facilities such as the Department of Comparative Medicine, University of Washington. S, F grading.

699P Advanced Clinical Elective V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq fourth year Vet Med. Advanced clinical subjects developed as courses for fourth year veterinary students. S, F grading.

Veterinary Clinical Medicine and Surgery

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 Nikon University Seminar 2 (1-3) Prereq forth or fifth year veterinary DVM students from Nikon University. Lectures and laboratory sessions in small animal, exotic animal, and equine veterinary medicine and surgery. S, F grading.

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

582 Seminar in Clinical Medicine 1 May be repeated for credit.

583 Advanced Anesthesiology 2 Prereq DVM degree. Advanced veterinary anesthesiology as applied to clinical practice.

584 Comparative Theriogenology 1 Prereq DVM degree. Lectures from WSU College of Veterinary Medicine and Department of Animal Sciences and from UI Department of Animal and Veterinary Science.

585 Selected Topics in Advanced Clinical 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).

595 Advanced 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 595).

594 Advanced Small Animal Surgery 3 (2-3) May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Clinical experimental techniques.

595 Advanced Laboratory Diagnosis V 1-3 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM degree. Advanced clinical laboratory diagnosis and interpretation.

596 Advanced Imaging V 1-3 May be repeated for credit. S, F grading.

597 Diagnosis and Treatment of Surgically Correctable Soft Tissue Diseases in Small Animals V 1-2 May be repeated for credit; cumulative maximum 6 hours. Prereq DVM or equivalent or preapproval. Review of recent advances in diagnosis and treatment of diseases in the field of small animal surgery.

598 Surgery Residents Seminar 1 May be repeated for credit. Prereq DVM degree. Surgery residents’ and interns’ presentations of case reports, literature reviews and research. S, F grading.

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

700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.
Description of Courses

Veterinary Medicine

V M 500P Professional Orientation and Ethics 1 Orientation to and ethics of the veterinary medical profession for first-year veterinary students. S, F grading.

V 534P Veterinary Immunology 3 (2-3) Prereq major in Vet Med or graduate student in Vet S. Immunology for the professional veterinary student.

V 535P Veterinary Virology 3 Prereq major in Vet Med or graduate student in Vet S. Virology for the professional veterinary student.

V 536P Veterinary Bacteriology 4 (3-3) Prereq second year Vet Med. Bacteria that produce disease in animals.

V 537P Veterinary Parasitology 4 (3-3) Prereq second year Vet Med. Arthropods, protozoa, and helminths of veterinary importance; their host-parasite relationship and control.


V 543P Veterinary Medicine and Human Health 2 Prereq third year Vet Med. Preparation for veterinary students in public health and food hygiene.

V 545P [M] Pathology I 3 (2-3) Prereq V M 520P. Structural and functional alterations in disease; elementary oncology. Cooperative course taught by WSU, open to UI students (VS 445).


V 559P Special Animal Medicine V 1-3 Prereq third year Vet Med. Handling, restraint, care, normative features, procedures and diseases of unusual animals as pets or those used in food production or research.

V 655P Diagnostics V 1 (0-3) to 4 (0-12) Prereq fourth year Vet Med. Advanced study in diagnostic pathology, toxicology, and microbiology.

V 694P Avian Medicine V 4 (0-12) Prereq fourth year Vet Med. Laboratory diagnosis and pathology of avian (pet bird and commercial fowl) diseases.

Veterinary Microbiology

V Mic 435 Disease Concepts for Wildlife Biologists 3 Biological aspects of infectious diseases and environmental contaminants in wild mammalian and avian populations. Cooperative course taught by WSU, open to UI students (VS 435/WLF 444).

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

V 531 Mechanisms of Immune Regulation in Laboratory and Domestic Animals 3 Prereq Micro 412. Analysis of immune regulation in vertebrates; ontogeny, phylogeny, immune regulation.

V 532 Virology 3 Prereq BC/BP 364; Micro 414 or V M 535P. Advanced topics in basic virology.

V 535 Advanced Readings in Veterinary Microbiology 1 (0-3) May be repeated for credit. Prereq fourth year in Vet Med or graduate student in Vet S. Supervised reading program which peruses publications of intermediate technical difficulty and advanced textbooks.

V 536 Diagnostic Microbiologic Conference 1 (0-3) May be repeated for credit. Prereq graduate student in Vet S. Identification of animal pathogens in clinical material.

V 537 Diagnosis of Viral and Rickettsial Diseases of Domestic Animals 3 (1-6) Prereq V M 534P, 535P, 546P. Clinical, pathological, and laboratory diagnosis of viral and rickettsial diseases of domestic animals.

V 541 Advanced Diagnostic Microbiology 1 (0-3) May be repeated for credit; cumulative maximum 8 hours. Prereq V M 534P, 535P, 536P. Microbiology laboratory for performing and interpreting virologic, serologic, and related tests for the diagnosis of animal diseases.

V 562 Molecular Diagnostic Microbiology 1 (0-3) May be repeated for credit; cumulative maximum 3 hours. Prereq V Mic 541 or c/l. Discussion and molecular laboratory for detection and identification of infectious agents for the diagnosis of animal diseases.

V 572 Advanced Topics in Microbiology, Parasitology, or Immunology V 1-3 May be repeated for credit; cumulative maximum 4 hours. Advanced topics in microbiology, parasitology, or immunology presented in short-course, or workshop format.

V 591 Seminar in Diagnostic Microbiology 1 May be repeated for credit; cumulative maximum 8 hours. Seminar in diagnostic veterinary microbiology.

V 592 Advances in Immunobiology 1 May be repeated for credit. Cooperative course taught by WSU, open to UI students (VS 592).

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

V 700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

V 800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

Veterinary Pathology

V Pa 410 Survey of Pathobiology 3 Overview of pathobiology experimental oncology, epidemiology, and aging that emphasizes detecting, understanding and preventing disease.

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

V 501 Case-based Learning in Veterinary Pathology 1 (0-3) to 3 (0-9) Prereq second year Vet Med or DVM degree. Principles of pathophysiology, infectious disease, laboratory diagnosis, zoonoses, and food safety learned through the development of multistep teaching cases.

V 525 Introductory Readings in Veterinary Pathology 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Supervised introductory readings of publications, books, and research proposals.

V 542 Advanced Diagnostic Pathology V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Prereq V M 546P. Necropsy laboratory for techniques and skills in performing and interpreting necropsy material.

V 543 Laboratory Animal Pathology 3 May be repeated for credit; cumulative maximum 6 hours. Prereq V M 559P. Pathology of principal diseases of laboratory animals.


V 545 Mechanisms of Disease 5 Prereq Micro 412 or V M 534P, 545P. Biochemical and immunologic mechanisms involved in disease processes from the comparative standpoint.

V 547 Advanced Veterinary Parasitology 3 Prereq graduate or advanced undergraduate. Mechanisms involved in host-parasite relationships important to control of parasitic infections.

V 548 Introduction to Research 1 Introduction to research.

V 555 Research in Progress Seminar 1 May be repeated for credit; cumulative maximum 8 hours. Presentation of on-going student research project results.

V 569 Research Proposal 1 (0-3) May be repeated for credit; cumulative maximum 2 hours. Written preparation and oral presentation of a research proposal.

V 571 Advanced Topics in Pathology V 1-3 May be repeated for credit; cumulative maximum 4 hours. Advanced topics in pathology presented in short-course, or workshop format.

V 592 Anatomic Pathology Seminar 1 May be repeated for credit. Histopathologic description and diagnosis.

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

V 700 Master’s Research, Thesis, and/or Examination Variable credit. For MS in veterinary science only. S, F grading.

V 800 Doctoral Research, Dissertation, and/or Examination Variable credit. For PhD in veterinary science only. S, F grading.

Department of Women’s Studies

Director, N. Sturgeon; Associate Professor, D. Aguilar; Assistant Professor, M. Bloodworth; Instructors J. Meuth, M. Sciachitano.

The Department of Women’s Studies offers an interdisciplinary study of women, with an emphasis on their lives, roles, and contributions. The Bachelor of Arts in Women’s Studies 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 department offers a major and minor in Women’s Studies. The major requires a minimum of 39 credit hours which must include W St 200, 300, 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

Students beginning post-secondary enrollment fall 2000 must complete one American Diversity [D] course within their General Education Requirements. This course adds no credit hours to
Department of Women's Studies

the total GERs as American Diversity courses also fulfill GER requirements in another area, such as in the humanities, social sciences, or the Tier III course. Honors students complete Honors Requirements in place of GERs.

WOMEN’S STUDIES DEGREE PROGRAM (120 HOURS)

Freshman Year

First Semester

<table>
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<tr>
<th>Course</th>
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<tr>
<td>W St 101 [W] (GER)</td>
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<td>GenEd 110 [A] (GER)</td>
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<tr>
<td>Science Elective (GER)</td>
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<td>W St 200 [S] (GER)</td>
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Second Semester

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<tr>
<td>Arts &amp; Humanities [H,G] (GER)</td>
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<tr>
<td>Biological Sciences [B] (GER)</td>
<td>4</td>
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<tr>
<td>GenEd 111 [A] (GER)</td>
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<tr>
<td>Social Sciences [S,K] (GER)</td>
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<td>W St Humanities Elective1</td>
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Sophomore Year

First Semester

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<td>Communication Proficiency [C,W] (GER)</td>
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<td>Math Proficiency [N] (GER)</td>
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<td>W St 300 [S] [M] (GER)</td>
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<td>W St Humanities Elective1</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>Intercultural [I,G,K] (GER)</td>
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<tr>
<td>W St Social Science Electives6</td>
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Junior Year

First Semester

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<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER)</td>
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<tr>
<td>Physical Sciences [P] (GER)</td>
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<td>W St 391</td>
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<td>Electives</td>
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Second Semester

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<td>Arts &amp; Humanities, Intercultural, or Social Sciences [H,G,L,S,K] (GER)</td>
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<tr>
<td>W St 410</td>
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Senior Year

First Semester

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<td>W St 481 [M]</td>
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Second Semester

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<tr>
<td>Electives</td>
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1 Consult advisor.

Description of Courses

Women's Studies

W St

150 [S] [D] Marital and Sexual Life Styles 3 Same as Soc 150.

200 [S] Introduction to Women's Studies 3 Multi-disciplinary perspectives on women and on their past, present, and potential contributions.


214 Gender and Culture in America 3 Same as Anth 214.

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


230 Human Sexuality 3 Same as Psych 230.

235 [H] [D] African American History 3 Same as CAC 235/Hist 205.

250 [S] The American Health Care System 3 Same as Anth 250.

255 [S] [D] Chicana/o History 3 Same as CAC 255.

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. Introductions between race, class and gender through case studies; experiences in interdisciplinary methods.

301 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours.

302 [S] [D] Contemporary Masculinity and Men's Issues 3 Analysis of the development of masculinity in its biological and cultural forms.

303 [S] Gender and Politics 3 Same as Pol S 305.

306 [H] [M] Introduction to Literary Criticism 3 Same as Engl 308.

308 [H] Women Artists I, Middle Ages-1900 3 Same as FA 308.

309 [H] Women Writers 3 Same as Engl 309.

310 [H] Women Artists II, Twentieth Century 3 Same as Faith 310.

311 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subjects/issues relating to women.

312 [H] [D] Philosophy and Feminism 3 Same as Phil 312.

315 Women in Management and Leadership 3 Analysis of women’s historical and contemporary role in American management.

316 [K] Gender in Cross Cultural Perspective 3 Same as Anth 316.

320 Resource Management and Problem Solving 3 Same as H D 320.

321 Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subjects/issues relating to women.

324 [S] Psychology of Women 3 Same as Psych 324.

330 Women and the Law 3 Historical base of women’s legal rights and obligations; analysis of legislative and judicial responses to sexual discrimination.

332 [I] Global Feminisms 3 Prereq W St 200 or Anth 101. An interdisciplinary approach to examining women’s roles and experiences throughout the world and different approaches to feminisms.

335 [K] Women in Latin American History 3 Same as Hist 335.

337 Women in the Ancient World 3 Same as Hist 337.

350 [S] European Women’s History, 1400-1800 3 Same as Hist 350.

351 [S] [D] The Family 3 Same as Soc 351.


372 [S] [D] Native American Women in Traditional and Contemporary Societies 3 Same as CAC 372.

375 [M] Women and Ethics 3 Prereq Phil 101 or W St 200. Study of gender and feminisms and their effect on contemporary ethical theories and issues.

380 [S] History of Medicine 3 Same as Hist 380.

382 Modern American Literature 3 Same as Engl 382.

384 [S] [D] Sociology of Gender 3 Same as Soc 384.

391 Seminar in Women's Studies 3 Prereq W St 200. Analysis of the intersection of gender, race, class, and sexuality through popular cultural texts/film, television, art, literature, performance.

398 [H] [D] History of Women in the American West 3 Same as Hist 398.

402 Cross-Cultural Gender and Kinship 3 Same as Anth 402.

403 [S] Violence Toward Women 3 Same as Crm J 403.

405 [M] Contemporary Art: Theory and Practice 3 Same as FA 405.

406 [T] Women and Work 3 Prereq W St 200; completion of one Tier I and three Tier II courses. Social science analysis of the relationship between women and work in contemporary American society.


409 [H] Women Writers in the American West 3 Same as Engl 409.

410 Internship V 1-12 Prereq W St 200; 300 or 481 with B or better; by interview only. May be repeated for credit; cumulative maximum 12 hours. Supervised experience in approved campus or community agencies or projects focusing on women’s issues.

411 Asian Pacific American Women 3 Same as CAC 411.

421 The Frontier and the American West 3 Same as Hist 421.

454 [T] La Chicana in US Society 3 Same as CAC 454.

460 [K] Gender, Race, and Nature in American Culture 3 Prereq W St 200 or 300; completion of one Tier I and three Tier II courses. Exploration of American culture through examination of cultural representations of nature in mainstream and environmental politics.

464 Gender and the Media 3 Same as Com 464.

475 Marginality and Movement 3 Same as MvSt 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] [D] Lesbian and Gay Studies 3 Prereq Soc 101, 102, or W St 200. Prereq completion of one Tier I and three Tier II courses. Interdisciplinary exploration of issues related to gender and sexuality, explored transhistorically and cross-culturally, including race, class and age differences.

485 Theoretical Issues in Gay and Lesbian Studies 3 Prereq 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.

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<th>Title/Position</th>
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MSLS, University of Illinois
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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:

- **English**: Four years (including at least one year each of composition and literature).
- **Mathematics**: Three years (one year of geometry and two years of algebra including an introductory component of trigonometry).
- **Science**: Two years (including at least one year of laboratory).
- **Social Science**: Three years (including at least one year of history).
- **Foreign Language**: Two years of a single foreign language (or approved sign language).
- **Fine Arts**: One year of fine, visual, or performing arts, or one additional year of academic elective.

Applicants from unaccredited high schools may be required to pass validating examinations.

3. REGULAR ADMISSION OF FRESHMEN 25 YEARS OF AGE OR OLDER. A student 25 years of age or older who is seeking initial entry at the freshman level may be offered regular admission if, as a minimum, the student presents a score of at least 700 on the SAT, 15 on the ACT, or 83 on the Washington Pre-College Test taken prior to June 1, 1989.

ADVANCED STANDING (Transfer Applicants)

4. TRANSFER REQUIREMENTS
   (a) Applicants with at least 27 semester hours of transferable credit from a regionally accredited post-secondary institution must present a cumulative grade point average of at least 2.00.
   (b) Applicants with less than 27 semester hours of transferable credit will be considered for admission if they also meet the freshman requirements and the 2.00 grade point average transfer requirement.

5. DOCUMENTS REQUIRED. An applicant for admission to advanced standing, in addition to meeting the requirements for entrance to the freshman class, shall present: (a) an application; (b) a complete official transcript from each higher institution attended; and (c) a record of high school work if fewer than 27 transferable semester credit hours.

   All advanced standing shall be tentative pending the satisfactory completion of at least one semester’s work.

6. TRANSFER CREDIT. (See Rule 114)
   (a) Colleges and universities must be regionally accredited for transfer credit to be awarded.
   (b) Ninety semester hours shall be the maximum allowed by transfer toward a four-year degree, and 120 semester hours shall be the maximum amount allowed by transfer toward a five-year degree.
   (c) The maximum transfer credit allowed from regionally accredited two-year or community colleges shall be 60 semester hours toward a baccalaureate degree irrespective of when those hours were earned provided that the courses are essentially equivalent to those at WSU.
   (d) Students may be allowed additional credit from a regionally accredited two-year or community college under the following conditions:
      (1) The student has been 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 where the student 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.) 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 who have completed at least 70 quarter credit hours toward completion of an approved A.A. degree may complete the Direct Transfer Associate (A.A.) degrees from a Washington or Oregon two-year college after their initial enrollment at WSU.

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>
<tr>
<td>Biology</td>
<td>3</td>
<td>Bio S 103, 104 (8)</td>
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<tr>
<td>AP Examination</td>
<td>Score</td>
<td>WSU Course (credits) (cont.)</td>
</tr>
<tr>
<td>-------------------------</td>
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<tr>
<td>Calculus AB</td>
<td>3</td>
<td>Math 171 (4)</td>
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<tr>
<td>Calculus BC</td>
<td>3</td>
<td>Math 171, 172 (8)</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3</td>
<td>Chemistry Elective [P] (3)</td>
</tr>
<tr>
<td>Computer Science A</td>
<td>3</td>
<td>Cpt S 150 (4)</td>
</tr>
<tr>
<td>Computer Science AB</td>
<td>3</td>
<td>Cpt S 150, 250 (8)</td>
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<tr>
<td>Economics (Micro)</td>
<td>3</td>
<td>Econ 101 (3)</td>
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<tr>
<td>Economics (Macro)</td>
<td>3</td>
<td>Econ 102 (3)</td>
</tr>
<tr>
<td>English Language/Comp</td>
<td>3</td>
<td>English Elective (3)</td>
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<td>English Language/Comp</td>
<td>4</td>
<td>Engl 101 (3)</td>
</tr>
<tr>
<td>English Literature/Comp</td>
<td>3</td>
<td>English Elective (3)</td>
</tr>
<tr>
<td>English Literature/Comp</td>
<td>4</td>
<td>Engl 101, 108 (6)</td>
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<tr>
<td>French Language</td>
<td>5</td>
<td>Fren 101 (4)</td>
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<tr>
<td>French Literature</td>
<td>3</td>
<td>French Elective (3)</td>
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<tr>
<td>German Language</td>
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<td>5</td>
<td>Ger 101, 102 (8)</td>
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<tr>
<td>Government (American)</td>
<td>3</td>
<td>Political Science Elective (3)</td>
</tr>
<tr>
<td>Government (American)</td>
<td>4</td>
<td>Pol S 101 (3)</td>
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<tr>
<td>Government (Comp.)</td>
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<tr>
<td>Government (Comp.)</td>
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<tr>
<td>History (European)</td>
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<tr>
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<td>Hist 101, 102 (6)</td>
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<tr>
<td>Latin: Vergil</td>
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<td>Classics Elective (4)</td>
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<tr>
<td>Latin: Latin Literature</td>
<td>3</td>
<td>Classics Elective (3)</td>
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<tr>
<td>Music Theory</td>
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<tr>
<td>Music Listening/Lit.</td>
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<td>Music Elective [H] (3)</td>
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<tr>
<td>Physics B</td>
<td>3</td>
<td>Physics Elective (no lab) [P] (6)</td>
</tr>
<tr>
<td>Physics C: Mech.</td>
<td>3</td>
<td>Physics Elective (no lab) [P] (3)</td>
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<tr>
<td>Physics C: E + M</td>
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<td>Physics Elective (no lab) [P] (3)</td>
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<tr>
<td>Psychology</td>
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<td>PsyCh 105 (3)</td>
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<tr>
<td>Russian Language</td>
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<td>Russ 101 (4)</td>
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<tr>
<td>Russian Language</td>
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<td>Russian Elective (3)</td>
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<td>Spanish Language</td>
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<td>Span 101 (4)</td>
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<td>Spanish Language</td>
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<td>Span 101, 102 (8)</td>
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<td>Spanish Literature</td>
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<td>Spanish Elective (3)</td>
</tr>
<tr>
<td>Statistics</td>
<td>3</td>
<td>Math 205 (3)</td>
</tr>
</tbody>
</table>

(b) College Level Examination Program (CLEP)

(1) General and Subject Examinations—Credit for CLEP will be granted if the examination is passed with scores established by the department concerned in consultation with the Director of Admission. Credit will be granted for scores at the 50th percentile or above. Credit will be granted for the comparable Washington State University course, or elective credit may be granted. Not more than 6 semester hours of credit will be granted for each examination.

(2) Students with junior standing (60 semester credits or more) are not eligible for credit through CLEP examinations. Contact the Office of Admissions for specifics.

(c) Challenge Examinations—Matriculated students currently registered at Washington State University, with permission of their 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.

(e) Peace Corps and Volunteers in Service to America (VISTA) Credit for training in the Peace Corps or VISTA will be granted for having completed specific courses, under regular catalog course numbers, as shown on a regular transcript from an accredited college or university.

(f) Other Test Programs. Credit for other testing programs such as the Washington Pre-College Test Program and WSU departmental placement examinations will be granted in accordance with policies established by the university and academic departments.

**AUDITING CLASSES**

20. PERMISSION TO AUDIT. An auditor is a class visitor permitted on a space-available basis to observe class discussions but not take examinations or consume the instructor’s time. Attendance in class beyond three visitations requires official approval on the Request for Permit to Audit card. Students may seek permission, after the start of classes, to audit a lecture course by securing the approval of the class instructor. Those wishing to audit or change from credit to audit must pay the appropriate fee and submit the signed audit card to the Office of the Registrar before the end of the fourth week of instruction in the semester. An enrollment change from audit to credit is limited to the first two weeks of instruction. A maximum of two audits are allowed for any semester or term. A registration fee per audit hour is charged for any semester or term for other than regularly enrolled full-fee-paying students. Senior citizens are exempt from this fee under the provisions of RCW 28B.15.540, provided the prescribed eligibility requirements are met. Personnel who have received authorization for the faculty/staff fee waiver are exempt from the audit fee up to 6 hours (including audits) in any one semester or 4 hours (including audits) in the summer session. Said limitation includes any combination of credit and audit hours. Audit fee is non-refundable.

21. NO CREDIT FOR AUDITING. No university credit will be allowed for auditing courses, nor may students apply for or take special examinations for university credit in courses which they have audited. Students may not take challenge examinations (see Rule 15c) in courses for which 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 carry a regular or adjunct faculty appointment at the regionally accredited college or university.

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 90th.)

   (a) Repeating courses graded below C. A grade of C- or below may be disregarded if the student repeats the course and earns another grade. The last grade received shall stand as the course grade, and the last grade only shall count on the cumulative grade point average and contribute to the total number of hours required for graduation. For some purposes, the first grade only shall be used. For purpose of record the series of repeats and grades will be retained on the student’s official record. Grades C and above may not be repeated for credit or grade points. It is the student’s responsibility to indicate all resident repeats at the time of registration. Repeats by correspondence, extension, or in residence at other institutions must be reported in writing to the Office of the Registrar.

   (b) Repeating for additional credit.
      (1) Some courses have been approved for repeat credit, i.e., the student may re-enroll in the course during a subsequent semester and credit may be accumulated. Such courses are designated in the WSU catalog as “May be repeated for credit” and will list the maximum credit limitation.
      (2) Courses which have been approved for repeat credit, such as topics, may offer multiple sections of a course during any one semester. Students may not enroll in more than one section of these courses in any one semester; the repeat credit approval applies only to re-enrollment in a subsequent semester.

### 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 placement tests as a prerequisite to enrollment in appropriate courses.

50. **PASS, FAIL GRADING OPTIONS.** Pass, fail options are available for undergraduate and graduate students. The advisor’s approval is required for...
undergraduates. No courses designated as meeting General Education Requirements for Graduation may be taken pass, fail by any undergraduate. No more than two courses may be taken on a pass, fail basis during any given semester. Two courses is the limit for summer session.

A total of six courses may be taken on a pass, fail basis by students initiating and completing work for a baccalaureate degree at Washington State University. Students in the College of Veterinary Medicine with advisor approval may enroll for a total of six courses in the professional curriculum on a pass, fail basis, subject to the regulations listed above. University Honors College courses may be taken on a pass, fail basis only with the permission of the Honors College Dean.

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

Appendix—Academic Regulations

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70. WITHDRAWAL FROM THE INSTITUTION. Students who wish to withdraw from the institution initiate the withdrawal through the Office of Student Affairs at WSU Pullman or the Student Services Office at WSU Spokane, WSU Tri-Cities or WSU Vancouver, or through the Extended Degree Program Office.

(a) Students withdrawing during the first four weeks of the semester will have their permanent records marked “withdrew (date).” (Course enrollments will not be recorded.)

(b) Students withdrawing after the fourth week through the last day of instruction (end of the 15th week) will have their permanent records marked “withdrew (date),” and a grade of W will be recorded for each course enrollment.

(c) Students on academic probation during the semester of their withdrawal must obtain permission of the Student Advising and Learning Center to re-enroll.

ATTENDANCE

71. ADMISSION TO CLASSES. Instructors shall not permit a student to be enrolled in a class or admit a student more than three times as a visitor without an official enrollment notice.

72. CLASS ATTENDANCE DURING THE FIRST WEEK TO ENSURE ENROLLMENT. Students who have not attended class and laboratory meetings during the first week of the semester may be dropped from the course by the department. (Students should not assume that they have been dropped without verification from the department or Registrar’s Office.) Students having extenuating circumstances which prevent their attendance during the first week should notify the Office of Student Affairs. Student Affairs will notify instructors of the absence and the reason for it. Valid reasons for missing classes do not relieve the student of making up the work missed.

73. ABSENCES. Absences impede a student’s academic progress and should be avoided.

(a) UNIVERSITY SPONSORED. Any student who is required to participate in off-campus, university-sponsored activities such as field trips, musical performances, judging teams, intercollegiate athletic events, etc., should obtain an official Class Absence Request form from the faculty or staff member supervising the off-campus activity. The form must contain specific information concerning the activity and date, be signed by the supervising faculty or staff member, and be submitted by the student at least one week in advance to the individual instructors of the student’s classes. It is requested that a student not be penalized for absence from class provided a properly signed Class Absence Request form has been filed with the instructor prior to the absence. These university-sponsored absences are subject to an instructor’s attendance policy and are not intended to imply additional acceptable absences. In all instances, it is the student’s responsibility to make up all work missed. Problem cases should follow the Academic Complaint Procedures, Rule 104.

(b) OTHER EXCUSED ABSENCES. Students must sometimes miss examinations or other academic obligations affecting their grades because of illness, personal crises, mandated court appearances, parental responsibilities, and the like. As long as such absences are not excessive, it is hoped that the instructor will provide and document reasonable accommodation. The instructor may require the student to submit a written explanation of the absence, but written excuses from health care personnel should not be required since these requests frequently put the health care personnel in untenable positions. A student who is dissatisfied with the instructor’s accommodation may follow the Academic Complaint Procedure, Rule 104. It is recommended that the instructor explain the procedures for excused absences early in the semester, preferably in a written syllabus distributed to all students in each class. Once announced, these procedures should be scrupulously followed unless extraordinary circumstances require an exception.

Students who attempt to gain advantage through abuse of this policy (e.g., by providing an instructor with false information) may be referred to the Office of Student Affairs for disciplinary action.

EXAMINATIONS

74. FINAL EXAMINATIONS WEEK. The final examination week 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 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 no 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 evening exam.

(NOTE: Officially approved and scheduled night examinations have priority over all other academic and non-academic evening activities.)

77. SPECIAL PERIODS FOR FINAL EXAMINATIONS. During examination week time will be allowed to large courses for special examinations of the entire group. The privilege of giving such special examinations is necessarily limited in terms of periods available for such tests. The courses having the greatest number of students will be given first opportunity to utilize the special examination periods available.

78. THREE OR MORE IN ONE DAY. During final examination week, if the scheduled arrangement results in students having three or more examinations scheduled for any one day, any one of their instructors is authorized to excuse the students from the regularly scheduled examination and give a final examination to the students during the special exam 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 request appears to be made in good faith, the instructor should make alternate arrangements for administration of the examination or test, considering the integrity of the testing process, and fairness to all the students. If the instructor believes the request not to be in good faith, or if the instructor and the student are unable to agree on arrangements, the student or the instructor should seek the assistance of the department chair, cognizant dean, or the Vice Provost for Academic Affairs, in that order. The student may also contact the University Ombudsman. Students should
understand that fairness in the examination process is an important consideration in the educational process and that they have a duty to cooperate in making alternate arrangements.

83. ACCOMMODATION OF DISABILITIES IN THE ADMINISTRATION OF EXAMINATIONS. Washington State University is committed to providing access to education for all of its students. In addition, federal law states that academic requirements must be modified on a case-by-case basis to afford qualified students with handicaps an equal educational opportunity. The nature of certain disabilities may necessitate accommodation of these disabilities in the administration of exams. It is the policy of the university to provide reasonable accommodation consistent with the fair and secure administration of its programs.

A student with a disability who may require special accommodation should contact the Student Disability Resource Center (DRC) when he or she arrives on the WSU Pullman campus. On the branch campuses a student should contact the Office of Student Services. A file documenting the disability will be established, and an accommodation form initiated. The instructor may ask for verification of a disability when a student requests an accommodation for an examination. The Office of Student Services or DRC provides the disabled student with a disability with an accommodation form verifying a disability and specifying the appropriate testing accommodation designed to fit the individual needs of that student. If the instructor disagrees with the arrangements as presented in the form, the instructor and/or student should seek the assistance of the DRC, department chair, cognizant dean or Vice Provost for Academic Affairs, in that order. The student and instructor may also contact the University Ombudsman or Center for Human Rights.

88. PENALTY FOR ACADEMIC DISHONESTY. Cases of academic dishonesty shall be processed in accordance with the Academic Integrity Policy, as printed in the Student Handbook and the Faculty Manual and as available from the Office of Student Affairs.

89. FINAL GRADE SUBMITTAL. Final grades will be submitted to the Registrar’s Office by 4:00 p.m. on the second working day after the close of final 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 (4) point maximum grading scale. The grade A is the highest possible grade, and grades below D are considered failing. Plus (+) or minus (-) symbols are used to indicate grades that fall above or below the letter grades, but grades of A+ and D- are not used. For purposes of calculating grade points and averages, the plus (+) is equal to .3 and minus (-) equals .7 (e.g., a grade B+ is equivalent to 3.3 and A- is 3.7). A student’s work is normally rated in accordance with the following definitions:

90a. A. Student work demonstrates consistently excellent scholastic performance; thorough comprehension; ability to correlate the material with other ideas, to communicate and to deal effectively with course concepts and new material; reliability in attendance and attention to assignments.

90b. B. Student work demonstrates superior scholastic performance overall, reliability in attendance, and attention to assignments; may demonstrate excellence but be less consistent than the work of an A student.

90c. C. Student work demonstrates satisfactory performance overall, as well as reliability in attendance, and attention to assignments.

90d. D. Student work demonstrates minimal, barely passing performance overall; limited knowledge of subject matter.

90e. F. Student work demonstrates unsatisfactory performance and comprehension or unfulfilled requirements. The grade is failing.

90f. S. (Satisfactory.) Grade given upon satisfactory completion of courses numbered 499, 600, 700, 702, 800, special examinations (Rule 15) and other courses duly authorized for S, F grading by the Faculty Senate. (Courses approved for S, F grading are footnoted in the Fall and Spring Time Schedules.) A, S, or F grades only are used to report physical education activity grades. Courses approved for S, F grading may also be graded S at midterm indicating satisfactory progress.

90g. P. (Passing.) A satisfactory grade for a course taken under the pass, fail Grading Option. Instructors will turn in regular letter grades for all students enrolled in courses under the pass, fail option but grades will appear on the student’s permanent record as P (Passing) or F (Failure).

90h. I. (Incomplete.) The term is used to indicate that a grade has been deferred. It is for students who for reasons beyond their control are unable to complete their work on time. It is strongly recommended that students who are granted an Incomplete limit their total number of credits to 18 credits (including credits for the Incomplete course and any new courses) during the semester when they are finishing an Incomplete. Undergraduates or graduates who receive an I grade in an undergraduate course (100–499) have up to the end of the ensuing year to complete the course, unless a shorter interval is specified by the instructor. If the incomplete is not made up during the specified time or the student repeats the course, the I is changed to an F. (See Rule 34.) Faculty are required to submit an Incomplete Grade Report (IGR) to the departmental office with every I given. The IGR must specify conditions and requirements for completing the incomplete, as well as any time limitations less than one year.

90i. W. This is the term to be used if the student has filed, in the Registrar’s Office, official notice of a withdrawal from the course prior to the end of the 9th week, or withdrawing 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 as an error has been made in the Registrar, except in the case of clerical error, which the instructor may correct by so certifying to the Registrar. Such change must be approved (signature required) by the chairperson of the department in which the course was offered. Grade corrections must be processed within one year of the end of the term for which the original grade was given. In extenuating circumstances, exceptions to the one-year limit for correction of grade errors may be considered by petition to the Registrar’s Office.

99. GRADUATE STUDENT GRADES. On a program leading to an advanced degree, graduate students must attain a minimum grade point average of 3.00 on their graduate programs and a minimum grade point average of 3.00 in all 300–400-level and graduate courses. No grade below C is accepted in any course for graduate credit.

100. THE GRADE POINT SYSTEM

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<th>Grade</th>
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<tr>
<td>A</td>
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<td>A-</td>
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<tr>
<td>B</td>
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<td>B-</td>
<td>provides 2.7 grade points per credit hour</td>
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<tr>
<td>C+</td>
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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 the branch campuses, the procedure is identical except that the academic area coordinator shall substitute for the department chair and the campus dean shall substitute for the college dean.

105. 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 its 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 the signatures of their department chairperson or director and dean on the appropriate form available in the undergraduate degree office of the Registrar’s Office.

110. 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.

(b) The five-year degree (B Arch, BS Cst M, B Phar):
1. Meet requirements 1, 2, 3, and 7 listed under (a) above.
2. Complete any of the five-year programs.
3. Complete the fifth year under the direction of the college in which the degree is to be granted. If any portion of the final year’s work is to be completed at another institution, advance approval must be obtained in writing, from both the department chairperson and the dean of the college.
4. Earn a minimum of 150 semester hours of credit, no more than 10 of which may be from PEA (Physical Education Activity) courses. (See Rule 6.)

111. REQUIREMENTS FOR THE DOCTOR OF VETERINARY MEDICINE DEGREE (DVM)

(a) Complete the four-year professional program.
(b) Earn a baccalaureate degree from an accredited institution.
(c) Earn twice as many grade points as the number of graded hours required in the professional program.

112. REQUIREMENTS FOR MASTER’S DEGREES

(a) Spend not less than the equivalent of two semesters in residence (except for external programs approved by the Graduate Studies Committee).
(b) Earn not less than 30 semester hours of credit with a minimum of 21 semester hours of course work for a thesis degree program or 26 semester hours of course work for a nonthesis degree program.
(c) Earn a minimum grade point average of 3.00 on a graduate program in all upper-division and graduate course work completed for the master’s degree.
(d) Earn a minimum grade point average of 3.00 for all course work taken as a graduate student.
(e) Successfully complete graduate examinations.

113. 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.

114. REQUIREMENTS FOR 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.

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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East of Seattle, Washington State University is located in Pullman, 80 miles east of Seattle.